

TENDER BID DOCUMENT

e-TENDER For

**Design,Supply,Installation,Testing,
Commissioning with five years of
Maintenance & Performance
Warrantee Contract (MPWC) of
5kWp SPV Power Plant each
at
31 Subordinate Courts in Manipur**

NIB No. MANIREDA / SPP / SC /2014/1

Under

**Jawaharlal Nehru National Solar Mission
Of
The Ministry of New and Renewable Energy
For the Year 2013-14**

Manipur Renewable Energy Development Agency (MANIREDA)

Science & Technology Complex, SAI Road,Takyelpat,Imphal-795001
Ph. : 0385-2444027,2058535, Fax : 0385-2444027,
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Website : www.manireda.com

(This tender document is having 41 pages including this page)

Cost of bid document: Rs 1,500/-

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1. Notice Inviting Bid

Manipur Renewable Energy Development Agency (MANIREDA)

Science & Technology Complex, SAI Road, Takyelpat, Imphal-795001

Tele Fax : 0385-2444027; e-mail: manireda99@yahoo.com; Website: www.manireda.com

NIB No. : MANIREDA/SPP/SC/2014/1

Imphal, dated: 29/01/2014

Online tenders are invited from the reputed manufacturers of MNRE approved channel partners for design, supply, installation & commissioning of 5 years MPWC 5kW SPV Power Plant each at 31 subordinate Courts in Manipur as per the details given below:

Item	Tender No.	Total capacity	Cost of Tender Document	Earnest Money
Supply, installation & commissioning of 5KW SPV Power Plant each at 31 subordinate Courts in Manipur	MANIREDA/SPP/SC/2014/1	5x31=155kW	Rs1500/-	Rs 8.50 lakhs

Tender Document can be downloaded from website: www.manireda.com / www.manipur.gov.in for which the cost of Tender Document amounting Rs 1500/- is to be enclosed as demand draft/Banker's Cheque, in favour of Director, MANIREDA, payable at Imphal during submission of hard copy of tender, failing which, tender shall not be considered. Bidders have to upload their bid at <https://manipurtenders.gov.in>

Bidders have to upload Bid to the aforesaid website as well as submit hard copy. Uploading of tender documents shall be up to 12.00 noon on 18/02/2014. Hard copy of bid documents and Cost of Tender document and Earnest Money shall be submitted from 12.00 noon of 18/02/2014 to 12.00 noon of 20/2/2014. The Technical bid shall be opened at 2.00 p.m, 20/2/2014. The financial bid of the technically qualified Bidders only shall be opened through e-tender, for which date & time will be informed latter.

Prospective bidders are requested to remain updated for any amendments/modifications/cancellation, etc. in the bid document conditions/terms, in the above mentioned website. No separate notifications will be given for such amendments/ modifications in the print media (press) or intimated to the bidders separately.

Director, MANIREDA, reserves the right to reject any or all tenders without assigning any reasons thereof.

Sd/-
Director , MANIREDA

2. Bid Details

TENDER FORM NO :.....
 ISSUED TO : M/s.....
 TENDER FEE DETAILS : Vide Receipt No.....Dt.....
 DD No..... Bank.....

Sl	Description	Details
1.	Notice Inviting Bid (NIB) No.	MANIREDA/SPP/SC/2014/1
2.	Scope of work	Design, Manufacturing, supply, installation & commissioning including 5(five) years Maintenance and Performance Warrantee Contract (MPWC) of 5kW SPV Power Plant each in 31(thirty one) subordinate Courts of Manipur. Estimated quantity to be installed is 5kW x 31nos.=155kW SPV Power plants. The quantity mentioned above is tentative & is subject to increase or decrease depending on the actual requirement at the time of placing order and resources available and as per discretion of MANIREDA.
3.	Place of submission of bid documents and address for communication	Manipur Renewable Energy Development Agency (MANIREDA), Room No.84,North Block, Manipur Secretariat, Imphal, PIN No. 795 001, Manipur. Phone No. 0385-2444027; Fax No. : 0385-2444027 Website : www.manireda.com , E-mail : manireda99@yahoo.com
4.	Last date of uploading of bid document in the e-tender	Date : Up to 12.00 noon of 18th February, 2014. e-tendering site : https://manipur.tenders.gov.in
5.	Last date & time of submission of Hard copy of bids	Date : Two working days since last date of Uploading From 12.00 noon of 18th February upto 12.00 noon of 20th February,2014 Time : Upto 12:00 noon,.(submission of documents after 12.00 noon will not be accepted at any circumstances).
6.	Date & time of opening of Technical Bid	Date : 20th February,2014. Time : at 2.00 P.M. Venue : Office of the Director, MANIREDA, Room No.85, Manipur Secretariat North Block, Imphal.
7.	Date & time of opening of Financial Bid	Financial Bids will be opened for only Technically qualified bidders. Date : Will inform accordingly. Time : - Venue : Office of the Director, MANIREDA, Room No.85, Manipur Secretariat North Block, Imphal.
8.	Cost of bid document (Non-refundable)	Rs 1,500/- in the form of D.D. favouring Director MANIREDA payable at Imphal.
9.	Earnest Money (Refundable)	Rs. 8,50,000/-(Eight lakh fifty thousand) in the form of D. D. /B.G favoring Director MANIREDA, payable at Imphal.
10.	Time of completion	Within six (6) months from the date of work order.
11.	Validity of offer	The offer shall remain valid up to 365 days from the due date of submission of offer.
12.	Validity of earnest money	The earnest money shall be submitted by the bidder in the form of demand draft or bank guarantee from any Nationalized/Scheduled bank. This bank guarantee shall remain valid for 12 months from the last date of submission of bids.

3. Detailed Notice Inviting Bid (DNIB)

Manipur Renewable Energy Development Agency (MANIREDA)

Science & Technology Complex, SAI Road, Takyelpat, Imphal-795001
Ph. : 0385-2444027,2058535, Fax : 0385-2444027, e-mail : manireda99@yahoo.com
Website : www.manireda.com

NIB No. : MANIREDA/SPP/SC/2014/1

Date :29/01/2014

Sub : Design, Manufacture, Supply, Installation & Commissioning, including 5 years Maintenance & Performance Warrantee Contract (MPWC) of 31 Nos., of 5kW SPV Power Plants in 31 Courts of Manipur under Jawaharlal Nehru National Solar Mission(JNNSM) scheme of MNRE,GOI.

Dear Sir/Madam,

Manipur Renewable Energy Development Agency (MANIREDA), Imphal has the pleasure in inviting offers from eligible Indian manufacturers for the above work with your best binding price offer as per specifications and terms & conditions mentioned in the bid document. Salient features of the bid document are given below:

1. Bid Document

1.1 This bid document comprises of total 21 chapters. In addition, any other documents/ instructions/amendments/revisions issued by MANIREDA to the bidder till the due date of opening of the bids shall also be deemed to be integral part of the bid document. Failure to furnish all the information as per the bid document in every respect will be at the bidder's risk.

2. Cost of Bid Document

2.1 Bidders can download the bid document from MANIREDA website (www.manireda.com) or www.manipur.gov.in/https://manipurtenders.gov.in) and submit the cost of the bid document amounting Rs 1500/-, as applicable along with Technical Bid.

2.2 Bid applications without the cost of bid document will be rejected.

3. Earnest Money

3.1 The bidder should submit in Technical Bid the earnest money in the form of bank guarantee of requisite value as mentioned in chapter 2 (Bid Details). The format for the bank guarantee is given in chapter 11 (Proforma - 6). The bank guarantee shall be made in favour of "Director, MANIREDA" payable at Imphal from any Indian Nationalized bank/Scheduled bank.

3.2 This bank guarantee shall remain valid for 12 months from the last date of submission of bids.

3.3 The bidder may also deposit Earnest Money by Demand Draft from a Nationalised Bank/scheduled bank.

3.4 Bidders failing to submit earnest money will be rejected.

3.5 The request for adjustment of earlier dues in place of earnest money will not be entertained.

3.6 The earnest money shall be returned to all unsuccessful bidders in technical evaluation, within two weeks.

3.7 The earnest money shall be forfeited if –

a. Any bidder withdraws his bid or resides from his offer during the validity period.

b. The successful bidder fails to furnish his acceptance of the Order within fifteen days of placement of Work Order by MANIREDA.

c. The bidder fails to successfully complete the work within the stipulated time frame. Delay in completion due to extreme and unavoidable situations will have to get approved by Director, MANIREDA. This approval will also have a cut-off date by which the entire work will have to be completed.

3.8 The earnest money shall be refunded to the successful bidder after completion of the project in all respect.

4. Performance Guarantee

4.1 Performance warranty Bond shall be deposited by the supplier @5% of the Contract price excluding Installation & Commissioning and MPWC in the form of Bank Guarantee for 5(five) years period from the date of completion & commissioning of the project. If the solar power plant failed to perform as per laid down system specifications or any deviations/compromise has been observed in the system specifications etc the performance Warrantee deposit of the firm shall be forfeited.

5. Submission of Bids:

Bidders have to upload the document mentioned in Para 6.1 in the e-tender website. Bidders shall also have to submit hard copies of the uploaded documents as well as stated at Para 6.4 & 6.5:

- 5.1 Bidders are advised to submit their bids strictly based on the specifications, terms and conditions contained in the bid document and subsequent revisions/amendments, if any.
- 5.2 The bid shall be prepared and submitted by typing or printing in English with indelible black ink on white paper in consecutively numbered pages duly signed by the authorized signatory with company seal affixed on each page. Any part of the bid, which is not specifically signed by the authorized signatory and not affixed with company seal, shall not be considered for the purpose of evaluation.
- 5.3 Original copy of bid document, amendments/revisions to bid document, including minutes of meeting(s), issued by MANIREDA, if any, shall be signed and submitted along with the bid.
- 5.4 All the Proformas must be on the bidder's official letterhead. Any change in wording of the Proforma will lead to rejection of the bid application.
- 5.5 The offer shall contain no erasures or overwriting except as necessary to correct errors made by bidder. Such corrections, if any, shall be initialed by the person signing the offer.
- 5.6 Hard copy of Bid Document should be submitted in Hard Bond or Spiral Binding .
- 5.7 The Bid Document should have proper paging and flagging of Annexures/details .
- 5.8 Any Overwriting /illegible/erasing, etc. in the documents submitted by the firms shall not be accepted and will not be considered in the evaluation.

6. Mode of Submission of Bids: Bidders have to both upload document as well as submit hard copy as stated below:

6.1 The bidder shall submit/upload the scanned copies of the following documents with Digital Signature certificate in the E-tender:

- (i) Scanned copy of Tender Fee and scanned copy of Earnest Money Deposit (EMD).
- (ii) Forwarding Letter- Proforma -1
- (iii) Authorising letter for attending Bid Opening Meeting-Proforma-2
- (iv) Information about the Bidding Firm- Proforma-3
- (v) Details of Orders Received and Executed in Past 3 years-Proforma-4
- (vi) Document for being valid Channel Partner of MNRE for Off-Grid and De-Centralised Solar applications under JNNSM(SPV) with credit rating
- (vii) Certificate of manufacturing SPV Cell/Module or Battery or PV system Electronics/Inverter conforming relevant national/international standards
- (viii) Test Reports of components like PV module, Inverter, Battery from approved/competent testing centres.
- (ix) A statement of Cumulative experience of bidders not less than tender value and equivalent capacity of 155KW whose work order issued in the name of the bidder.
- (x) A summarized sheet of turnover certified by registered Chartered Accountant.
- (xi) Letter of authorized dealer/service provider registered as per MVAT Act in Manipur
- (xii) ISO 9001 certificate
- (xiii) ISO 14001 certificate.

6.2. The bidder shall download the template of Price Bid/Schedule of Works /Bill of Quantity(BOQ) as mentioned in the Proforma-10 which is uploaded in the Tender in the aforesaid site(<https://manipur-tenders.gov.in>). After downloading the BOQ, the bidder shall fill their rate & quantity of the items as per BOQ, digitally signed and upload the filled BOQ in the same site.

6.3. The bidder need not submit BOQ/Price Bid in hard copy as done in previous tenders.

6.4. The bidder also must submit Hard copy of documents stated above at Para 6.1(i) to 6.1(xii) with all supporting document like copies of work orders in support of cumulative experience clearly indicating Amount and capacity of work.

6.5 In addition, the bidder must submit hard copy of other remaining Proformas and Annexures as listed in the Check list with supporting documents.

6.6 The hard copy of Technical Bid should be submitted in a sealed envelope superscribed "NIB No.: MANIREDA/SPP/SC/2014/1 (Technical Bid)", to the office of MANIREDA, Secretariat North Block, Room No.85 addressed to Director, MANIREDA. This envelope should contain the following :

- (i) Cost of bid document (for the bidders who have downloaded the bid document from web site).
- (ii) Original earnest money by demand Draft or in the form of bank guarantee of requisite value (in Proforma –6).

6.6 Technical Bid should not contain price of any item. Such cases, even if found anywhere, shall not be given any cognizance.

6.7 Only one copy of Technical Bid (hard copy) should be submitted.

6.8 The hard copy with earnest money and cost of tender document has to be submitted during the period from 12.00 noon of 18/2/14 upto 12.00 noon of 12/2/14 (two working days) failing which no late comers would be entertained.

7.0 Scope of Work

7.1 The scope of work shall be as indicated in the Bid Details.

7.2 MANIREDA reserves absolute rights to distribute the total number of SPPs required to be supplied under the NIB amongst any number of bidders, in the way it deems fit.

7.3. MANIREDA reserves the right to award part of the total number of SPPs required at the rate to any of the bidders, in the way it deems fit.

7.4 MANIREDA reserves the right to amend the scope of work, accept or reject any or all the offers/bids, in part or in full or cancel/withdraw the invitation for bids without assigning any reasons whatsoever and in such case, the bidder/intending bidder shall have no claim arising out of such action.

7.5 The Bidder shall carefully check the specifications and shall satisfy himself regarding the technical requirement and completeness of the equipment/system.

7.6 Bidder should be capable and agreed to install the SPPs at any of 31 identified Courts in the state. MANIREDA reserves the right to award work/part to the work, to bidders at any Courts at its discretion.

7.7 The bidders should beforehand thoroughly familiarized with the incidental expenditures/charges on transportation, installation and maintenance expenses etc. They should also access the local conditions including prevailing law and order problems before submitting their offer. Any claim on change/ increase in the rate/price/cost of the work due to any reason will not be entertained at any circumstances.

7.9 It is not necessary to select the lowest quoted rate. MANIREDA reserves the right to decide the reasonable price/rate for successful implementation of the project.

8.0 Price

8.1 The Bidder shall quote price as per Proforma - 10. Price quoted shall be firm & binding and shall not be subject to any variation whatsoever, on any account except for statutory variation on taxes & duties during contractual completion period.

8.2 The price should be inclusive of all taxes, duties, levies, etc. as on date.

9.0 Terms of Payment

9.1 Subject to any deductions, which MANIREDA may be authorized to make under the terms of the order, the contract price shall be payable as per general clauses of contract enclosed.

10.0 Authority of Person Signing the Documents

10.1 Authorization letter as per Proforma – 2 with the seal of the company for the person signing the bid document or attending the bid opening meeting should be furnished.

10.2 A person signing the bid document or any document forming part of the bid document shall be deemed to warrant that he has authority to bind such offer/ document and if on enquiry it appears that the person signing had no authority to do so, MANIREDA may, without prejudice to other civil and criminal remedies, cancel the bid/contract and hold the signatory liable for all costs and damages.

11.0 No Claim or Compensation for Submission of Tender.

11.1 The bidder whose bid is not accepted shall not be entitled to claim any costs, charges, expenses and incidental incurred by him through or in connection with his submission of bid, even though MANIREDA may decide to withdraw the notice inviting bid.

12.0 Eligibility and Qualification Criteria

12.1 The bidder should be :

A Registered Manufacturing Company/Firm/Corporation in India of SPV Cells / Modules Or Battery Or PV System Electronic (Conforming to relevant National / International Standards) having at least one or more Solar Photovoltaic Power Plant (s) aggregating to a total of 155 KWp capacity should have been installed / commissioned)

12.2 The bidder should be a MNRE accredited off-Grid Channel Partner having credit rating(from MNRE Accredited Rating Agency).

12.3 Bidder should have Test Certificate for the components of tendered 5 kWp Solar Power Plant like PCU/Inverter, PV module, battery etc from an approved/competent testing centres as per requirements under the JNNSM scheme of the MNRE, GOI.

12.4 Cumulative Experience of the Bidder in executing contracts of Solar Power plants(Installed & Commissioned)should be equivalent of the tender value(155kW)(Copies of work orders must be enclosed to support the cumulative experience). Bidder's experience should be work order awarded in the name of the bidder.

12.5 The Bidder should have valid CST /State VAT/ TIN registration certificate. A copy of which should be enclosed.

12.6 Overall Average Annual Turnover of the Company/Firm/ Corporation in the last two financial years should be at least 2.50 crore. This must be the individual Company's t u r n o v e r and not that of any group of Companies .(A summarized sheet of turnover certified by registered CA should be compulsorily enclosed)

12.7 The Bidder should have registered office/authorized dealer/service network in Manipur as per MVAT Act 2005 and for smooth execution of MPWC , in place before award of contract.

12.8 The bidder should have ISO 9001 certification

12.9 The bidder should have ISO 14001 certification.

13.0 Validity of Offer

13.1 Unless otherwise specified, the bidder shall keep his tender valid initially for a period of 365 days from the due date of submission of the offer.

14.0 Other Terms & Conditions

14.1 Insertion, post-script, addition and alteration in Hard Copy shall not be recognized unless

- confirmed by bidder's signature and stamp.
- 14.2 Incomplete tender or tenders not submitted as per requirement as indicated in the NIB are likely to be rejected.
 - 14.3 Bidders shall submit their offer strictly as per terms and conditions of the tender document without any deviation.
 - 14.4 If at any time any of the documents/information submitted by the bidder is found to be incorrect, false or untruthful, the resultant order may be summarily rejected/cancelled at the risk of the bidder.
 - 14.5 Failure to furnish all information and documentary evidence as stipulated in the bid document or submission of an offer that is not substantially responsive to the bid document in all respects shall be summarily rejected.
 - 14.6 All bids(hard copy) will be received in duly sealed cover within the due date and time. Bids received after the due date and time is liable for outright rejection.
 - 14.7 MANIREDA reserves the right to reject part or whole of the bid/order without assigning any reason thereof postpone the date of receipt and opening of the bids or cancel the bid without bearing any liability, whatsoever, consequent upon such decision.
 - 14.8 Attestation of various documents enclosed along with the offer must be done by a Gazetted Officer or Notary Public.
 - 14.9 The bidder must fulfill both uploading documents and submission of hard copy in the manner mentioned above.

4. General Terms & Conditions

1.0 Scope of Work

- 1.1 The Scope of work for 5kW SPV Power Plant includes manufacturing, shop testing, packing & forwarding, transportation, transit insurance, supply, installation, testing & commissioning including 5 years Maintenance Performance Warrantee Contract (MPWC) of SPPs complete in all respects along with one set of operational instruction cum maintenance manual (in English) for each set and delivery on FOR designated godown of MANIREDA and installation & commissioning at 31 subordinate Courts of Manipur as per the direction of MANIREDA. The list of destinations/sites are enclosed as Annexure.

2.0 Opening and Evaluation of Bids

- 2.1 The Technical Bids and Financial Bids will be opened on the date and time mentioned in the tender website in the office of the **Director, MANIREDA, Room No. 85, North Block, Manipur Secretariat, Imphal**, in presence of bidders or their authorized representatives who choose to attend the meeting. The representative should produce authorization letter to attend the bid opening meeting in the Proforma - 2.
- 2.2 MANIREDA, if required, may at its discretion obtain clarifications on offers by requesting clarifications from any or all the bidders at any time prior to Financial Bid opening. Such request for clarification and the response shall be in writing.
- 2.3 MANIREDA shall examine whether the bid is complete in all respects and conform to the stipulated requirement of the technical specifications and tests reports. The bid having material deviation shall be rejected as being non-responsive.
- 2.4 The Financial Bid of only those bidders, whose Technical Bid are found qualified after evaluation, will be opened and evaluated. In case of deviation in the date and time of opening of the Financial Bid from what is given in the Bid Detail, the date & time for opening of the Financial Bid will be uploaded on MANIREDA website. Bidders are requested to visit the website (www.manireda.com) regularly and keep themselves informed.
- 2.5 The prices shall be evaluated for SPV Power Plant on the Total Price(P) at FOR Imphal and further transportation, installation and commissioning at identified sites across the Manipur state (a. System cost including insurance, CST, transportation etc, b. Installation & Commissioning, VAT, Service charge etc, c. MPWC for 5 years period).
- 2.6 The bidders shall be ranked L1, L2, L3as per the Total Price (P). The Purchase/Tender Committee of MANIREDA will have the discretion to divide the quantity to be supplied among

any number of technically qualified bidders at the approved rate. The work order will be issued subject to the acceptance of the bidders to supply at approved rate.

2.7 MANIREDA, if required, may at its discretion extend the scheduled date of opening of Financial Bid.

3.0 Award of Contract/Work Order

3.1 The contract/work order shall be awarded to the bidder whose financial Bid was acceptable and who is selected by the Tender Committee of MANIREDA/Higher Tender Committee to undertake the work at the approved rate.

4.0 Quantity of Supply

4.1 The quantity required as given in the Bid Details of Notice Inviting Bid is tentative and is subject to increase or decrease depending upon the actual requirement at the time of placing order and resources available.

5.0 Effective Date of Contract

5.1 The effective date of commencement of execution of the order by the selected contractor shall be the date of issue of the Purchase/Work Order whichever is earlier.

6.0 Contract Price

6.1 The total contract price & rates of SPPs and 5 years MPWC. in full and complete set including SPV module, control electronics & inverter, battery, mechanical components, etc. should be quoted in Proforma -10. The price shall be for the total scope as defined in this document.

6.2 The contract price includes supply of items in full & good condition at Imphal and all the incidental charges towards packing & forwarding, inspection, installation at sites, door delivery charges, loading charges at sites and transit insurance upto installation sites. Contract Price is also inclusive of excise duty, central sales tax, Manipur VAT on the finished items, turnover tax (TOT)/octroi, professional tax, service charge, income tax, entry tax, etc. as applicable for the supplies.

6.3 During the period of the contract, MANIREDA may order addition/deletion in quantities which the bidder shall comply. The adjustment in Contract Price shall be made at the same unit rate as per Price Schedule (Proforma – 10).

6.4 The contract price must indicate labour charge for which Labour Cess@1% may be deducted at source. Likewise, income taxable item must be indicated separately. Installation and commissioning charge must be shown separately for which service charge and VAT may be levied.

6.5 If the installation & commissioning and MPWC is to be entrusted to local dealer, VAT will be applicable.

7.0 Terms of Payment

7.1 Subject to any deductions which MANIREDA may be authorized to make under the terms of the order, the Contract Price shall be payable as given below :

(a) Mobilisation advance upto 20% of the ordered value excluding the cost of installation & commissioning and MPWC charges shall be released against submission of bank guarantee of equivalent amount from nationalized bank after verification and subject to availability of fund from MNRE,GOI or other sources.

(b) 50% of the Contract price(excluding installation and commissioning & MPWC charges)shall be paid against duly verified successful supply of the systems in full and working condition after submission of the following documents subject to availability of fund from MNRE,GOI or other sources:

1. Certificate of delivery of the number of SPPs(Complete set) received by the consignee as specified in Proforma – 8.
2. Commercial invoice of the supply made in triplicate.
3. Copy of delivery challan/transportation challan/lorry receipt.

(c) Remaining 30% of the Contract price(excluding installation and commissioning & MPWC charges) and 100% of the installation and commissioning charges shall be paid against duly

verified completion report with successful installation and commissioning of the systems after submission of the following documents subject to availability of fund from MNRE,GOI or other sources:

1. Location-wise detail of the module, battery & PCU/Inverter utilization report of SPPs installed under the SPV Program as specified in Proforma-9
2. Verification of Certificate of Commissioning from the beneficiary countersigned by officer concerned.
3. Photographs along with details of module, battery, inverter/PCU etc. installed in soft copy(CD/DVD).

(d) Payment for MPWC shall be released on 5 equal yearly instalments on satisfactory performance.

All payments shall be released by MANIREDA through account Payee Cheque issued in favour of the Supplier/Contractor or e-payment through RTGS/account transfer as the case may be for which the following mandatory information is to be furnished with Technical bid:

Name of the firm to whom payment is to be made	Name of bank	Bank Branch address	Account Number	Type of account	MICR Code	IFSC code	PAN No.

8.0 Income Tax :

8.1 Without prejudice to the obligations of the Supplier/Contractor under law, any Income Tax, which MANIREDA may be required to deduct by law/statute, shall be deducted at source and shall be paid to the Income Tax authorities on account of the Supplier. MANIREDA shall provide the Supplier a certificate for such deduction of tax.

9.0 Statutory Variations in Taxes and Duties :

9.1 The adjustment in the Contract Price towards imposition of new taxes or abrogation of existing taxes due to statutory variation shall be applicable only if the new tax is enacted or existing tax is abrogated within contractual delivery/execution period. For any upward variation due to enactment of new tax or abrogation of existing tax after contractual delivery/execution period, adjustment in the Contract Price shall not apply, although for any downward variation, MANIREDA shall make necessary adjustment in the rate of the items.

9.2 The Supplier shall bear and pay all liabilities in respect of statutory variations in taxes and duties and imposition of new taxes and duties that may be imposed after the contractual delivery/execution dates, as originally stipulated, in case the delivery dates are extended due to reasons attributable to Supplier.

10.0 Agreement :

10.1 The Supplier/Contractor(s) have to enter into an agreement within two weeks, in the office of the Director, MANIREDA in prescribed format before commencement of supply/services.

11.0 Inspection of the Factory and Tests :

11.1 MANIREDA reserves the right to inspect the manufacturer's works/factory to ascertain the capability/availability of necessary equipment & infrastructure required for manufacture of the item offered before opening of the Financial Bid of the bidders.

11.2 MANIREDA shall have access and right to inspect the work or any part thereof at any stage.

11.3 MANIREDA shall have the right to inspect and test the goods to confirm their conformity to the technical specifications after delivery of goods to consignee.

11.4 Successful bidder shall inform MANIREDA at least 25 days in advance of schedule dispatch.

12.0 Dispatch Instructions:

12.1 All items/equipments may be subjected to pre-dispatch inspection by Director, MANIREDA or its authorized representative(s) as per relative standards/provisions approved by MANIREDA before dispatch of items. Cost of inspection by officials (not more than two) would be borne by the successful bidder.

13.0 Transit Insurance:

13.1 Transit Insurance shall be arranged by the Supplier for his total supplies. In case of any damage/loss/pilferage/non-delivery during transit, the Supplier shall lodge the claim and settle the claim with the insurance agency. The Supplier shall also arrange replacement of the damaged, lost/pilfered items expeditiously pending settlement of commercial implications with insurance agency, if any, so as not to hamper the working of the system. The resultant loss if any due to failure of Supplier to comply with the above shall be to the account of the Supplier.

14.0 After Sales Service and Availability of Spare Parts :

14.1 The Supplier shall depute authorized Service Engineer within 3 days from the date of the intimation of fault, and establish sufficient inventory of spares, technicians in the State in consultation with MANIREDA to provide satisfactory and uninterrupted services during the guarantee/ MPWC period for which a servicing centre must be established at Imphal. Address, contact number etc. of the Servicing centre must be submitted before commencement of the work.

15.0 Completion Schedule:

15.1 The delivery of goods at FOR destination in full as per the terms and conditions of the contract/order shall be completed within **six (6) months** from the date of issue of the Work Order whichever is earlier.

16.0 Guarantee/Warranty Period:

16.1 The manufacturer must provide guarantee which include servicing & replacement guarantee for parts and components (such as battery, electronics, inverter etc) of Solar Power Plant for 5 (five) years. For PV modules, it must be warranted for its output peak watt capacity, which should not be less than 90% at the end of 10 years and 80% at the end of 25 years from the date of commissioning the SPPs at site & demonstration of performance to the consignee/MANIREDA.

16.2 The guarantee card to be supplied with the system must contain the details of the system supplied as given in the Proforma - 7. The manufacturers can also provide additional information about the system and condition of guarantee as necessary.

16.3 Supplier/contractor shall without prejudice to any other clauses of the order repair/replace the defective parts and restore the system to satisfactory working/performance within 7(seven) days of intimation of fault without any additional cost to MANIREDA within the period of guarantee/ MPWC.

17.0 Assignment/Sub Letting/Pre Bidding Tie Up:

17.1 The Supplier/contractor shall not assign or sub let, manufacture, shop testing, packing & forwarding, transportation, transit insurance and supply, in whole or part, its obligations to any third party to perform under the order/contract.

17.2 In the event the Supplier contravenes this condition, MANIREDA reserves the right to reject the equipment/work sub-contracted and procure the same from elsewhere at Supplier's risk and cost. The Supplier shall be solely liable for any loss or damage which MANIREDA may sustain in consequence or arising out of such replacing of the contract work.

17.3 In case, the installation & commissioning and MPWC is planned to be carried out in collaboration with other party, the bidder has to sign MoU with the party on a Non-judicial stamp paper of value not less than Rs. 100/- and submit a copy of the MoU along with the bid. The MoU shall clearly indicate division of scope of work between the prime bidder and his sub-vendor. However, the total responsibility of work will remain with the prime bidder.

18.0 Liquidated Damages for Delay in Completion:

18.1 The completion period for the assignment must carefully be worked out and all resource & work planning is to be done accordingly with flexibility for adjustments.

18.2 If the Supplier fails in the due performance of the contract to deliver and commission any part of the equipment or complete the work within the scheduled date for any reason other than due to Force Majeure conditions or any extension thereof granted to him by MANIREDA, he shall be liable to pay to MANIREDA as pre-agreed liquidated damages but not by way of

penalty on account of delayed successful commissioning, a sum equal to 0.1% of total contract value per 3 months of such delay, or part thereof, subject to maximum of 2% of the Total Contract Value.

- 18.3 The liquidated damages for delayed completion shall be recovered from the Supplier's Bill/Bank Guarantee deposited as earnest money.
- 18.4 Deductions/payment of liquidated damages shall in no way relieve the Supplier from his contractual responsibility to complete the works.

19.0 Cancellation of Order :

- 19.1 MANIREDA will be at liberty to terminate in part or full the awarded contract without prejudicing its rights and affecting the obligations of the Contractor by giving seven (7) days notice in writing in the following events:
- (a) If the Supplier is found defaulter for delayed supply or failure to deliver satisfactory performance or supply of substandard materials pursuant to NIB conditions.
 - (b) If the Supplier/Vendor fails to comply with the provision(s) of the contract including the responsibilities to fulfill the 5 years maintenance and performance warranty contract as per the provisions mentioned in this bid document.
 - (c) If the Supplier/Vendor is involved in any action of moral turpitude.

20.0 Arbitration :

- 20.1 All disputes or differences, whatsoever, arising between the parties out of or in relation to the construction, meaning and operation or effect of this contract or breach thereof shall be settled amicably.
- 20.2 If, however, the parties are not able to resolve them amicably, the same shall be settled by arbitration in accordance with the Rules of Arbitration of the Indian Council of Arbitration and Conciliation & Arbitration Act 1996 and the award in pursuance thereof shall be binding on the parties.
- 20.3 The venue of arbitration proceeding shall be within Jurisdiction of Court of Law at Imphal only.
- 20.4 Work under this contract shall be continued by the Supplier during the arbitration proceedings, unless otherwise directed in writing by MANIREDA or unless matter is such that the work cannot possibly be continued until the decision of the Arbitrator is obtained.

21.0 Force Majeure :

- 21.1 Should at any time during the continuance of the contract the performance in whole or in part of any obligations by either party under this contract be held up by reasons of any war, hostility, acts of foreign enemy, civil commotion, sabotage, fires, floods, earthquakes, explosions, epidemics, cyclones, quarantine restrictions, Governmental regulations, law & order and other proclamation etc. (hereinafter referred to as "Events") then, provided notice of the happening of any such eventuality is given by either party to the other within 15 days from the date of occurrence thereof neither party shall, by reasons of such eventuality, be entitled to terminate this contract, nor shall either party have any claim for damages against the other in respect of such non-performance or delay in performance, and the work under this contract shall be resumed as soon as practicable after such eventuality has come to an end or ceased to exist.
- 21.2 Should one or both the parties be prevented from fulfilling their contractual obligations by a state of force majeure, lasting continuously for a period of at least four (4) weeks, the two parties should consult each other regarding the further implementation of the contract.
- 21.3 The above-mentioned force majeure conditions/clause shall also apply in the works of sub-contractors/suppliers of the contractor.
- 21.4 However, the Supplier shall not be liable for liquidated damages or termination/cancellation of order/contract if and to the extent that its delay in performance or other failure to perform its obligations under the contract is the result of an event of force majeure.

5. Technical Specification

1. SPV MODULES:

- 1.1 The SPV Module must be tested, approved & certified by any one of the IEC authorized test centers – NABL/BIS Accredited Testing/Calibration Laboratories or by any International IEC authorized test centre. The PV modules must conform to the latest edition of any of the following IEC/equivalent BIS Standards for PV module design qualification and type approval (as per JNNSM):

Type of Module:- Crystalline Silicon Terrestrial PV Modules - IEC 61215/IS14286. The manufacturer should certify that the submitted module is also manufactured using same design and process and modules being supplied are as per above.

In addition, the modules must conform to IEC 61730 Part1-requirements for construction & Part 2- requirements for testing, for safety qualification. IV curve both soft copy & hard copy must be provided(Image/PDF).

- 1.2 Stabilized output of the Solar PV Array for the Power plant should not be less than 5 kWp under STC after one year of operation.
- 1.3 SPV modules to be supplied should have minimum declared output of 24 V 250 Wp. Number of modules to be supplied shall be 20(twenty) to be connected in series and parallel connections in order to have total output of 5kWp at 96V(24V for each module in series).
- 1.4 Module conversion efficiency should be equal to or greater than 14% under STC.
- 1.5 Electrical characteristics of each module should be as per IEC specifications.

1.6 Identification And Traceability

- 1.7 Each PV module must use a RF identification tag(RFID), which must contain the following information:
- i. Name of the Manufacturer of PV module
 - ii. Name of the Manufacturer of Solar cells
 - iii. Month and year of the manufacture(separately for solar cells and module)
 - iv. Country of origin (separately for solar cells and module)
 - v. I-V curve for the module
 - vi. Peak Wattage, I_m , V_m and FF for the module
 - vii. Unique Serial No. and Model No. of the module
 - viii. Date and year of obtaining IEC PV module qualification certificate
 - ix. Name of the test lab issuing IEC certificate
 - x. Other relevant information on traceability of solar cells and module as per ISO 9000series.

Until March, 2013, the RFID can be inside or outside the module laminate, but must be able to withstand harsh environmental conditions. However, from 1st April,2013 onwards RFID should be mandatorily placed inside the module laminate.

Monogram of MANIREDA along with following details in English script shall be screen printed in indelible ink or paint on the back side of each PV module :

- Solar Photo Voltaic Program 2013-14(5kWp SPP)
- Not for sale or transfer
- Statutory action would be taken by MANIREDA, if it is found sold or transferred under different Sections of IPC

1.8 Warranty

- (a) PV modules used in solar power plants/systems must be warranted for their output peak watt capacity, which should not be less than 90% at the end of 10 years and 80% at the end of 25 years.
- (b) The mechanical structures, electrical works including power conditioners/inverters/charge controllers/distribution boards/digital meters/switchgear/storage batteries, etc. and overall workmanship of the SPV power plants/systems must be warranted against any manufacturing/design/installation defects for a minimum period of 5 years.

2. MODULE MOUNTING STRUCTURE:

- 2.1 The array structure shall be made of hot dip galvanized MS angles of size not less than 50 mm x 50 mm x 6mm size. The minimum thickness of galvanization should be at least 85 microns. All nuts & bolts shall be made of very good quality stainless steel. The minimum clearance of the lowest part of the module structure and the developed ground level shall be 600 mm.
- 2.2 Leg assembly PV Module mounting structure made of different diameter galvanized tubes may be accepted. The work should be completed with supply, fitting fixing of clamps, saddles, nut & bolts etc. While quoting rate, the bidder may mention the design & type of MMS. The minimum thickness of galvanization should be at least 85 microns. All nuts & bolts shall be made of very good quality stainless steel.
- 2.3 The structure shall be designed to allow easy replacement of any module. Each structure shall have a provision to adjust its angle of inclination to the horizontal as per the site conditions.
- 2.4 The array structure shall be so designed that it will occupy minimum space without sacrificing the output from SPV panels at the same time it will withstand severe cyclonic storm with wind speed upto maximum 200 kmph.
- 2.5 The supplier/manufacturer shall specify installation details of the PV modules and the support structures with appropriate diagrams and drawings. Such details shall include, but not limited to, the following:
 - a) Determination of true South at the site;
 - b) Array tilt angle to the horizontal, with permitted tolerance;
 - c) Details with drawings for fixing the modules/junction/terminal boxes;
 - e) Interconnection details inside the junction/terminal boxes;
 - f) Structure installation details and drawings;
 - g) Electrical grounding (earthing);
 - h) Inter-panel/Inter-row distances with allowed tolerances; and
 - i) Safety precautions to be taken.
- 2.6 The drawings along with detailed design shall be submitted in triplicate to MANIREDA for approval before starting the execution work. The work will be carried out as per designs approved by MANIREDA.

3. RCC ARRAY FOUNDATION BASE:

- 3.1 The legs of the structures made with GI angles will be fixed and grouted in the RCC foundation columns made with 1:2:4 cement concrete. While making foundations designs due consideration will be given to weight of module assembly, maximum wind speed of 200 km per hour.

4. POWER CONDITIONING UNIT/INVERTERS:

- 4.1 The Power Conditioning Unit/Inverters must conform to the latest edition of IEC/ equivalent BIS Standards as specified below:

Efficiency Measurements	-	IEC 61683	Equivalent BIS
Environmental Testing	-	IEC 60068 2 (1,2,14,30)/	Equivalent BIS Std

4.2 The PCUs required shall be of 5 KVA, should convert DC power produced by SPV modules into AC power and adjust the voltage & frequency levels to suit the local grid conditions. The 5 KVA PCU with grid interactive shall feed power to the A.C. load in the Courts of Manipur.

4.3 Common Technical Specification:

- Control Type : Voltage source, microprocessor assisted, output regulation
- Output voltage : single phase, 230 V ac adjustable up to 250V (+12.5 %, - 20 % V ac)
- Frequency : 50 Hz (+0.5 Hz, -0.5 Hz)
- Continuous rating:5 KVA with net metering /off Import/Export meters
- DC link voltage range: 0 to 600 V Nominal
- Power : 5KVA
- Total Harmonic Distortion: less than 3%
- Operating temperature Range: 0 to 55 deg C
- Housing cabinet:PCU to be housed in suitable switch cabinet, Within IP 20
- PCU efficiency : 90 % and above at full load,
- Power Control : MPPT

4.4 Other important Features/Protections of PCU :

- ☒☒ Mains (Grid) over-under voltage and frequency protection
 - ☒☒ Fool proof protection against Islanding.
 - ☒☒ Included authentic tracking of the solar array's maximum power operation voltage (MPPT).
 - ☒☒ Array ground fault detection.
 - ☒☒ LCD and piezoelectric keypad operator interface Menu driven
 - ☒☒ Automatic fault conditions reset for all parameters like voltage, frequency and/or black out.
 - ☒☒ MOV type surge arresters on AC and DC terminals for over voltage protection from lightning-induced surges.
 - ☒☒ PCU should be rated to operate at 0 -55 deg. Centigrade unless provision for air conditioning is included in PCU
 - ☒☒ Over load capacity (for 10 sec) should be 200% of continuous rating.
- 4.4.2 The PCU shall be Hybrid One and shall give the preference to feed the Loads from Solar Energy being produced and shall draw the additional power from mains to meet the load requirements in the case load is more than solar energy being produced.
- 4.4.3 Since the PCU is to be used in solar photo voltaic energy system, it should have high operational efficiency.
- 4.4.4 The idling current -if no load, must not exceed 2 percent of the full-load current.
- 4.4.5 In PCU there shall be a direct current isolation provided at the output by means of a suitable isolating transformer.
- 4.4.6 The PCU shall be capable of operating in parallel with the grid utility service and shall be capable of interrupting line-to-line fault currents and line-to- ground fault currents. The PCU shall be able to withstand an unbalanced output load to the extent of 30 %

4.4.7 The PCU shall have an appropriate display on the front panel to display the instantaneous AC power output and the DC voltage, current and power input. The display shall be visible from outside the PCU enclosure. Operational status of the PCU, alarms, trouble indicators and AC and DC disconnect switch positions shall also be communicated by appropriate messages or indicator lights on the front of the PCU enclosure.

4.5 Electrical safety, earthing and protection

- a. Internal Faults: In built protection for internal faults including excess temperature, commutation failure, overload and cooling fan failure (if fitted) is obligatory.
 - b. Galvanic Isolation: Galvanic Isolation is required to avoid any DC component being injected into the grid and the potential for AC components appearing at the array.
 - c. Over Voltage Protection: Over Voltage Protection against atmospheric lightning discharge to the PV array is required. Protection is to be provided against voltage fluctuations in the grid itself and internal faults in the power conditioner, operational errors and switching transients.
 - d. Earth fault supervision: An integrated earth fault device shall have to be provided to detect eventual earth fault on DC side and shall send message to the supervisory system.
 - e. Cabling practice: Cable connections must be made using PVC Cu cables, as per BIS standards. All cable connections must be made using suitable terminations for effective contact. The PVC Cu cables must be run in GL trays with covers for protection.
 - f. Fast acting semiconductor type current limiting fuses at the main bus- bar to protect from the grid short circuit contribution.
- 4.6 The PCU shall include an easily accessible emergency OFF button located at an appropriate position on the unit.
- 4.7 The PCU shall include ground lugs for equipment and PV array grounding.
- 4.8 The PCU enclosure shall be weatherproof and capable of surviving climatic changes and should keep the PCU intact under all conditions in the room where it will be housed. The INVERTER shall be located indoor and should be either wall / pad mounted. Moisture condensation and entry of rodents and insects shall be prevented in the PCU enclosure.
- 4.9 Components and circuit boards mounted inside the enclosures shall be clearly identified with appropriate permanent designations, which shall also serve to identify the items on the supplied drawings.
- 4.10 All doors, covers, panels and cable exits shall be casketed or otherwise designed to limit the entry of dust and moisture. All doors shall be equipped with locks. All openings shall be provided with grills or screens with openings no larger than 0.95 cm. (about 3x8 inch).
- 4.11 **Maximum Power Point Tracker (MPPT)**
Maximum power point tracker shall be integrated in the PCU to maximize energy drawn from the array. The MPPT should be micro processor based to minimize power losses. The details of working mechanism of MPPT shall be mentioned. The MPPT must have provision (manual setting) for constant voltage operation.
- 4.12 Disconnection of the PV generator in the event of loss of the main grid supply is to be achieved by in built protection within the power conditioner. This may be achieved

through rate of change of current, phase angle, unbalanced voltage or reactive load variants.

- 4.13 Operation outside the limits of power quality as described in the technical data sheet should cause the power conditioner to disconnect the grid.
- 4.14 Automatic reconnection after the grid failure is restored.
PCU shall have the facility to reconnect the PCU automatically to the grid following restoration of grid subsequent to grid failure condition.
- 4.15 Inverters should be of very high quality having high efficiency and should be capable of running in isolated mode. The inverter should be completely compatible with the charge controller and distribution panel.
- 4.16 The inverter shall be designed for continuous, reliable and prime power supply as specified. The inverter shall have high conversion efficiency from 25 percent load to the full rated load. The efficiency of the inverter shall be minimum 90% at full load and more than 80% at partial load (50%-75%).
- 4.17 The inverter shall have high overload capability. The overload capability of the inverter shall be a minimum of 200% at rated full load.
- 4.18 The output power factor of the inverter should be of suitable range to supply or sink reactive power.
- 4.19 The output voltage of the inverter shall be sinusoidal with harmonic distortion less than 3% THD.
- 4.20 The Inverter shall have internal protection arrangement against any sustained fault in feeder line and lightning in feeder circuit.
- 4.21 The dimension, weight, foundation details etc. of the inverter shall be clearly indicated in the detailed technical specification and the same should be submitted along with the bid.
- 4.22 Specifically the inverter should be Single phase static solid state type power conditioning unit. Both AC & DC lines shall have suitable fuses and contactors to allow safe start up and shut down of the system. Fuses used in the DC circuit should be DC rated.

4.25 Technical features:

Input Voltage	24 V, DC (Nominal)
Output Voltage: Wave form	230 V, Single Φ , 2-wire, Sine Wave. The output voltage should be adjustable up to 250V. Sine wave with less than 3% THD
Maximum current ripple	4% PP
Reactive Power	0.95 inductive to 0.95 capacitive
Regulation	Maximum 5% against input Voltage and load variation
Frequency	50 Hz \pm 0.5 Hz
Output	5 KVA
Dielectric strength Instrumentation	1.1 kV between input/output with ground with EMI protections & 1.5 kV between input and output. Input Voltage & Current, Output Voltage & Current, Frequency.
Status Indication	Input, Output, Inverter (On/Trip/Fault/Off),
Fault indication	Visual indication with blinking super glowing LED audio
Protections	Single Phase Short Circuit Protection, Battery Low Voltage, AC Over Current, Lightning Surge in Output. Sustained Over Load

- 4.26 Inverter shall have arrangement for adjusting DC input current and should trip against sustainable fault in the Distribution system and shall not start till the fault is removed.
- 4.27 Inverter output have several settings from 3 KVA to 5 KVA so that it can be set at a particular KVA beyond which the inverter shall trip depending on the system load for the purpose of controlling overdraw from the predetermined load. Inverter should not start under any fault condition and should trip under severe unbalanced condition.

5. CHARGE CONTROLLING UNIT

- 5.2 Charge Controller shall be Pulse Width Modulation type suitable for charging a 96V, 300 AH battery bank from 5 kWp Solar PV Array.
- 5.3 The charging sequence from SPV Array shall be perfectly matched with battery bank characteristics.
- 5.4 The charge controller shall protect respective battery banks connected with each charge controller during charging & discharging of batteries.

5.5 Specification:

Input	5 kWp, 96V nominal DC Solar PV Array
Output voltage	Suitable for charging 96V nominal battery bank
Protections	Short circuit, Deep discharge, Input surge voltage, Over Current, Battery Reverse Polarity, Solar Array Reverse Polarity
Indications	Input 'ON', Control 'ON', Charger 'ON', Charger Over Load, Battery on Trickle Charging, Battery Disconnected/fault.
MIMIC Diagram	To indicate power flow and operation of the charge controller/battery charger; shall have provision for visual indications of existing power input/output through MIMIC diagram
Instrumentation	Charging & Discharging Current, Charging & Discharging Voltage, Charging & Discharging AH.
Dielectric Strength	1.1 kV between Input/Output and ground with EMI protections removed
Ambient temperature	50°C
Operating Humidity	100% maximum.
Assembly/mounting	As per normal industrial practice
Finish	Epoxy Powder Coating

6. AC DISTRIBUTION BOARD (ACDB)

This shall consist of box of suitable powder coated metal casting. One feeder per phase shall be provided in ACDB with MCB of suitable capacity installed at each feeder in the ACDB. **One Electronic Energy Meter, ISI make, Single/Three Phase, of good quality shall be installed in ACDB suitably placed to measure the consumption of power from SPV Power Plant.** Proper rating MCB shall be installed at every feeder (in case of single phase output also, there shall be three feeders) to protect feeders from short circuit current as per requirement of the site. A separate dedicated feeder from conventional/grid line to PCU/Inverter as well as ACDB should also be installed. A separate change over switch of proper rating should be suitably installed in the ACDB to isolate the existing connected load from the SPV system and cater the power to the existing load from conventional/grid line, in case of emergency. ACDB should be connected between PCU and Load. Proper separation of distribution line of load for operation of other load of the Courts should be made so that there is no overload for the SPV Plant.

7. DC DISTRIBUTION BOARD (DCDB)

This shall consist of box of suitable powder coated metal casting. In this box, a separate arrangement which shall consist of MCCBs of suitable specifications & which can withstand respective flow of current, with the purpose of providing the option for isolating the battery bank & SPV arrays should be made. There shall be copper bus bars of suitable rating. Proper rating HRC fuse & MCCB/Isolator for DC application should be suitably installed in DCDB as battery bank isolator.

8 STORAGE BATTERIES/BATTERY BANK

- 8.1 The Storage Batteries/Battery Bank must conform to the latest edition of IEC/ equivalent BIS Standards as specified below:

- 8.2 The permitted maximum deep discharge (DOD) shall be specified by the supplier in the offer. Unless otherwise specified, the cycle life of the battery shall not be less than 1500 charge-discharge cycles between fully charged state and the permitted maximum DOD(80%) at a rate of C/10, end of life shall be 80% of the rated capacity.
- 8.3 Each battery shall be fitted with explosion proof safety vents.
- 8.4 All technical and other details pertaining to the storage cells shall be supplied including but not limited to the following: i) Rated voltage and Ampere-hour capacity of each storage cells and their rated discharge rate; Permitted maximum DOD; ii) Self discharge rate; iii) Cycle life of the storage cells and anticipated life of the battery banks; iv) Instructions on first time charging including specification of the battery charger; v) Details on cell connections; and vi) Safety procedures.
- 8.5 One set of battery maintenance tools consisting of Thermometer, battery connection leads, Gumboots and one set of hand tools suitable for making battery connections to be supplied with the Battery Banks.
- 8.6 Suitable size and adequately strong battery rack should be supplied with each battery banks. The placement of battery should be such that maintenance of battery could be carried out easily.
- 8.7 The battery shall be of 2V cells with end cut off voltage 1.8V per cell and battery terminals shall be provided with insulated covers.
- 8.8 The system voltage of 5 kWp SPV Power Plant is 96 V, therefore the battery bank should comprise of **48 numbers of 2V 300 Ah each** (under standard test condition) of low maintenance, tubular VRLA GEL Type battery having long service life (minimum five years). The cells shall be capable of deep discharges and frequent cycling with long maintenance intervals and high columbic efficiency.
- 8.9 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.
- 8.10. The charge efficiency shall be more than 90% upto 70% state of charge.
- 8.11. Specification should consist of:
- a) Manufacturer b) Type of battery c) Nominal Voltage d) End cell voltage e) Capacity of battery
 - f) Depth of discharge g) Days of autonomy h) Efficiency of battery i) Duty cycle
 - j) Structural details of bank k) Battery guarantee

9. BATTERY PROTECTION & CONTROL PANEL

The battery protection & control panel shall be made of CRCA sheet having four incoming and four outgoing terminals. There will be four Nos. of 2 pole MCB of minimum capacity of 150 A DC at 500 V rating with 4 Nos. 150 A HRC fuse for back-up protection with fuse holder/base etc as required. One Battery Bank shall be connected with each Charge Controlling Unit through a MCB & HRC fuse as mentioned and though Battery Protection & Control Panel.

10. JUNCTION BOXES/ENCLOSURES:

- 10.1 The junction boxes shall be dust, vermin and waterproof and made of FRP. The terminals will be connected to copper bus-bar arrangement of proper sizes to be provided with EPDM rubber gasket to prevent water entry. The junction boxes will have suitable cable entry points fitted with cable glands of appropriate sizes for both incoming and outgoing cables with provision of earthing. Suitable markings shall be provided on the bus-bar for easy identification and cable ferrules will be fitted at the cable termination points for identification. Suitable arrangement shall be provided for connecting 'Reverse Blocking Diodes' in the Array junction Boxes.
- 10.2 The Junction Boxes shall have suitable arrangement for the followings:
- (a) Combine groups of modules into independent charging sub-arrays that will be wired into the controller.
 - (b) Provide arrangement for disconnection for each of the groups.
 - (c) Provide a test point for each sub-group for quick fault location & also group array isolation.

- (d) The rating of the JBS shall be suitable with adequate safety factor to inter connect the Solar PV array.
- (e) Suitable capacity MOVs provided within the box to protect against lightning.

11. CABLES

- 11.1 The length of cable shown is indicative & actual length may vary depending on layout, design & site condition.
- 11.2 All cables shall be PVC insulated 1100 V grade conforming to IS: 694-1990 or IS: 1554 (Part-I).
- 11.3 The wiring for module inters connection shall be with hard PVC conduit of BIS approve make. All Tees, Bends etc shall also be BIS approve make hard PVC material
- 11.4 Cables in the array yard shall be laid direct in ground at a depth of 500 mm in the excavated trenches along the approved route and covered with sand cushion. A continuous single brick protective layer of first class brick shall be placed over the entire length of the underground cable before refilling the trench with loose soil. Alternatively, 6" wide continuous layer of 1½" thick concrete cable markers may also be provided as protective cable cover. The cables shall be laid inside class-B, GI pipes of suitable size under road crossings, drains, sewerage lines, entry or exit points of the buildings or where there are chances of mechanical damage.
- 11.5 Cables inside the control room shall be laid in suitable Cable Tray.
- 11.6 All wires shall conform to IS: 694-1990 (as amended upto date) and should be of 650/1100 volt grade as per requirement. Only copper conductor wires of reputed make shall be used. Cable terminations shall be made with suitable cable lugs & sockets etc, crimped properly and passed through brass compression type cable glands at the entry & exit point of the cubicles. The panels' bottoms should be properly sealed to prevent entry of snakes inside the panel.
- 11.7 All cable/wires shall be marked with good quality letter and number ferrules of proper sizes so that the cables can be identified easily.
- 11.8 The terminal end of cables and wires are to be fitted with good quality letter and number ferrules of proper sizes so that the cables can be identified easily.

12. LIGHTNING & OVER VOLTAGE PROTECTION

- 12.1 The SPV Power plants should be provided with Lightning and over voltage protection connected to proper earth pits. The main aim of over voltage protection is to reduce the over voltage to a tolerable level before it reaches the PV or other sub-system components. The source of over voltage can be lightning or other atmospheric disturbance.
- 12.2 The Lightning Conductors shall be made of 25 mm diameter 4000 mm long G. I. Spike as per provisions of IS 2309-1969. Necessary concrete foundation for holding the lightning conductor in position to be made after giving due consideration to maximum wind speed and maintenance requirement at site in future. The lightning conductor shall be earthed through 20 mm x 3 mm thick GI flat with earth pits/earth bus made with 25 mm x 5 mm GI flats. Each Lightning Conductor shall be fitted with individual earth pit made with GI pipe, 4.5 m long 40 mm diameter including accessories, and providing masonry enclosure with cast iron cover plate having locking arrangement, watering pipe using charcoal or coke and salt as required as per provisions of IS:3043.
- 12.3 The bidder shall ensure adequate lightning protection to provide an acceptable degree of protection as per IS: 2309 for the array yard. If necessary more numbers of Lightning conductor may be provided, in such a case payment will be made on actual basis.

13. EARTHING SYSTEM

- 13.1 The earthing for array and distribution system shall be made with GI pipe, 4.5 m long 40 mm diameter including accessories, and providing masonry enclosure with cast iron cover plate having locking arrangement, watering pipe using charcoal or coke and salt as required as per provisions of IS: 3043. Necessary provision shall be made for bolted isolating joints of each earthing pit for

- periodic checking of earth resistance.
- 13.2 Each Array structure of the SPV Yard shall be grounded properly. The array structures are to be connected to earth pits through 25 mm x 5 mm GI strip.
- 13.3 The earthing for the power plant equipment shall be made with copper plate 600 mm x 600 mm x 3 mm thick including accessories, masonry enclosure with cover plate having locking arrangement and watering pipe etc using charcoal or coke and salt as per provisions of IS: 3043. Necessary provision shall be made for bolted isolating joints of each earthing pit for periodic checking of earth resistance.
- 13.4 The earth conduction shall run through GI pipe partly buried and partly on the surface of the control room building.
- 13.5 The complete earthing system shall be mechanically & electrically connected to provide independent return to earth.
- 13.6 The inverters and battery charger and all equipment inside the control room and battery room to be connected to earth through 25 mm x 5 mm tinned copper strip including supplying of material and soldering. An Earth Bus shall be provided inside the control room with 25 mm x 5 mm tinned copper strip of minimum length 25m. The strip & all earth bus should run on suitable size porcelain base fixed on wall surface.
- 13.7 In compliance to Rule 33 and 61 of Indian Electricity Rules, 1956 (as amended upto date), all non-current carrying metal parts shall be earthed with two separate and distinct earth continuity conductors to an efficient earth electrode.
- a SUB-MAIN WIRING**
Sub-main wiring will be casing capping type with 2 X 2.5 mm² PVC insulated 1.1 kV grade Cu wire drawn with appropriate size bare Copper earth wire from MCB DB to JB/SB connector Box for individual circuits. The work includes supply of all requisite materials. The casing capping shall be Hard PV made.
- b EXHAUST FAN**
The Exhaust fans shall be fitted in the battery room and the control room. The exhaust fans shall be 250 mm in diameter and suitable for AC 230 V, 50 Hz supply. The exhaust fans must be robust in construction with very low noise level. While fixing of exhaust fans, suitable cover to protect against rain splash shall have to be supplied & fixed at outside of the duct for exhaust fans.
- c DANGER PLATES**
Size of the each Danger Notice plates will be 200 mm x150 mm made of mild steel sheet and at least 2 mm thick, and vitreous enameled white on both sides, and with inscription in signal red colors on front side as required. The inscriptions shall be in Manipur(Bengali script) and English.
- d DRY CHEMICAL FIRE EXTINGUISHERS**
The dry chemical fire extinguisher shall be Upright type of capacity 10 kg having IS: 2171. 7 IS: 10658 marked. The fire extinguisher shall be suitable for fighting fire of Oils, Solvents, Gases, Paints, Varnishes, Electrical Wiring, Live Machinery Fires, All Flammable Liquid & Gas.
- e SAND BUCKETS**
The sand buckets should be wall mounted made from at least 24 SWG sheet with bracket fixing on wall conforming IS 2546.
- 14.0 Documentation**
- 14.1 An operation, instruction, maintenance manual in English should be provided with the Solar Power Plant. The following minimum details must be provided in the manual :

- (i) About Photovoltaic
- (ii) About Solar Power Plant – its components and expected performance
- (iii) About PV Module. In case of imported modules it is mandatory to provide a copy of the international product qualification certificate to the test centre
- (iv) About PCU/Inverter. The make, model number and technical characteristics of PCU/Inverter should be stated in the product data sheet and furnished to the test centers
- (v) About Battery and electronics used
- (vi) Clear instructions about Mounting of PV Module(s)
- (vii) About Electronics
- (viii) About Charging and Significance of Indicators.
- (ix) DO's and DON'Ts
- (x) Clear instructions on operation, Regular Maintenance and Trouble Shooting of SPP
- (xi) Name and address of the person or service center to be contacted in case of failure or complaint.

6. Five Years Maintenance and Performance Warrantee Contract (MPWC)

1.0 The Maintenance and Performance Warrantee Contract (MPWC)

- 1.1 After the works are awarded to the successful Bidder/Bidders, he/they enter into a Maintenance and Performance Warrantee Contract (MPWC) with MANIREDA which includes the scope of operation and maintenance of the SPV Power Plants for a period of 5(five) years. The date of MPWC period shall begin from the date of actual commissioning of the Solar Power Plant. The Maintenance and Performance Warrantee Contract shall include servicing & replacement guarantee for parts and components (such as battery, electronics, PCU/Inverter, etc) of Solar Power Plant for 5 years from the date of installation. For PV modules, the replacement guarantee is for 25 years.

The contractor should train a person preferably staff of the Court for day today operation, troubleshooting, maintenance etc. at each Court during the MPWC period.

- 1.2 The maintenance service provided shall ensure proper functioning of the SPV Power Plant as a whole. All preventive/routine maintenance and breakdown/corrective maintenance required for ensuring maximum uptime shall have to be provided by the Supplier. The Contractor shall furnish a Performance Report duly attested by the authority of Beneficiary Organization/Officer in charge of the Court for each worksite quarterly (every three months) to MANIREDA within 15th day of following month. The Maintenance and Performance Warrantee Contract (PWMC) shall have two distinct components as described below.

2.0 Preventive/Routine Maintenance

- 2.1 This shall include activities such as, cleaning and checking the health of the SPV Power plant, cleaning of module surface, topping up of batteries, tightening of all electrical connections, changing of tilt angle of module mounting structure, cleaning & greasing of battery terminals and any other activity that may be required for proper functioning of the SPV Power Plant as a whole.

3.0 Breakdown/Corrective Maintenance

- 3.1 Whenever a complaint is lodged by the user, the bidder shall attend to the same within a

reasonable period of time 3 days and in any case the breakdown shall be corrected within a period not exceeding 7 days from the date of complaint.

- 3.2 The bidder shall maintain the following facilities at the local Service Centre for ensuring highest level of services to the end user
1. Adequately trained manpower, specifically trained by the bidder for carrying out the service activities.
 2. Adequate provisions for record keeping, which shall inter-alia, include the following : (a) Details of system supplied within the command area of the service station including full name and address of end user, system and sub-system serial numbers and records of routine maintenance carried out (duly signed by the end user). These records shall include voltage, current, specific gravity, indicator charge, full glow, charge controller operation, electronics, etc.
(b) History record sheets of maintenance done.
 3. Adequate spares and manpower for ensuring least down time of an individual system.
 4. The Service Center shall send summary service reports to MANIREDA on half yearly basis. These reports shall include the following information :
 - (a) Number of Plant/systems covered by the Service Center
 - (b) Number of SPP/systems working satisfactorily on the reporting date
 - (c) Number of complaints received during the period of reporting
 - (d) Number of complaints attend during the period of reporting
 - (e) Major cause of failure, as observed
 - (f) Major replacement made during the reporting periodSeparate report shall be submitted for each type of systems manufacture wise in case the service center caters to the requirement of more than one manufacture
- 3.3 The records maintained at the Service Center shall be available from time to time to MANIREDA.
- 3.4 The date of MPWC maintenance period shall begin on the date of actual commissioning of the SPV systems.
- 3.5 Bidder shall furnish details of infrastructure that are presently available for establishing of Service Centers.

7. Proforma – 1

Forwarding Letter

NIB No.: MANIREDA /SPP/SC/2014/1

To,

The Director

Manipur Renewable Energy Development Agency (MANIREDA) Science & Technology Complex, SAI Road, Takyelpat Imphal-795001

Sub : Offer In Response to Notice Inviting Bid No. MANIREDA/SPP/SC/2014/1 for Manufacturing, Supply, Installation, Testing & Commissioning Including 5 Years Maintenance and Performance Warrantee Contract (MPWC) of SPPs Under Solar Photovoltaic Programme

Sir,

With reference to the above we are submitting this offer after having fully read and understood the nature of the work and having carefully noted all the specifications, terms & conditions laid down in the bid document. This offer is hereby submitted in two different envelopes sealed inside a third envelope duly marked and sealed as indicated below :

Part – I (Technical Proposal): Submitted in original plus one copy (1+1) Part – II (Financial Proposal) : Submitted in one original copy only (1+0)

We also confirm that:

2. We are an Indian company/firm.
3. The components of SPV systems shall be indigenously manufactured.
4. We have never been debarred from executing similar type of work by any Central/ State/ Public Sector Undertaking/Department/Nodal Agency.
5. The Bid Document is downloaded from MANIREDA website and necessary document in support is enclosed.
6. We shall execute the offer/work order as per specifications, terms & conditions of the Bid Documents on award of work.
7. Our offer shall remain valid for placement of purchase orders up to 365 days from the due date of submission of offer.
8. If at any time, any of the declarations submitted by us is found to be false, our offer or order is liable to rejection.

Yours faithfully,

(Signature of Authorized Signatory)

Name :
Designation :
Company Seal :

8. Proforma – 2

Authority Letter for Signing Bid Document & Attending Bid Opening Meeting

NIB No.: MANIREDA/CCTN/SPP/2014/1

Date :

To,

The Director
Manipur Renewable Energy Development Agency (MANIREDA)
Science & Technology Complex, SAI Road, Takyelpat,
Imphal-795001

Sub : Authority Letter for Signing Bid Document & Attending Bid Opening Meeting

I hereby authorize (Name & Designation) to sign the Bid Document and attend the Bid Opening Meeting to be held on..... at MANIREDA on behalf of our company.

He is also authorized to provide clarifications/confirmations, if any, and such clarifications/confirmations shall be binding on the company. The specimen signature of is attested below.

.....

(Specimen Signature)
Name :
Designation :

(Signature of Authorized Signatory)
Name :
Designation :
Company Seal :

Yours faithfully,

(Signature of Authorized Signatory)
Name :
Designation :

Note :

1. To be submitted by bidders on official letter head of the company.
2. Authorization can be for more than one persons

9. Proforma – 3

Information about the Bidding Firm

NIB No.: MANIREDA/ SPP /SC/2014/1

Date :

Sl.	Particular			
1.	Name of the Bidder			
2.	Address of Bidder with Telephone, Fax, email			
3.	Address of the Registered Office			
4.	Address of the works			
5.	GPS Co-ordinate of Registered Office			
6.	GPS Co-ordinate of Factory Campus			
7.	Name & Designation of Authorized Signatory for Correspondence			
8.	Nature of Firm (Proprietorship/Partnership /Pvt. Ltd./Public Ltd. Co./Public Sector)			
9.	Permanent Account Number (PAN)/TIN			
10.	Firm's Registration Number			
11.	EPF Registration No. (if applicable)			
12.	Sales Tax/Value Added Tax Registration Number			
13.	Specify the Item Originally Manufactured			
14.	Year of Starting of Manufacturing/ Assembling of PV Component(s)			
15.	Installed Capacity for Solar Products/ Components/Plant			
16.	Total Production and Sale of PV Products During the Last Three Years (in Rupees)	2010-11	Production	Sales
		2011-12		
		2012-13		
17.	Name of Material and Model Type Offered			
18.	Name of Manufacturer of SPPs with Full Address			

	1.	SPV SPPs	
	2.	PV Module	
	3.	Control Electronics/Inverter/PCU	
	4.	Battery	
20.	Particulars of Earnest Money		
21.	Quantity Quoted for Solar Power plant		
22.	Name of the Test Center where the testing of Components SPP has been performed		
23.	Test Report No. of components SPP mentioning date of test		
24.	Specify MNRE specification as in the test report		
25.	Place where Materials will be Manufactured		
26.	Place where Materials will be Available for Inspection		
27.	Whether the Bidder has submitted details with regard to supplies made to important organizations.		
28.	Details of any existing service network in Manipur (Name & address of service centre)		
30.	Other details and remarks, if any		

Yours faithfully,

(Signature of Authorized Signatory)

Name :
 Designation :
 Company seal :

(Separate sheet may be used for giving detailed information in seriatim duly signed. This bid proforma must be submitted duly signed in case separate sheet is submitted).

10. Proforma – 4

Details of Orders Received and Executed in Past Years

NIB No. : MANIREDA/ SPP /SC /2014 /1

Date :

Details of Orders Received & Executed by the Manufacturer/Supplier for Supply of SPPs to SNA/ Govt. Organization/Others during past Years.

Sl. no.	Name of Agency/ Organization	Purchase Order No., Date & Ordered Qty.	Name of Model	Delivery Schedule	Qty. Supplied Within Delivery Schedule	Qty. Supplied After Delivery Schedule	Date of Full Supply

Yours faithfully,

(Signature of Authorized Signatory with Name Designation & Company Seal)

Note:

- (a) Attach Photocopies of Purchase Orders
- (b) Attach Photocopies of Certificate of Satisfactory Performance Issued by Concerned Agency/Organization
- (c) Separate sheet may be used for giving detailed information in seriatim duly signed. This bid proforma must be submitted duly signed in case separate sheet is submitted

11. Proforma – 5

No Deviation Certificate

NIB No. : MANIREDA/ SPP/SC/2014/1

Date :

To,
The Director
Manipur Renewable Energy Development Agency
(MANIREDA) Science & Technology Complex, SAI Road,
Takyelpat
Imphal-795001

Dear Sir,

We understand that any deviation/exception in any form from our bid against the above mentioned reference number may result in rejection of our bid. We, therefore, certify that we have not taken any exceptions/deviations anywhere in the bid and we agree that if any deviation is mentioned or noticed, our bid may be rejected.

Yours faithfully,

(Signature of Authorized Signatory)

Name :

Designation :

Company seal :

Note : This “No Deviation Certificate” should be written on the letter head of the bidder indicating BID No. duly signed and stamped with date by a person competent and having the power of attorney to bind the bidder.

12. Proforma – 6

Format for Submitting Bank Guarantee in Lieu of Earnest Money

NIB No. : MANIREDA/ SPP /SC /2014/1

Date :

(To be submitted in Rs. 50/- Non-Judicial Stamp Paper to be purchased in the name of the issuing bank)

To,

The Director

Manipur Renewable Energy Development Agency (MANIREDA)

Science & Technology Complex, SAI Road, Takyelpat

Imphal-795001

WHEREAS (Supplier's name) (hereinafter referred to as "Supplier"), a company registered under the Companies Act, 1956/ SSI and having its registered office at..... is required to deposit with you, the Purchaser, by way of Earnest Money Rs.(Rupeesonly) in connection with its tender for the work with reference to Notice Inviting Bid (NIB) No. dated as per specification and terms and conditions enclosed therein.

WHEREAS the Supplier as per "Notice Inviting Bid, point no. 9 Earnest Money" has agreed to establish a Bank Guarantee in Your favour through us valid up to .. (date) instead of deposit of earnest money in cash.

WHEREAS you have agreed to accept a Bank Guarantee from us in instead of earnest money in cash from the Supplier.

1. We (Bank) hereby agree and undertake to pay you on demand the said amount of Rs. (Rupees only) without any protest or demur in the event the Supplier/Tenderer after submission of his tender, resiles from or withdraws his offer or modifies the terms and conditions thereof in a manner not acceptable to you or expresses his unwillingness to accept the order placed/letter of intent issued on the Supplier/Tenderer for the work under "Notice Inviting Bid Ref. No. : MANIREDA/ SPP /SC /2014/1 dated.....
2. Your decision as to whether the Supplier/Tenderer has resiled from or has withdrawn his offer or has modified the terms and conditions thereof in a manner not acceptable to you or has expressed his unwillingness to accept the order placed Letter of Intent issued by you on the Supplier/Tenderer for the work under "Notice Inviting Bid Ref. No. : MANIREDA/ SPP/SC /2014/1 dated..... in this regard, shall be final and binding on us and we shall not be entitled to question the same.
Notwithstanding anything contained in the foregoing, our liability under this Guarantee shall be restricted to Rs.... (Rupees only).
4. This Guarantee shall remain valid and in full force and effect up to (date) and shall expire thereafter unless an intimation is given to the Bank by you earlier in writing discharging us from our obligation under this Guarantee.
5. We shall not revoke this Guarantee during its currency except by your consent in writing.
6. This Guarantee shall not be affected by any change in the constitution of the Supplier/Tenderer or yourselves or ourselves but shall ensure to your benefit and be enforceable against our legal successors or assignees by you or your legal successors.
7. Notwithstanding anything contained herein above unless a demand or claim under this Guarantee is made on us in writing within six months from the date of expiry of this Guarantee we shall be discharged from all liabilities under this Guarantee thereafter.
8. We have power to issue this Guarantee under our Memorandum and Articles of Association and the undersigned who is executing this Guarantee has the necessary power to do so under a duly executed Power of Attorney granted to him by the Bank.

Signed and Delivered

For and on behalf of Bank. (Banker's Name)

Name of Bank Manager :

Address

13. Proforma – 7

Format for Guarantee Card to be Supplied with Each SPP

NIB No : MANIREDA/SPP /SC /2014/1

Date :

(To be supplied by bidders on the official letter head of the company/firm)

Guarantee Card

1.	Name & Address of the Manufacturer/ Supplier of the System	
.	Name & Address of the Purchasing Agency	
3.	Date of Supply of the System	
4.	Details of PV Module(s) Supplied in the System	
	(a) Name of the Manufacturer	
	(b) Make	
	(c) Model	
	(d) Serial No.	
	(e) Wattage of the PV Module(s) under STC	
	(f) Guarantee Valid Up To	
5.	Details of Battery	
	(a) Name of the Manufacturer	
	(b) Make	
	(c) Model	
	(d) Batch/Serial No(s).	
	(e) Month & Year of Manufacture	
	(f) Rated V & AH Capacity at C/10 Rated at 27 ⁰ C	
	(g) Guarantee Valid Up To	
6.	Details of PCU/Inverter & Other BOS Items	
	(a) Name of the Manufacturer	
	(b) Make	
	(c) Model	
	(d) Serial No(s).	
	(e) Month & Year of Manufacture	
	(f) Guarantee Valid Up To	
7.	Designation & Address of the Person to be Contacted for Claiming Guarantee Obligations	

(Signature of Authorized Signatory with Name, Designation & Company Seal)

14. Proforma – 8

**Format for Certificate of Delivery of the Number of SPPs Received by the Consignee as
Proof of Compliance by the Supplier**

NIB No. : MANIREDA/SPP/SC/2014/1

Date :

CERTIFICATE

Consignee
Name of Department
Address

Certified that nos.(in word.....) of 5kWp Solar Power Plant(20 nos x 250W SPV Module complete with array structure,48nosx2V 300AH Tubular VRLA Type flooded lead acid battery with rack,5KVA PCU/Inverter complete with ACDB, DCDB, cables, Solar Still, Exhaust Fan, Fire extinguisher etc) has been supplied, installed and commissioned at designated 31 sites (Courts) by M/s..... with funding from Ministry of New and Renewable Energy, Govt. of India, Government of Manipur and Law Department in the state of Manipur as per terms of Work Order No.....dtd.....

Signature of Consignee.....
Name:.....
Designation:.....
Seal

15. Proforma – 9

Format for Location-wise Detail of the Module, Battery & Inverter etc Utilization Report of 5kWp Solar Power Plant (SPP) Installed Under Solar Photo Voltaic Program (SPV)

NIB No. : MANIREDA/ SPP/SC/2014/1

Date :

Name of Manufacturer/Supplier :..... Name of Consignee

.....

Address of Consignee :

(A) Solar Power Plant.

Sl. No.	Name of Beneficiary with address of site	District	Module			Battery			Inverter/PCU with Charge controller			Date of Installation	Name of the Court with address
			Number	Make	Year of Manufacture	Number	Make	Year of Manufacture	Number	Make	Year of Manufacture		

16. Proforma – 10

**Format for Submitting the PRICE SCHEDULE/FINANCIAL BID(To be uploaded ONLINE only)
for Design,supply,installation & Commissioning with Five years of Maintenance
Performance Warranty Contract of 5x31kWp SPV Power Plant in Manipur**

BID No. : MANIREDA/ SPP/SC /2014/1

Date :

To,

The Director

Manipur Renewable Energy Development Agency (MANIREDA) Science & Technology Complex, SAI
Road, Takyelpat, Imphal-795001

Price Schedule

Sl.	Item	Total Bid Quantity	Price in Rupees	
			Unit Price	Total Price
1	2	3	4	5 = 3 x 4
1.00	System cost on Supply,installation & commissioning of 5kWp Solar Plant(SPP)	31		
1.01	Add CST @6% on system cost			
1.02	Transit Insurance			
1.03	Transportation			
2.00	Installation & Commissioning charge			
2.01	Income Tax @2.224% on Installation			
2.02	Labour Cess @1% on Installation			
2.03	Service Tax@12.36% on Installation			
2.04	VAT @ 6% on installation			
3.00	MPWC(Maintenance Performance Warranty Contract)			
3.01	Income Tax @2.224% on MPWC			
3.02	Labour Cess @1% on MPWC			
3.03	Service Tax@12.36% on MPWC			
3.04	VAT @ 6% on MPWC			
	Total in figures			
	Total in words			Rupees only

(DO NOT SUBMIT FINANCIAL BID IN PHYSICAL FORM,TO BE UPLOADED ONLINE ONLY)

Note :

- (i) Labour Cess@1% would be deducted at source out of labour charge applicable.
- (ii) Service Tax @ 12.23% have to be paid directly by the firm/local dealer.
- (iii) Income Tax @ 2.244% of installation charge would be deducted at source.
- (iv) 6% VAT would be deducted at source from the installation & commissioning and MPWC charges if it is to be executed by local dealer.

1 Certified that rates quoted for SPPs are as per specifications, terms & conditions mentioned in the bid document.

Yours faithfully, (Signature of Authorized Signatory)

Name:

Designation :

Company seal :

17. Check List & Format for Submission of Bid

The following information/documents are to be annexed and flagged by the bidders along with the BID

Sl. No	Annexure and Proforma No.	Particulars	Yes/No, Flag No.	To be done
1	Annexure-I	Details of Earnest Money(D.D or bank guarantee No.) from any nationalized bank and validity for 12months from the last date of submission of bids		Both uploading & hard copy
2	Annexure-II	A copy of the document/certificate that the bidder is a manufacturing company/Firm/corporation registered in India of SPV Cells/Modules/battery/PV system electronics/inverter(conforming to relevant National/International Standards)		Both uploading & hard copy
3	Annexure-III	A copy of the Certificate for solar module as per IEC Standards		Both uploading & hard copy
4	Annexure-IV	Test Certificate conforming to MNRE approved specifications of the components of SPV Power Plant like Inverter/PCU,Battery,Module etc from a MNRE authorised testing centres /NABL accredited(Test Certificate should have been issued on or after April,2009)		Both uploading & hard copy
5	Annexure-V	A copy of valid CST/State VAT/TIN registration Certificate		Hard copy
6	Annexure-VI	A summarized sheet of cumulative experience of the bidder in PV systems/power plants whose work order should be in the name of the bidder.		Statement for uploading but details of work orders in hard copy
7	Annexure-VII	Overall Average Annual Turnover of the Company/Firm/Corporation in the last two financial years(A summarized sheet of turnover of last two Financial Years certified by registered CA)		Both uploading & hard copy
8	Annexure-VIII	MNRE accredited off-Grid Channel Partner/Programme Administrator with Credit Rating(from MNRE Accredited Rating Agency)		Both uploading & hard copy
9	Annexure-IX	The bidder has ISO 9001 certification		Both uploading & hard copy
10	Annexure-X	The bidder has ISO 14001 certification		Both uploading & hard copy
11	Annexure-XI	Copy of MoU signed for Pre-bid tie-up		Hard copy
12	Annexure-XII	Demand Draft for cost of bid document/Photocopy of Demand Draft		Hard copy
13	Annexure-XIII	Letter of acceptance to furnish the information in Proforma – 7, Proforma – 8, Proforma – 9,		hard copy
14	Annexure-XIV	Photographs of MD or Two Directors (in case of Ltd. Company.)		Hard copy
15	Annexure-XV	Technical Particular data sheet of SPP of Bidder		Hard copy
16	Annexure-XVI	Copy of audited Balance Sheet and Profit & Loss Account for last 3 (three) years		Hard copy
17	Annexure-XVII	Photographs of Registered Office & Factory attested by Gazetted Officer or Notary Public.		Hard copy
18	Annexure-XVIII	A tentative overall supply schedule in the form of Bar Chart		Hard copy
19	Proforma – 1	Forwarding Letter		Both uploading & hard copy
20	Proforma – 2	Authority Letter for Signing Bid Document & Attending Bid Opening Meeting		Both uploading &

				hard copy
21	Proforma – 3	Information about the Bidding Firm		Both uploading & hard copy
22	Proforma – 4	Details of Orders Received and Executed in Past Years		Both uploading & hard copy
23	Proforma – 5	No Deviation Certificate		Hard copy
24	Proforma-10	Price Bid		Only Uploading

Please ensure:

1. That all information is provided strictly in the order mentioned in the check list mentioned above.
2. Note that this is a zero deviation tender. Bidders are advised to strictly confirm compliance to bid conditions and not to stipulate any deviation/conditions in their offer. Subsequent to bid submission, MANIREDA may or may not seek confirmations/clarifications and any offer(s) not in line with Bid conditions shall be liable for rejection.
3. Any clarification/confirmation bidder may require shall be obtained from MANIREDA before submission of the bid.
4. Bidder shall submit complete bidding document including subsequent amendment, modification and revision, duly signed and stamped as a token of having read, understood and accepted all the terms and condition mentioned therein.

18. Proforma-11

(On the Letter Head of the Firm)

PROFORMA OF APPLICATION FOR PAYMENT

Unit Reference:

Date:

Name of Contractor:	Contract No.:
Contract Name :	
Application Serial Number. :	Contact Value :

To,

The Director
Manipur Renewable Energy Development Agency (MANIREDA)
Imphal, Manipur

Dear Sir,

APPLICATION FOR PAYMENT

Pursuant to the above referred Contract datedthe undersigned hereby applies for payment of the sum of(Specify amount and currency in which claim is made).

2.The above amount is on account of :[TICK whichever is applicable]

- Initial advance
 - Interim Payment as advance
 - Progressive payment against dispatch of equipment
 - Progressive payment against receipt of equipment at site
 - Progressive payment against Erection/installation & commissioning
 - Ocean freight & marine insurance
 - Inland transportation
 - Inland insurance
 - Price adjustment
 - Extra work not specified in Contract
(Ref. Contract Change order No.....)
 - Other (specify)
 - Final payment
- As detailed in the attached Schedule (S) which form an integral part of this application.

3.The payment claimed is as per item(s) No.(s)of the payment schedule annexed to the above – mentioned Contract.

4.The application consists of this page, a summary of claim statement and the following signed schedule

- i).....
- ii).....
- iii).....

The following documents are also enclosed

- a).....
- b).....
- c).....

Signature of Contractor/
Authorised Signatory.

19.Proforma-12

MATERIALS INSPECTION CLEARANCE CERTIFICATE (MICC)

1. Name of the Work: Design, manufacture, supply, installation and commissioning of 31Nos. of 5kWp Solar Power Plant including 5 years MPWC in Manipur.
2. Name of Worksite/Location: 31subordinate Courts in Manipur.
3. Name of the Firm/Contractor: :
4. Work Order No.: dated
5. Shipment No.....
6. Date shipped:.....,
7. Shipped From 8. Shipped To Imphal

SL. No.	Item Description	Qty./ system	Invoice No. & date	Challan No. & date	Make	Unit price	Amount	Remarks
1	2	3	4	5	6	7	8	9
1.(a)	SPV Module							
(b)	Module/array Structure							
(c)	Junction Box							
2.(a)	PCU/Inverter							
(b)	Electronics							
3.(a)	Storage battery							
(b)	Battery rack							
4.(a)	Charge controlling unit							
(b)	ACDB,DCDB							
5.(a)	Cable & Wire							
(b)	Earthing system, Lightning arrester							
(c)	Exhaust Fan, Extinguishers, sand Buckets							
6.(a)	Manual							
(b)	Others if any							

9. Enclosed documents: Packing List with model numbers, Invoice, Challan, Goods Consignment Note, Way Bill etc.**10.**

Receiver's Use: Quantities shown in column 2 were received in apparent good condition except as noted.

Date received: _____ Signature of authorized MANIREDA representative

Name:

Designation: Field Assistant as Store Assistant

11. Inspected on:and jointly by MANIREDA officials and representative of M/sat godown of MANIREDA/warehouse of the Firm at Imphal treated as transits Godown of MANIREDA and found okay.

12. Destination: Acceptance of listed items has been made by me or under my supervision and they conform to contract, except as noted herein or on supporting documents.

Date: _____ Signature of authorized MANIREDA representative

Name:

Designation: Scheme Officer

20. Proforma – 13

COMPLETION CERTIFICATE

- 1. Name of the Work:** Design, manufacture, supply, installation and commissioning of 31 Nos. of 5kWp Solar Power Plants including 5 years MPWC in Manipur.
- 2. Name of Worksite/Location:**
- 3. Name of the Firm/Contractor. :**
- 4. Work Order No.:** dated
- 5. Date of completion:**.....

SL. No.	Item Description	Qty.	Make	Product Serial No.	Remarks if any
1	2	3	4	5	9
1.(a)	SPV Module				
(b)	Module Mounting Structure				
(c)	RCC Array foundation				
(d)	Junction Box				
2.(a)	PCU/Inverter				
(b)	Electronics				
3.(a)	Storage battery				
(b)	Battery Bank & rack				
4.(a)	Charge Controlling Unit				
(b)	ACDB/DCDB				
5.(a)	Cable & wire				
(b)	Earthing,Lightning arrester				
(c)	Exhaust Fan,Fire Extinguishers,sand Buckets				
6.(a)	Manual				
(b)	Others if any				

9. Enclosed documents: 5 copies of completion reports along with photographs of the system installed are hereby submitted to MANIREDA, both in hard and soft copies wherein details of equipment given in format above.

10. Signature of Beneficiary: Quantities shown in column 2 were received , installed and tested at the location intimated by us.

Date of received and installed:
Name:
Designation:

Signature of Scheme Officer, MANIREDA

11. Inspected on:and jointly by MANIREDA officials and representative of M/sat the site and found okay.

12. For Contractor Use only: Endorsed and certified the above report on behalf of M/s.....

LIST OF THE (THIRTY One) Courts of Manipur

1. Imphal West District.
 - i) District & Sessions Judge
 - ii) Addl. Distt. & Sessions Judge
 - iii) Addl. Distt. & Sessions Judge (FTC)
 - iv) Civil Judge (Sr. Divn.) Cum Asst. Sessions Judge
 - v) Chief Judicial Magistrate
 - vi) Civil Judge, Jr. Divn./JMFC
 - vii) Civil Judge, Jr. Divn./JMFC
 - viii) Special Court (ND&PS)
 - ix) Family Court
2. Imphal East District.
 - i) District & Sessions Judge
 - ii) Addl. Distt. & Sessions Judge
 - iii) Addl. Distt. & Sessions Judge (FTC)
 - iv) Civil Judge (Sr. Divn.I)
 - v) Civil Judge (Sr. Divn.II)
 - vi) Chief Judicial Magistrate
 - vii) Civil Judge, Jr. Divn./JMFC
 - viii) Special Court (Electricity)
- 3) Thoubal District.
 - i) Civil Judge (Sr. Divn.) Cum C.J.M.
 - ii) Civil Judge (Jr. Divn./JMFC)
3. Bishnupur District.
 - i) Civil Judge (Sr. Divn.) Cum C.J.M.
 - ii) Civil Judge (Jr. Divn./JMFC)
5. Senapati District.
 - i) Chief Judicial Magistrate
6. Chandel District.
 - i) Chief Judicial Magistrate
7. Churachandpur District
 - i) Civil Judge (Sr. Divn.) Cum C.J.M.
 - ii) Civil Judge (Jr. Divn./JMFC)
8. Ukhrul District.
 - i) Civil Judge (Sr. Divn.) Cum C.J.M
 - ii) Civil Judge (Jr. Divn./JMFC)
9. Tamenglong District.
 - i) C.J.M. cum Civil Judge (Jr. Divn.)
10. Jiribam
 - i) Civil Judge (Jr. Divn./JMFC)
11. Kangpokpi
 - i) Civil Judge (Jr. Divn./JMFC)
12. Moreh
 - i) Civil Judge (Jr. Divn./JMFC)