

BID DOCUMENT

E-TENDER for

- (i) Design, manufacture, supply, installation and commissioning including integration to Grid of 420 (200+200+20) kWp Grid connected Solar Power Plant and 5 years Maintenance and Performance Warranty Contract (MPWC) at New Civil Secretariat Buildings (North Block, South Block & Minister's Block, Imphal East District, Manipur.

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- (ii) Design, manufacture, supply, installation and commissioning including integration to Grid of 40 kWp Grid connected Solar Power Plant and 5 years Maintenance and Performance Warranty Contract (MPWC) at All India Services (AIS) Accommodation Building at 2nd M.R, Imphal East District, Manipur.

NIB No. MANIREDA/SPP/RTS/NCS & AIS/2022-23/5

Manipur Renewable Energy Development Agency (MANIREDA)

2nd Floor, South Block, Secured Office Complex, A.T. Line, Near Hotel Imphal, Imphal-795001

E-mail : manireda99@yahoo.com, Website : www.manireda.mn.gov.in

December 2022

(This tender document is having 47 pages including this page)

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NOTICE INVITING BID

No. : MANIREDA/SPP/RTS/NCS & AIS/2022-23/5 dtd. 07/12/2022

Online Tenders are invited from eligible Firms for :

- i) Design, manufacture, supply, installation and commissioning including integration to Grid of 420 (200+200+20) kWp Grid connected Solar Power Plant and 5 years Maintenance and Performance Warranty Contract (MPWC) at New Civil Secretariat Buildings (North Block, South Block & Minister's Block, Imphal East District, Manipur.

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- ii) Design, manufacture, supply, installation and commissioning including integration to Grid of 40 kWp Grid connected Solar Power Plant and 5 years Maintenance and Performance Warranty Contract (MPWC) at All India Services (AIS) Accommodation Building at 2nd M.R, Imphal East District, Manipur.

Cost of Bid Document	Date & Time for Pre-Bid Meeting	Last date & time for submission of E-Tender	Last date & time for opening of E-Tender
Rs. 1,500/-	Held on 19 th Dec., 2022	16/1/2023 upto 12.00 Noon	16/1/2023 at 2.00 p.m.

Tender Document can be downloaded from the websites; www.manipur tenders.gov.in or www.manireda.mn.gov.in. Bidders have to submit the Hard copies of Bid at the office of MANIREDA.

N.B.: MANIREDA reserves the right to modify/ cancel the Tender without assigning any reason thereof or without bearing any liability, whatsoever, consequent upon such decision.

Sd/-

(N. Praveen Singh)
Director, MANIREDA

2. Bid at a glance

Sl	Description	Details
1.	Notice Inviting Bid (NIB) No.	MANIREDA/SPP/RTS/NCS & AIS/2022-23/5 dated 7/12/2022
2.	Scope of work	<p>(i) Design, manufacture, supply, installation and commissioning including integration to Grid of 420 (200+200+20) kWp Grid connected Solar Power Plant and 5 years Maintenance and Performance Warranty Contract (MPWC) at New Civil Secretariat Buildings (North Block, South Block & Minister's Block, Imphal East District, Manipur.</p> <p style="text-align: center;">&</p> <p>(ii) Design, manufacture, supply, installation and commissioning including integration to Grid of 40 kWp Grid connected Solar Power Plant and 5 years Maintenance and Performance Warranty Contract (MPWC) at All India Services (AIS) Accommodation Building at 2nd M.R, Imphal East District, Manipur.</p>
3.	Cost of bid document	Rs 1,500/- in the form of DD from any Nationalized/Scheduled bank favouring Director MANIREDA payable at Imphal. Cost of Bid Document is exempted for MSME/NSIC registered Firms.
4.	Earnest Money Deposit (Refundable)	<p>(a) Rs. 3,88,000/- for 420 kWp and</p> <p>(b) Rs. 40,000/- for 40 kWp only in the form of DD favoring Director MANIREDA, payable at Imphal.</p>
5.	Last date of uploading of bid document in the e-tender portal	Date : Up to 12.00 noon of 16th January, 2023 e-tendering site - https://manipur.tenders.gov.in
6.	Submission of Hard copy of bids	Date : 16th January, 2023 Time : Upto 12.00 noon (submission of documents after 12.00 noon will not be accepted at any circumstances and not eligible)
7.	Pre- Bid Meeting	Held on 19th December, 2022 Venue : Office of the Director, MANIREDA, 2 nd Floor, South Block, Secured Office Complex, AT Line, Imphal.
8.	Opening of Technical Bid	Date : 16th January, 2023 Time : 2 .00 pm sharp. Venue : Office of the Director, MANIREDA, 2 nd Floor, South Block, Secured Office Complex, AT Line, Imphal.

9.	Place of submission of bid documents and address for communication/ Bid Opening Meeting	Manipur Renewable Energy Development Agency (MANIREDA), 2 nd Floor, South Block, Secured Office Complex, AT Line, Near Hotel Imphal, Imphal - 795001. Website : www.manireda.mn.gov.in , E-mail : manireda99@yahoo.com
10.	Opening of Financial Bid	Financial Bids will be opened only for Technically qualified bidders. Date and Time : Will be informed.
11.	Validity of offer	The offer shall remain valid up to 365 days from the date of submission of offer.
12.	Duration of project	i) 12 (Twelve) months from the date of placement of work order for 420 kWp GCRTS at New Civil Secretariat Building. ii) 3(Three) months from the date of placement of work order for 40 kWp GCRTS at AIS Accommodation Building.
13.	Submission of Test Reports and technical documents	Technical documents may not be submitted in the tender-portal but needs to submit hard copies as per requirement on or before opening date of the tender.
14.	Participation of Tender	Only vendors who participated the Pre-Bid discussion held on 19 th Dec., 2022 can participate this tender.
15.	Notices/amendments/cancellation to be updated	Prospective bidders are requested to remain updated for any notices/amendments/cancellation, etc. in the bid document conditions/terms, in the above mentioned website. No separate notifications will be issued for such notices /amendments/ clarifications etc. in the print media (press) or intimated to the bidders separately.

3. Detailed Notice Inviting Bid (DNIB)

CHAPTER – I : ABOUT THE BID AND ITS SUBMISSION PERIOD :

1. Bid Document :

- 1.1 NIB No. : MANIREDA/SPP/RTS/NCS & AIS/2022-23/5 dated 7/12/2022.
- 1.2 This Bid Document comprises of total 47 pages including Proformas. 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 the 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.
- 1.3 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, 2nd Floor, South Block, Secured Office Complex, AT Line, Near Hotel Imphal, Imphal** in presence of bidders or their authorized representatives. The representative should produce authorization letter to attend the bid opening meeting in the Proforma-2.

2. Cost of Bid Document :

- 2.1 Bidders can download the Bid Document from Manipur E-Tender website (www.manipurenders.gov.in) and MANIREDA website (www.manireda.mn.gov.in) and submit the cost of the bid document amounting Rs 1,500/-along with Technical Bid. Cost of Bid Document is exempted for MSME/NSIC registered Firms.

3. Earnest Money :

- 3.1 EMD for an amount of Rs. 3,88,000/- for 420 kWp and Rs. 40,000/- for 40 kWp shall be submitted alongwith the technical bid in the form of Demand Draft, Fixed Deposit Receipt or Bank Guarantee from a Nationalised Bank/Scheduled bank of requisite value in favour of Director, MANIREDA payable at Imphal. However, the EMD will be exempted for MSME/NSIC registered Firms.
- 3.2 The earnest money shall be returned to all unsuccessful bidders in technical evaluation, within 3 weeks.
- 3.3 No interest will be paid on EMD.
- 3.4 The earnest money shall be forfeited if –
 - 3.4.1. Any bidder withdraws his bid during the validity period of the bid.
 - 3.4.2. The successful bidder fails to furnish his acceptance of the Order within fifteen days of placement of Work Order by MANIREDA.
 - 3.4.3. 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.

4. Pre- Bid Meeting:

- 4.1 A Pre- Bid Meeting will be held at the Office of Director, MANIREDA at 11.00 a.m. on 19th December, 2022 in offline mode. (Held as per schedule).
- 4.2 **All the Bidders should visit and familiarize the installation sites before Pre-Bid Meeting.**
- 4.3 All the Bidders should attend the Pre- Bid Meeting, otherwise the Bid is liable to be rejected.

5. Submission of Bids:

Bidders have to upload the documents in the E-tender website

(<https://manipur.tenders.gov.in>). Bidders shall also have to submit hard copies of the uploaded documents as well.

- 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 Total number of pages should be clearly mentioned and certified by competent authority.
 - 5.4 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.
 - 5.5 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.
 - 5.6 The offer shall contain no erasures or overwriting except as necessary to correct errors made by bidder. Such corrections, if any, shall be initialled by the person signing the offer.
 - 5.7 Hard copy of Bid Document should be submitted in Hard Bond or Spiral Binding.
 - 5.8 The Bid Document should have proper paging and flagging of Annexures/details.
 - 5.9 Documents without proper binding and proper paging etc. will not be considered in the evaluation.
 - 5.10 Any Overwriting /illegible/erasing, etc. in the documents submitted by the firms shall not be accepted.
 - 5.11 Insertion, post-script, addition and alteration in Hard Copy shall not be recognized unless confirmed by bidder's signature and stamp.
 - 5.12 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.
 - 5.13 Attestation of various documents enclosed along with the offer must be done by a competent authority or by the Proprietor of the Firm.
 - 5.14 Test Reports & Technical documents not uploaded may be submitted to the office of MANIREDA on or before the date of opening of the tender with proper paging and flagging of Annexures/details.
- 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) Authorization letter for attending Bid Opening Meeting (Proforma-2).
 - (iv) Information about the Bidding Firm (Proforma-3).
 - (v) Details of Work Orders Received and Executed in Past 3 years (Proforma-4).
 - (vi) Test Reports of components like PV module, Inverter, Energy meter, ACDB, DCDB etc. from approved/competent NABL accredited testing centres.
 - (vii) Bidders should have experience of successful commissioning of minimum aggregate of 100 kWp of off grid / grid interactive solar power plant and at least one solar power plant having minimum capacity of 50 kWp during last three years. For experience, supportive documents are to be enclosed. Bidders with experience for installation of 100 kWp at one site will be given extra points in selection of the bidder.

For channel partners/eligible firms based in Manipur, the above experience & turnover may be relaxable instead their satisfactory performance shall be taken into account.

- (viii) A summarized sheet of turnover for last 3 yrs certified by registered Chartered Accountant.
- (ix) GST Registration Certificate of Company/Firm.
- (x) **GST Clearance Certificate/ latest GST return filing proof.**
- (xi) **Latest Professional Tax receipt/challan from the Deptt. of Taxes.**

- 6.2. The bidder shall download the template of Price Bid/Schedule of Works /Bill of Quantity (BOQ) as mentioned in the Proforma-7 which is uploaded in the Tender in the aforesaid site (<https://manipurtenders.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.
- 6.4. The bidder also must submit Hard copy of documents stated above at Para 7.1 to 7.9 with all supporting documents 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/RTS/NCS & AIS/2022-23/5 (Technical Bid)", to the office of MANIREDA, 2nd Floor, South Block, Secured Office Complex, AT Line, Near Hotel Imphal, Imphal-795001 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 of requisite value.
 - (iii) 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 upto 12 noon of 16th Jan, 2023, failing which no late comers would be strictly entertained.
- 6.9. The Bidders should furnish the Authorization letter as per Proforma – 2 with the seal of the company for the person attending the Bid Opening meeting & signing the bid document.
- 6.10. 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.

CHAPTER – II : ELIGIBILITY CRITERIA

7.0 Eligibility and Qualification Criteria

- 7.1 The bidder should be:

A Registered Company/Firm/Corporation in India with supporting documents. Cumulative Experience of the Bidders should be of executing contracts of Grid connected Rooftop Solar Power Plants (installed & commissioned). The bidders should have experience of successful commissioning of minimum aggregate of 500 kWp of grid interactive solar power plant and at least one solar power plant having minimum capacity of 50 kWp during last three years. For experience, supportive documents are to be enclosed. Bidders with experience for installation of 100 kWp at one site with net-metering facility, (commissioned at least six months prior to last date of submission of offer) will be given extra points in selection of the bidder.

Also, additional points will be kept for **bidders based in Manipur.**

For 40 kWp Grid Connected Solar Power Plants at AIS Accommodation Building, bidders

- should have experience of successful commissioning of minimum aggregate of 50 kWp of grid interactive solar power plant in the last three years.
- 7.2 Consortium will be allowed to participate in the Tender & implement the project and should be registered under Companies Act, 2013. If any Consortium participates in the above Tenders then duly filled up Consortium Agreement (Format enclosed) should be submitted along with the Technical Bid. Failing which, the Tenders may be liable to reject.
 - 7.3 Bidder should have Test Reports for the components of Grid connected Rooftop Solar Power Plant like PCU/Inverter, PV module, Energy Meter/Net Meter, ACDB, DCDB etc. from an approved/competent testing centres as per requirements under the JNNSM scheme of the MNRE, GOI.
 - 7.4 The Bidder should have valid GST Registration certificate of Company/Firm and latest GST return filing proof. A copy of which should be enclosed.
 - 7.5 Cumulative Turnover of the Company/Firm/ Corporation in the last three financial years (2019-20, 2020-21 & 2021-22) should be at least **3.00 crores**.
 - 7.6 A summarized sheet of turnover certified by registered CA should be compulsorily enclosed).
 - 7.7 Latest Professional Tax receipt/challan from the Deptt. of Taxes.

CHAPTER – III : SCOPE OF WORK

8.0 Scope of Work :

- 8.1 Scope of work as mentioned in the 'Bid at a glance'. 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.
- 8.2 The Bidder shall carefully check the specifications and shall satisfy himself regarding the technical requirement and completeness of the equipment/system. 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. If any amendment in specification is made by MNRE during implementation of this project, the same shall be followed by MANIREDA.
- 8.3 The bidders should beforehand thoroughly familiarized with the site to be installed, 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.
- 8.4 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.
- 8.5 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.
- 8.6 The Financial Bid of only those bidders, whose Technical Bids 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.mn.gov.in) regularly and keep themselves informed.
- 8.7 The channel partners should have/willing to open adequate field service setup to provide good after sale services including necessary repair and maintenance in the state of Manipur within a month after empanelment preferably in Imphal. The service centre should be located at customer friendly area with minimum infrastructural requirements, maintenance of adequate spares with competent and trained technicians.

8.8 All the components including power plant, software's and other components mentioned should be quoted as a single item. No partial quotes are accepted. For all the equipment the bidder should have an authorisation certificate from OEM(Original Equipment Manufacturer).

The above stated requirements are compulsory to be fulfilled by the tenderer and MANIREDA may also ask for any additional information as may be deemed necessary in public interest.

9.0 Price

9.1 The Bidder shall quote price as per the Price Bid/Bill of Quantity (BOQ) uploaded on the E-Tender portal.

CHAPTER – IV : PAYMENT TERMS

10.0 Terms of Payment

- 10.1 50% of the amount of the work order value {excluding Maintenance and Performance Warranty Contract (MPWC) charges} shall be paid by the purchaser after successful supply of the complete systems at the site conforming to technical specification as specified in this bid document and verification by MANIREDA, on submission of invoice to the purchaser subject to availability of fund.
- 10.2 20% of the amount of the work order value {excluding Maintenance and Performance Warranty Contract (MPWC) charges} shall be paid by the purchaser successful installation and commissioning of Solar PV Power Plant at the site, conforming to technical specification as specified in this bid document and verification by MANIREDA, on submission of invoice to the purchaser subject to availability of fund.
- 10.3 20% of amount of the work value {excluding Maintenance and Performance Warranty Contract (MPWC) charges} shall be paid by the purchaser after 3 months from the date of installation and commissioning of Solar PV Power Plant at site subject to successfully passing the performance ratio test.
- 10.4 10% of the total contract value shall be treated as performance security and shall be paid against satisfactory performance of the Solar PV Power Plant during warrantee, operation and maintenance period which includes maintaining a minimum annual performance ratio of 75%. This amount shall be paid by the purchaser in 5 equal annual instalments, starting from completion of one year from the date of Commissioning at site. The bidder shall have to submit annual performance & functionality report duly attested by the authority of New Civil Secretariat, Chingmeirong & AIS office at 2nd M.R, Imphal East District to MANIREDA for the release of annual payments.
- 10.5 Copies of invoices after inspection shall be submitted to MANIREDA along with Project Completion Report, Photographs along with details of module, inverter/PCU, Net-metering etc. for the Grid connected Solar power plant installed, and other required documents.
- 10.6 Tax clearance certificates of the firm should be produced as and when insisted by MANIREDA.
- 10.7 All payments shall be released by MANIREDA through e-payment through RTGS/account transfer for which the following mandatory information is to be furnished from the consumer:

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.

11. Performance Guarantee :

The contractor has to deposit @3% of the project cost (excluding MPWC cost) as Performance Guarantee in terms of irrevocable Bank Guarantee for the tenure of the contract including MPWC period. For the successful bidders, the EMD submitted may also be adjusted as part of the Performance Guarantee, but the firm has to submit the balance in the form of BG to make requisite 3% Performance Guarantee. If the Solar system fails to confirm to the laid down systems specifications or any deviation/compromise has been observed in the system specifications etc., the performance guarantee deposit of the firm shall be forfeited

12. Bid evaluation

12.1 The evaluation process comprises of the following steps:

Step I - Evaluation check of Bid as per the eligibility criteria

Step II – Evaluation of Technical Bid

Step III - Evaluation of Price Bid

Step IV - Selection of successful Bidder.

12.2 Responsiveness check of technical bid

The evaluation check of Bid submitted by Bidders shall be scrutinized to establish responsiveness to the requirements laid down in the bid document.

- a. Bids that are incomplete, i.e. not accompanied by any of the applicable formats inter alia covering letter, power of attorney, format for disclosure, valid Bid Bond etc.;
- b. Bid not signed by Bidder in the manner indicated in this bid document;
- c. Material inconsistencies in the information /documents submitted by the Bidder, affecting the Eligibility Criteria;
- d. Information not submitted in the formats specified in this bid document;
- e. Bid being conditional in nature;
- f. Bid not received by the Bid deadline;
- g. Bid having Conflict of Interest;
- h. Bidder delaying in submission of additional information or clarifications sought by MANIREDA as applicable;
- i. Bidder makes any misrepresentation.

Each Bid shall be checked for compliance with the submission requirements set forth in this bid document before the evaluation of Bidder's fulfilment of Eligibility Criteria is taken up.

12.3 Evaluation of bidder's fulfilment of eligibility criteria:

Evaluation of Bidder's eligibility will be carried out based on the information furnished by the Bidder as per the prescribed Formats and related documentary evidence in support of meeting the Eligibility Criteria. Non-availability of information and related documentary evidence for the satisfaction of Eligibility Criteria may cause the Bid to be non-responsive.

12.4 Evaluation of Technical Bid :

Detailed Technical evaluation criteria:

a) The Bids shall be evaluated on the basis of the application and the supporting documents submitted by them.

b) The evaluation would be Quality and Cost based. The Technical Proposal would be evaluated first and points would be allotted to each of the bidders as follows:

SL. No.	Field	Points
A	Experience of supply, installation & commissioning of minimum aggregate of 500 kWp Grid Connected Solar PV Power Project and at least one solar power plant having minimum capacity of 50 kWp during last three years.	60
B	Experience of supply, installation & commissioning of 100 kWp Grid Connected Solar PV Power Project at one site, with gross-metering facility, (commissioned at least six months prior to last date of submission of offer)	10
C	Financial capability - Average turnover more than 3 Crores in the last 3 years	10
D	Bidder Company registered in Manipur (Enclose copy of company registration in Manipur- if applicable)	20

Note: - Documents to be submitted in support of the above Criteria:-

1. For Experience of Projects installed & commissioned, a copy of the Completion certificate issued by the beneficiary should be enclosed.
3. CA certificate on letter head of CA regarding Average Turnover for last three years.
4. Copy of registration in Manipur- if applicable.

The minimum Score to be obtained to qualify technically should be at least 70 points otherwise the financial offer shall not be considered.

CHAPTER – V : GENERAL TERMS AND CONDITIONS:

12.0 No Claim or Compensation for Submission of Tender.

12.1 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.

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 Award of Contract/Work Order :

14.1 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/Departmental Tender Committee to undertake the work at the approved rate and on approval of the Chairman, MANIREDA.

15.0 Effective Date of Contract :

15.1 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.

16.0 Contract Price :

16.1 The total contract price and 5 years MPWC in full and complete set including SPV modules, Control electronics, Inverter, Energy meter/Net Meter, mechanical components, etc. should be quoted **o n l i n e** in Price Schedule/BOQ.

16.2 The income tax shall be deducted as applicable at the existing rate.

16.3 During the period of the contract, MANIREDA may order addition/deletion in quantities/capacities which the bidder shall comply. The adjustment in Contract Price shall be made at the same unit rate as per Price Schedule/BOQ.

17.0 Statutory Variations in Taxes and Duties:

17.1 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.

17.2 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.

18.0 Agreement:

18.1 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.

19.0 Inspection of the Factory and Tests:

- 19.1 MANIREDA reserves the right to inspect the manufacturer's works/factory to ascertain the capability/availability of necessary equipment & infrastructure required for the items offered before opening of the Financial Bid of the bidders.
- 19.2 MANIREDA shall have access and right to inspect the work or any part thereof at any stage.
- 19.3 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.
- 19.4 Successful bidder shall inform MANIREDA at least 25 days in advance of schedule dispatch.

20.0 Dispatch Instructions:

- 20.1 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.

21.0 Transit Insurance:

- 21.1 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.

22.0 After Sales Service and Availability of Spare Parts:

- 22.1 The Supplier shall depute authorized Service Engineer within 3 days from the date of the intimation of fault, and establish sufficient inventory of spares, well trained 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.

23.0 Completion Schedule:

- 23.1 The completion of project including delivery of goods at FOR destination in full as per the terms and conditions of the contract/order shall be completed within **12 (Twelve) months for 420 kWp** and **3 (Three) months for 40 kWp** from the date of issue of the Work Order whichever is earlier.

24.0 Guarantee/Warranty Period:

- 24.1 The manufacturer must provide guarantee which include servicing & replacement guarantee for parts and components (such as electronics, inverters, meters etc.) of grid connected rooftop 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.
- 24.2 The guarantee card to be supplied with the systems must be in original and contain the details of the system supplied as given in the Proforma - 6. The manufacturers can also provide additional information about the system and condition of guarantee as necessary.
- 24.3 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.

25.0 Assignment/Sub Letting/Pre Bidding Tie Up:

- 25.1 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.
- 25.2 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.
- 25.3 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 and terms of payment. However, the total responsibility of work will remain with the prime bidder.

26.0 Liquidated Damages for Delay in Completion:

- 26.1 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.
- 26.2 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 week of such delay, or part thereof, subject to maximum of 5% of the Total Contract Value.
- 26.3 The liquidated damages for delayed completion shall be recovered from the Supplier's Bill / Bank Guarantee deposited as Performance Guarantee.
- 26.4 Deductions/payment of liquidated damages shall in no way relieve the Supplier from his contractual responsibility to complete the works.

27.0 Cancellation of Order :

- 27.1 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.

28.0 Arbitration :

- 28.1 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.
- 28.2 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.
- 28.3 The venue of arbitration proceeding shall be within Jurisdiction of Court of Law at Imphal only.
- 29.4 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.

29.0 Force Majeure :

- 29.1 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.
- 29.2 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.
- 29.3 The above-mentioned force majeure conditions/clause shall also apply in the works of sub-contractors/suppliers of the contractor.
- 29.4 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.

CHAPTER – VI : TECHNICAL SPECIFICATIONS

The proposed projects shall be commissioned as per the technical specifications as given below: Grid connected Solar Power Plant. Any shortcomings will lead to cancelation of subsidy in full or part as decided by MANIREDA & Competent Authority's decision will be final and binding on the bidder.

GRID CONNECTED SOLAR POWER PLANT:

DEFINITION - A Grid Tied Solar Rooftop Photo Voltaic (SPV) power plant consists of SPV array, Module Mounting Structure, Grid Inverter/Power Conditioning Unit (PCU) consisting of Maximum Power Point Tracker (MPPT) and Controls & Protections, interconnect cables and switches. PV Array is mounted on a suitable structure. Grid tied SPV system is without battery and should be designed with necessary features to supplement the grid power during day time. Components and parts used in the SPV power plants including the PV modules, metallic structures, cables, junction box, switches, PCUs etc., should conform to the BIS or IEC or international specifications, wherever such specifications are available and applicable.

Solar PV system shall consist of following equipments/components:

- a) The Array capacity of the PV Power plant shall be minimum 200 kWp and shall be installed at the available space earmarked at project site.
- b) Grid interactive Inverter/Power Conditioning Unit with Remote Monitoring System. The power from PV array shall be feed into grid through grid connector string inverters each of capacity ranging from 50 KVA 3Ø 415 V 50Hz AC. The cumulative capacity of the inverter shall be minimum 200 KVA at unit pf.

- c) The Array Junction Boxes, Grid connected Inverters, Grid Interfacing LT Panel shall be installed in a suitable kiosk with proper security and protection arrangement with proper canopy made up with GI Sheet for protection from rain and direct sunlight.
- d) Outputs of the each grid tied string inverters shall be terminated to an Inverter LT Panel to be located closer to the inverter.
- e) The output of the Inverter LT **Panels** shall be connected with supply mains through a Suitable Interfacing Panel.
- f) An Export Import Energy Meter to be installed inside the Grid interfacing Panel or separate before connecting to the mains.
- g) The SPV power plant to be installed should be Robust, Economic, Efficient and Time tested.
- h) Earthing and lightening protections.
- i) IR/UV protected PVC Cables, pipes and accessories.

1.0 SOLAR PHOTOVOLTAIC MODULES:

Proposed PV Module must be manufactured in India. Each PV module used in this solar power project must use an RF identification tag. The information as per MNRE Guideline must be mentioned in the RFID used on each module (This can be inside or outside the laminate, but must be able to withstand harsh environmental condition).

2.0 Warranties:

a) Material Warranty:

- i. Material Warranty is defined as: The manufacturer should warrant the Solar Module(s) to be free from the defects and/or failures specified below for a period not less than five (05) years from the date of commissioning of the power plant.
- ii. Defects and/or failures due to manufacturing.
- iii. Defects and/or failures due to quality of materials
- iv. Non conformity to specifications due to faulty manufacturing and/or inspection processes.
If the solar Module(s) fails to conform to this warranty, the manufacturer will repair or replace the solar module(s), at the Owners sole option.

b) Performance Warranty:

The manufacturer should warrant the output of Solar Module(s) for at least 90% of its rated power after initial 10 years & 80% of its rated power after 25 years from the completion of trial run at site/date of final commissioning. The contractor shall collect the Warranty Certificate for performance of the modules from the manufacturer and submit the same to MANIREDA prior to delivery of the products to the respective sites.

If, Module(s) fail(s) to exhibit such power output in prescribed time span, the Contractor will bound to either deliver additional PV Module(s) to replace the missing power output with no change in area of site used or replace the PV Module(s) with no extra cost claimed at Owner's sole option.

Manufacturer of proposed PV modules must have the ISO 9001:2008 or ISO 14001 Certification for their manufacturing unit for their said manufacturing item.

Note: Only indigenously manufactured and ALMM MNRE listed PV modules should be used in Grid Connected Rooftop Solar PV Power Plants under this scheme.

Desired specification of the PV Module shall include but not limited to the following :

SI No	Item	Description
1.0	Certification	i) IEC 61215 or IS14286 ii) IEC61730 iii) IEC 61701 iv) PID test as per MNRE Spec
1.1	Test certificate issuing authority.	IEC/BIS Accredited Testing Laboratories or MNRE accredited test centers.
2.0	PV Cell	
2.1	Type	poly crystalline / mono-crystalline
3.0	PV Module	
3.1	Minimum capacity	335Wp at STC
3.2	Rating at STC	335 Wp, (72 cells) / 530 Wp minimum for mono-crystalline
3.3	Efficiency	minimum16%
3.4	Fill factor	Minimum 70%
3.5	Glass	
3.5.1	Thickness	3.2 mm
3.5.2	Type	High transmission, low iron, tampered & textured glass with anti reflective coating.
3.6	PV Module Junction Box	
3.6.1	Protection level	IP 65 or above
3.7	Bypass Diode	
3.7.1	System Voltage (Vsys)	1000 V dc
3.7.2	Number	3 numbers
3.8	Module Frame	
3.8.1	Type	Anodized aluminum frame

3.0 PV Array

Desired specification of the PV Array shall include but not limited to the following:

SI No	Item	Description
1.0	Nominal Capacity	200 kWp
2.0	PV Module interconnection connector	MC-4
3.0	PV Module interconnection cable and array cable	PV 1-F standard /NEC standard "USE-2 or RHW-2" type (double insulated)
4.0	PV array String Voltage	Compatible with the MPPT Channel of the inverter

4.0 PV Module Mounting Structure

During Structural design following points must be include but not limited to the following:

- (i) The Module Mounting structure must be made of MS as per IS Standard (latest edition) ISI Make.
- (ii) The contractor shall have to submit the drawing of PV Module mounting structure supported by Stadi-pro design to MANIREDA after placement of work order for necessary approval. Angle-channel structure shall only be considered.
- (iii) PV Array Structure may be multi-tier so that rear side of the PV Module structure should have suitable height to install the Inverters and Balance of systems of the Power Plant in case of separate control room not available .
- (iv) The foundation shall have to be designed considering the sites of installations. The legs of the structures shall be made with **hot dip GI angles/Channel/BIM** which shall be fixed with RCC foundation by base plate arrangement. The base plate arrangement shall be fixed and grouted in the PCC/RCC foundation columns made with cement concrete. **The minimum clearance between the lower edge of the modules and the developed ground level shall be 300 mm.** While making foundations design due consideration will be given to weight of module assembly, Module Mounting Structure, maximum wind speed of **160 km per hour.**
- (v) All structures including any metallic part thereof must be protected against any corrosion. The structures must also be compatible with the materials used in the module frame, fasteners, fixtures, nuts, bolts or any similar nature of metallic components whichever are required to complete the job.
- (vi) The array structure will be made of hot dip galvanized MS structure of minimum galvanizing thickness **85 micron**
- (vii) Structures will be supplied complete with all members to be compatible for allowing easy installation.
- (viii) The module mounting structure will have to be designed and fabricated with tilt angle for obtaining optimum generation from the PV power Plant as per site condition.
- (ix) The structures will be designed for simple mechanical and electrical installation. There will be no requirement of welding or complex machinery at the installation site.
- (x) The PV Array structure will support SPV modules at the mentioned orientation and absorb, transfer the mechanical loads to the ground or any suitable/ existing strength structure as deemed fit.
- (xi) Nuts and Bolts of Array structure:

Usage Location	Type of Nuts and Bolt
PV Module fixing nuts and Bolts with the PV Module structure and PV Module	Stainless steel
All other Nuts and Bolts of PV Module mounting Structure	MS chrome plated (GI)

- (xii) All fasteners, fixtures for supporting conduits Shall be made with stainless steel or MS Chrome plated .

5.0 PV Array Junction Box(AJB)

Array Junction Box (AJB) shall have to be used for termination of series strings connecting array with each inverter. The array Junction Box may be inbuilt with the Inverter or it may be a separate unit. There shall be minimum two or more Arrays Junction Boxes in case, the inverter is located away from PV Array. The desired specification of the PV Array Junction Box and accessories shall include but not limited to the following:

SI No	Item Description	Desired Data
1.0	Enclosure	
1.1	Degree of Protection	IP65 with UV Protected
1.2	Material	Polycarbonate (If AJB is a separate Unit and not Inbuilt in Inverter)
1.3	Withstanding voltage	1000V DC
1.4	Number of Strings entry	As may be required
2.0	Cable Entry and Exit	
2.1	Position	Bottom at cable entry and exit
2.2	Cable Entry and Exit connector type	MC 4 / Tyco Connector (PV Array String cable)
2.3	Cable gland	Earthing cable entry
3.0	Surge Protecting Device (SPD)	
3.1	Type	DC
3.3	Protection class	Type II
3.4	Rating (8/20)	25 kA
3.5	Number of set	As may be required as per string Design (minimum 1 set against each MPPT Chanel)
3.6	Voltage	1000 V (Y connection also be considered)
3.7	Standard	PV Standard
4.0	Fuse with fuse holder	
4.1	Position	Positive and negative terminal for each series string
4.2	Type	Glass fuse, for PV Use only
4.3	Rating	Current: Minimum 1.25 times the rated short circuit current of the string Voltage: Minimum 1000 V DC

SI No	Item Description	Desired Data
4.4	Standard	PV Standard
5.0	Earthing Provision	Terminal blocks will have to be provided for Earthing
6.0	Terminals, lugs and bus bar	Tinned copper

6.0 Grid Connected Inverter

The inverters shall be of ON Grid string inverter. The proposed 200 kWp grid connected solar PV power plant shall be connected with grid. As such, the inverters shall be compatible to operate with existing utility supply. The power from PV array shall be feed into grid through grid connected string inverters each of capacity ranging from 50 kVA 3Ø 415 V 50Hz AC. The cumulative capacity of the inverter shall be minimum 200 kVA at unity pf. However, all the inverter to be used for the project shall be of same capacity and of same manufacturer.

Desired specification of grid connected inverter shall include but not limited to the following:

Sl. No.	Operating Parameter	Desired specification
1.0	Type	Grid connected String Inverter
2.0	Usage	Specially used for PV system
3.0	Standards	
3.1	Efficiency Measurement	IEC 61683/ Equivalent BIS Std.
3.2	Environmental testing	IEC 60068-2 (1,2,14,30) / Equivalent BIS Std.
3.3	Interfacing with utility grid	IEC 61727
3.4	Islanding Prevention Measurement	IEC 62116
3.5	Type Test certificate issuing authority (for item no 3.1, 3.2, 3.3 and 3.4)	NABL/ IEC Accredited Testing Laboratories or MNRE approved test centers.
4.0	Input (DC)	
4.1	PV array connectivity capacity	10% more than the rated AC kVA (minimum)
4.2	MPPT Voltage range	Compatible with the array voltage
4.3	Number of MPPT Channel	1 no (Minimum) for each Inverter
5.0	Output (AC)	
5.1	Nominal AC Power output	Cumulative 200 kVA (each inverter ranging 50 kVA at unity p.f)
5.2	Number of Grid Ph	3Ø 400 V + N 50Hz ,
5.3	Adjustable AC voltage range	As per Grid Code
5.4	Frequency range	As per Grid Code
5.5	AC wave form	Pure Sine wave
5.6	THD	As per prevailing Grid code.
6.0	General Electrical data	
6.1	Efficiency	>97 %
6.2	Sleep mode consumption	Less than 10 W

Sl. No.	Operating Parameter	Desired specification
7.0	Protection	
7.1	DC Side	1. Reverse-polarity protection 2. Reverse current to PV array protection, over voltage, Under voltage protection 3. Over current
7.2	AC side	1. DC inject protection to grid 2. Over voltage and Undervoltage 3. Over current 4. Over and under grid frequency protection, 5. Anti Islanding protection
7.3	Isolation Switch	PV array Isolation switch (DC)
7.4	Ground fault detection device (RCD) which can detect changes in ground current. Rating shall be as suitable for inverter	To be provided for transformer less inverter.
8.0	Display	
8.1	Display type	LCD /LED Display
8.2	Display parameter	
8.2.1	DC	Voltage, Current, Power
8.2.2	On grid connected mode	Line status Grid voltage Grid frequency Export Power Cumulative Export Energy
9.0	Interface(Communication protocol)	Suitable port must be provided in the inverter for i) Port for Onsite upgrade of Software, ii) Port for Web based remote monitoring system
10.0	Web monitoring	Matched with the monitoring and data logging system
11.0	Mechanical Data	
11.1	Protection Class	IP 65 or higher
11.2	Operating ambient temperature	0 °C to 55 °C
11.3	Cooling	Natural / forced cooling

7.0 Web enable on line data logger and Remote Monitoring Unit:

Web enable data logging system may be an integrated part of the inverter or a separate unit. The data logger should have required transducer to monitor and record the required system parameters.

Web based Remote Monitoring system must be compatible with data logger. The system shall be provided **with suitable modem**. The other required accessories, hardware and compatible software shall have to be provided as an integrated part of the system to monitor the real time data (maximum 20 minutes delay) through web server. The Data logger shall continuously send data to MANIREDA/SPP/RTS/NCS & AIS/2022-23/5

the server. The system can be monitored from anywhere through internet without installing any special application software. The server shall be arranged by the contractor. **The rental server, IP address, Server charge (storage, access charge and other charges if any), Rental charge of data communication for remote monitoring system for a period of five(05) years** shall be within the contract value.

The Web based monitoring system should have the provision of graphical representation of the data shall include but not limited to the following:

Sl. No.	Operating Parameter	Desired specification
1.0	Input data	PV Power PV Energy
3.0	Output data	
3.1	Inverter	Export Power Export energy

All data shall be recorded chronologically date wise. The data file should be MS Excel/XML/or any readable form compatible and should have the facility of easy downloads

Inverter must be field proved in Indian environment and must have good track record for satisfactory operation of at least one and more year anywhere in India. Necessary field proved certificate and sales & service office in India require from original inverter manufacturer. Dealer/agent certificate not applicable for the criteria.

8.0 Inverter Interfacing panel/Inverter combiner panel

The output of the each string Inverter shall be terminated in an **Inverter LT Panel/Combiner panel** closer to the each inverter through 415V 4 pole MCB/MCCB at the output of the string inverter. The set of AC surge protecting device (SPD) shall be provided in this unit. The inverter LT Panel may be an integral part of Inverter or a separate unit. Or the desired components may partially inbuilt in the inverter in such case balance item shall be put into a separate Inverter LTpanel.

Desired specification of each **Inverter LT Panel** will include but not limited to the following:

SI No	Parameter	Desired Specification
1.0	Incoming MCB/MCCB	
1.1	Type	Upto 100A –MCB Above 100 A- MCCB
1.2	Standards	MCB : IEC -60898/IS8828 MCCB : IEC – 60957 /IS : 13947
1.3	Number	01(one) number
1.4	Type	4 pole
1.5	Rating	1.25 times of the rated current capacity of the inverter.
2.0	Surge protection device (SPD)	
2.1	Usage as declare by Manufacturer	For AC use only
2.2	Protection class	Type II
2.3	Number of set	01 Set
2.4	Rating	600V 20 kA(minimum)
3.0	Indicator	R,Y,B
4.0	Earthing Provision	Terminal Blocks will have to be provided for Earthing
5.0	Enclosure	

5.1	Degree of Protection	IP65 with UV Protected
5.2	Material	Polycarbonate or Metal (If Inverter LT Panel is a separate Unit and not Inbuilt in Inverter).
5.3	Withstanding voltage	1000V DC
5.4	Number of Strings entry	As may be required
5.5	Number of entry and exit	As may be required
6.0	Outgoing MCCB (Grid Side)	
6.1	Quantity	01 Number + 01 No. Spare
6.2	Type	4 pole (TPN)
6.3	Standards	MCCB : IEC – 60957 /IS : 13947
6.4	Rating	400A 415VAC 25 kA

9.0 **Grid interfacing LT Panel**

Output of each of the Inverter LT panel shall be terminated to a **Grid Interfacing LT Panel**. The Grid interfacing LT Panel shall be outdoor type having suitable door metal enclosure dust and vermin proof (nearer to the utility grid) shall be at least **IP 55**.

Desired specification of each **Grid interfacing LT Panel** shall include but not limited to the following:

SI No	Parameter	Desired Specification
1.0	MCB/MCCB/Switch fuse Unit	
1.1	Type	Upto 100A – MCB fault Current 16 kA Above 100 A- MCCB Fault Current 16 kA
1.2	Standards	MCB : IEC -60898/IS8828 MCCB : IEC – 60957 /IS : 13947
1.3	Quantity	Minimum 01(one) number against each String Inverter + 01 no. Spare
1.4	Type	4 pole
1.5	Rating	400A ,415V ,20kA or 1.25 times of the rated current capacity of the output of all inverter.

SI No	Parameter	Desired Specification
3.0	Surge protection device (SPD)	
3.1	Position	Grid side
3.2	Usage as declared by Manufacturer	For AC use only
3.3	Protection class	Type II
3.4	Number of set	01 Set
3.5	Rating	600 V 20 kA (minimum)
4.0	Terminal block	

4.1	Type	'Elmex' / 'Connetwell' make Disconnecting type 1100V grade terminal block for shorting. Jam nut should be provided with shorting link. 20% spare terminals are to be provided.
4.2	Connectivity	All the cables shall be connected with equipment/switch through terminalblock
4.3	Quantity	15% spare terminals are to be provided.
5.0	Bus Bar	
5.1	Material	Tinned Aluminium
5.2	Type	TPN
5.3	Rating	600A
5.4.	Position	Incoming and Outgoing Bus
6.0	Earthing Provision	Terminal Blocks will have to be provided for Earthing.The body of the Grid interfacing panel must be earthed.

The **Grid Interfacing LT Panel** is floor mounted type. The Panel must be weather proof and dust proof made of sheet steel having 2-3 mm thickness. However 2 mm thick cold rolled sheet steel with powder coating is also acceptable. The top of the Panel must be slanted. There shall be sufficient reinforcement to provide level surfaces, resistance to vibrations and rigidity during transportation and installation. The panel shall be provided with hinged doors at front with locking arrangement. All doors, removable covers and plates shall be gasketed all around. All gasketed surfaces shall be smooth, straight and reinforced if necessary to minimize distortion and to make a tight seal. Ventilating louvers, if provided, shall have screen and filters. All metal surfaces shall be subjected to treatment for anticorrosion protection. The Panel shall provide with a degree of protection of not less than IP-55

11.0 **Export Import Energy Meter (For GROSS Connectivity) :**

3 phase Class -1 Accuracy – 0.2 Export Import Energy Meter with CTs of required rating shall be provided. The energy meter also provide data of Voltage , current, p.f. The Meter and CT to be supplied must be tested. The export Import Energy meter shall be installed at the separate housing within the **Grid Interfacing Panel** as separate unit.

12.0 **Cables & Wires:**

a) **The Specification of wiring material of PV Power plant shall include but not limited to the following:**

SI No	Item	Description
A	DC Cable	
1.1	Conductor	Tinned annealed stranded copper according to IEC 60228 class 5
1.2	Standard	PV-1F / 2 PfG 1169/08.2007 / VDE Standard E PV 01:2008-02 /Equivalent
B	AC Cable	
2.1	Rated Voltage	1.1kV
2.2	Construction	
2.2.1	Type	Armored or unarmored as per requirement
2.2.2	Insulation	XLPE
2.2.3	Standard	IS 7098-Part-I
C	PVC Conduit tees, bends etc (Hard & flexible)	

3.0	Standard	ASTM D 1785 u PVC
3.1	Type	UV stabilized , temperatures, Shock proof Chemical resistant
D	GI Pipe	
2.0	Make	Jindal/Bansal or equivalent (<i>as per acceptability of MANIREDA</i>)

b) Sizing and procedure and guideline of Cable laying

- i) Buried AC underground cables must be armored.
- ii) Conductor size of cables and wires shall be selected based on efficient design criteria. The wiring size of shall be designed such that maximum voltage drop at full power.

From the PV Array to Inverter(s) should be less than 2%.

From Inverter to AC Grid interfacing panel should be less than 3%.

- iii) Cable terminations shall be made with suitable cable lugs & sockets etc, crimped properly and cables shall be provided with dry type compression glands wherever they enter junction boxes/ panels/ enclosures at the entry & exit point of the cubicles. The panels bottoms should be properly sealed to prevent entry of snakes/lizard etc. inside the panel. All cables shall be adequately supported. Outside of the terminals / panels / enclosures, shall be protected by conduits. Cables and wire connections shall be soldered, crimp-on type or thimble or bottle type.
- iv) Only terminal cable joints shall be accepted. Cable joint to join two cable ends shall not be accepted.
- v) The cable must be laid through PVC conduit or GI pipe on roof and indoor. In case of using metallic pipe as conduit proper grounding of the conduit must be done.
- vi) Cables are to be laid over as per IE rule.
- vii) All the unarmored cable and control cable if need to be drawn through underground, adequate size PVC conduit is to be used for drawl of such cable all along. However, the conduits also need to be laid inside class – B, GI pipes of requisite diameter under road crossings, drains, sewerage lines, entry or exit points of the buildings or where there are chances of mechanical damage.
- viii) All cable/wires/control cable shall be marked with good quality letter and number ferrules of proper sizes so that the cables can be identified easily.
- ix) All cable shall be suitable marked or coded for easy identification. Cables and wires shall confirm to the relevant standards suppliers to specify the specification.
- x) Cable tray (metallic preferably aluminum) of suitable size must be used for lying of cable on the floor or Roof.
- xi) All fasteners will be made of Stainless steel or MS chrome plated
- xii) Minimum two number loop must be provided at the start and end each span of cable laying and before termination.
- xiii) Type of cable to be used:

SI No	Location	Type of AC Cable
01.	From PV Array to PV Array Junction Box	Unarmoured DC copper Cable
02.	From PV Array Junction Box to String Inverter	Unarmoured DC copper Cable

03.	From String Inverter to Inverter LT panel	Unarmoured, XLPE Insulated Aluminium Cable	AC
04.	From Inverter LT panel to Grid Interfacing Panel	Armoured, XLPE Insulated Cable 4 or 3.5 core as per design	AC Aluminium
05.	From Grid Interfacing Panel to Point of Common Coupling	Armoured, XLPE Insulated Aluminium Cable 3.5 core	AC

13.0 **Equipment, Array structure Earthing:**

- i. Equipment grounding (Earthing) will connect all non-current carrying metal receptacles, electrical boxes, appliance frames, chassis and PV panel mounting structures in one long run. The grounding wire should not be switched, fused or interrupted.
- ii. **Earthing Pit with Pipe Electrode:** Earthing with 50 mm dia. GI pipe 3.5 mm thick x 3Mts (ISI marked) long to be filled with bitumen partly under the ground level and partly above ground level driven to an average depth of 3.5 Mts. below the ground level & restoring surface duly rammed.
- iii. Earth busbar of galvanized (Hot Dip) MS flat 25 mm x 3 mm on wall having clearance of 6 mm from wall including providing drilled holes on the busbar complete with GI bolts, nuts, washers, etc. as required.
- iv. Connecting the equipments to earth busbar including S & F GI (Hot Dip) wire of size as below on wall/floor with staples buried inside wall/floor as required and making connection to equipments with bolts, nuts, washers, cable lugs etc. as required and mending good damages Solid GI wire of 8SWG.
- v. Each Array Structure row must be connected to the earth minimum two separate point with S&F 25 mm x 3 mm galvanized (Hot Dip) MS flat on wall/floor with GI saddles as required and connection to equipments incl. drilling holes, with bolts, nuts, washers etc.
- vi. The complete earthing system will be electrically connected to provide return to earth from all equipment independent of mechanical connection.
- vii. Test point will be provided for earth pits.
- viii. Earthing system design should be as per the standard practices.
- ix. The Code of Practice Earthing will be IS 3043 (latest edition)
- x. Necessary provision will be made for bolted isolating joints of each earthing pit for periodic checking of earth resistance.
- xi. Minimum Eight (06) numbers of earth pit needs to be provided. Minimum required gap shall be provided in between earth pits as per relevant standard.
- xii. Masonry enclosure with the earth pit of size not less than 500 mm X 500 mm X 400 mm (depth) complete with cemented brick work (1:4) of minimum 150 mm width duly plastered with cement mortar (inside) shall be provided. Hinged inspection covers of size not less than 200 mm X 200 mm with locking arrangement shall be provided. Suitable handle shall be provided on the cover by means of welding a rod on top of the cover for future maintenance.
- xiii. Earthing system must be interconnected through GI Strip 25 mm x 3 mm to arrive equipotential bonding.

14.0 **Signage:**

Project information Signage : The Signage shall be made up of MS Sheet of minimum 1.5 to 2 mm thick of minimum size 5'x 4'. The Signage shall elaborate detail of the project. The matter shall be

provided by MANIREDA. The font size on the signage has to be big enough so that everyone can read it easily. This signage will be outdoor type. The Signage shall be installed on MS structure made up of MS channel, angles of suitable height as per direction of Engineer –in-Charge. The structure and the Project Name Plate shall be painted with primer and anti-corrosive paint or vinyl board pasted on MS sheet. The Signage shall be installed a prominent place of the project area.

Schematic Diagram:

Schematic Diagram of Installation must be provided on a display board of minimum size 3’x 2’ made up of metallic base. The schematic diagram must be fixed up at any prominent place of installation.

Safety Signage: Safety Signage must be provided indicating the level and type of voltage and symbols as per IE Rule at different position as may be required.

15.0 Fire extinguisher Fire Buckets and Holding stand

Fire Bucket: Fire Bucket of minimum quantity Eight (06) numbers and Fire Bucket Stand of minimum holding capacity quantity four (03) shall be provided at Array field. fire Bucket holding stand shall have the arrangement The Fire Bucket Stand shall be installed under proper area. The minimum technical specification is a follows:

BIS Specification	IS 2546 (with latest amendments)
Fire Bucket Capacity	9 liters
Fire Bucket Body Material	Mild Steel Sheet

Fire Extinguisher: Four (04) numbers of minimum 4 kg ABC type dry power portable fire extinguishers shall be provided at each location. Standard of Fire Extinguisher IS 13849 (with latest amendments)

Fire Buckets and Fire Extinguishers holding stand with shade shall have to provided.

Technical Specification of Oil Type Outdoor Transformer, Switch Gear /VCB (High Voltage 11kV Switch Gear Equipments)

3-Φ, 50Hz, 50 c/s, oil- immersed, naturally cooled (ONAN), core type, double wound with aluminium conductor, having +2.5%, +5% taps on HV to vary HV Voltage., 40°/45°C temperature rise in oil and winding respectively suitable capacity shall be provided to step up voltage from 3-Φ, Grid tied Solar Inverter output to 11 kV voltage level for feeding the generated power to the 11 kV, 50Hz switchyard.

The transformer will be connected to the outputs of the grid interfacing panel and the HV sides will be connected to the 11KV, 50Hz line through VCB, Isolator etc. The transformer will be Oil Type and placed outside of the control room.

The transformer shall be suitable for out door installation with 3 phase 50 Hz in which they neutralise effectively earthed as per requirement of the design and they should be suitable for service under fluctuations in supply voltage matching with Grid Voltage Profile of the site. HT switch gear equipments (VCB, Dis-connector along with Metering Arrangement) / 11kV, 630A, 20kA, Outdoor Kiosk With Side Cable Box for Grid Connected SPV Power Plant as per requirement and scope of the supplier .

17.0 PV Array Cleaning Arrangement

Necessary equipment is to be provided at site to facilitate easy cleaning and abrasion of the PV Array. Water pipe line must be passed through each row of PV Array. Adequate numbers of outlet tap with MANIREDA/SPP/RTS/NCS & AIS/2022-23/5

suitable platform and Post are to be laid down covering total array field for cleaning of the PV Module. Minimum one numbers post along with tap against each row of PV Array shall be provided for each 200 kWp PV Array. The plumbing equipment must be of UPVC of standard ASTM D 1785 or GI Pipe with necessary specials & fixtures as per suitability of site.

The water line is to be connected to the suitable nearest point of water source provided by the building. The plumbing equipments must be of UPVC of standard ASTM D 1785 or GI pipe as per suitability of site condition.

18.0 Drawings to be furnished by Bidder after Award of Contract :

The Contractor shall furnish the following drawings Award/Intent and obtain approval.

- a) General arrangement and dimensioned layout.
- b) Schematic drawing showing the requirement of SPV panel, Power conditioning Unit(s)/ inverter, Junction Boxes, AC and DC Distribution Boards, meters etc.
- c) Structural drawing along with foundation details for the structure.
- d) Itemized bill of material for complete SPV plant covering all the components and associated accessories.
- e) Layout of Solar Power Array.
- f) Shadow analysis of the roof.

CHAPTER-VII : FIVE YEARS MAINTENANCE & PERFORMANCE WARRANTY CONTRACT (MPWC)

1.0 Comprehensive Maintenance during defect liability period :

All the equipments to be installed for commissioning of each of the grid connected solar power plant and the power plant in whole shall be under Comprehensive Maintenance Contract within the scope of the tender for 5(five) years from the date of commissioning. The equipments or components, or any part thereof, so found defective during Comprehensive Maintenance Contract period will be forthwith repaired or replaced within the scope of warrantee obligation to the satisfaction of the Purchaser. The maintenance of grid connected solar rooftop power plant include routine & periodic maintenance, overhauling, breakdown maintenance, and repairing or replacement of defective PV modules, invertors, and other components, providing of consumables. The Down-Time of PV system should not be more than 96 hours (04 days).

1.1 Routine maintenance:

In order to carry out routine maintenance of the power plant, the contractor will provide all labour, material, consumables etc. within the scope of maintenance service. Recommended tasks under the scope of routine maintenance will include but not limited to the followings:

SI No.	Type of Routine Maintenance
01	Cleaning of PV modules once in a month
02	Checking and tightening of all electrical connections
03	Checking and tightening of mechanical fittings
04	Checking and restoring of earthing system
05	Dusting and cleaning of Inverter and other electrical equipments
06	Routine maintenance as recommended by the Original Equipment Manufacturer (OEM)

1.2 Breakdown maintenance:

Breakdown maintenance will include but not limited to the followings:

- i) Breakdown maintenance will mean the maintenance activity including repairs and replacement of any component or equipment of the power plant, which is required to be carried out as a result of any sudden failure/breakdown of that particular component or equipment while the plant is running.
- ii) The contractor will be responsible to carry out breakdown maintenance of the power plant and will provide the required manpower, materials, consumables, components or equipment etc. for breakdown maintenance.
- iii) The contractor will undertake necessary maintenance/ troubleshooting work of the grid connected solar rooftop power plants. Down time will not be more than 04 (four) working days from time of occurrence or reporting. However, if the breakdown is not repairable within 4 (four working) days due to some specific reason, the contractor must seek extension of time by giving sufficient acceptable reasons within three working days of the occurrence of the fault. In such case, the contractor will also specify the specific date within which the fault will be restored and the system will be put in operation again. However, the final decision taken by the Purchaser considering all such reason will be binding for the contract.
- iv) Each and every complaint communicated by any means either from Purchase or User, the contractor will acknowledge the complaint by providing specific complaint registration number in order to track the response of the complaint

1.3 Capital Maintenance:

Capital Maintenance shall mean the major overhaul of any component or equipment of the power plant which is not covered by routine, preventive and breakdown maintenance which may become necessary on account of excessive wear & tear, aging, which needs repair/replacement. The capital maintenance of power plant and all civil structures shall normally be planned to be carried out on an annual basis. For this purpose a joint inspection by the Contractor and MANIREDA shall be carried out of all the major components of the power plant, about two months in advance of the annual maintenance period, in order to ascertain as to which components of the power plant require capital maintenance. In this regard the decision of MANIREDA will be final and binding.

However, if the condition of any plant component warrants its capital maintenance at any other time, a joint inspection of MANIREDA and supplier shall be carried out immediately on occurrence of such situation and capital maintenance shall be carried out by arranging the shutdown of the plant/part of the plant, if required, in consultation with concerned authorities. The decision of MANIREDA shall be final and binding to the contractor.

The capital maintenance also includes painting of mechanical & civil structures etc.. Adequate measures should be taken for prevention of wear and tear of the machines. Solar PV Power System is to be designed to operate with a minimum of maintenance. The scope of support service provides preventive maintenance as & when necessary within the contract period and break down maintenance in the event of malfunctions, which prevent the operation of the power system or part of it within the stipulated time period & free replacement of spares required for maintenance. The contractor will provide Spare parts & Measuring Instruments. The contractor shall submit the detailed schedule for routine and preventive maintenance before final commissioning of the plant. The contractor shall also submit Detailed Report to MANIREDA for any capital or breakdown maintenance mentioning the cause of breakdown, actions taken to resolve that issue and preventive measures taken to avoid failure/damage/loss of generation due to similar incidents/accidents in future etc. within 07 (seven) days from the date of recovery.

1.4 Maintenance Report

Maintenance register must be maintained at site. Quarterly Maintenance Report comprising of Monthly Generation Data for that particular quarter, period of grid outage and any other required details for each location as per approved format must be submitted to MANIREDA with certification of MANIREDA Beneficiary in original by the contractor within 30 days of the following month. Failing of which maintenance service will be deemed to be not attended. The payment shall be made on yearly basis on submission of bills in triplicate to MANIREDA along with a copy of the maintenance report of the claimed year period which will already to be submitted quarterly.

7. Proforma – 1

Forwarding Letter

NIB No.: MANIREDA/SPP/RTS/NCS & AIS/2022-23/5

To,

The Director
Manipur Renewable Energy Development Agency (MANIREDA),
2nd Floor, South Block, Secured Office Complex, AT Line, Near Imphal Hotel,
Imphal - 795001.

Sub: Offer in Response to Notice Inviting Bid No. MANIREDA/SPP/RTS/NCS & AIS/2022-23/5 for;

- i) Design, manufacture, supply, installation and commissioning including integration to Grid of 420 (200+200+20) kWp Grid connected Solar Power Plant and 5 years Maintenance and Performance Warranty Contract (MPWC) at New Civil Secretariat Buildings (North Block, South Block & Minister's Block, Imphal East District, Manipur.

&

- ii) Design, manufacture, supply, installation and commissioning including integration to Grid of 40 kWp Grid connected Solar Power Plant and 5 years Maintenance and Performance Warranty Contract (MPWC) at All India Services (AIS) Accommodation Building at 2nd M.R, Imphal East District, Manipur.

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 sealed envelopes duly marked as indicated below:

(Technical Proposal): Submitted in original

The Financial Proposal is submitted online in e-tender

We also confirm that:

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

Authorisation Letter for attending Opening of Bid & Signing of Bid Document

NIB No.: MANIREDA/SPP/RTS/NCS & AIS/2022-23/5

Date:.....

To,

The Director
Manipur Renewable Energy Development Agency (MANIREDA),
2nd Floor, South Block, Secured Office Complex, AT Line, Near Hotel Imphal,
Imphal-795001.

Sub: Authorisation Letter for attending Pre-Bid Meeting, Bid Opening & Signing Bid Document.

I hereby authorize (Name & Designation)
to attend the **Pre - Bid Meeting , Bid Opening & signing of the Bid Document** (*tick
wherever applicable or tick both, if same person is to attend*) 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 :

Company Seal

(Signature of Authorized Signatory)

Name :

Designation :

:

Yours faithfully,

(Signature of Authorized Signatory)

Name :

Designation :

Note:

- 1. To be submitted by bidders on official letter head of the company.

9. Proforma – 3

Information about the Bidding Firm

NIB No.: MANIREDA/SPP/RTS/NCS & AIS/2022-23/5

Date:.....

SI.	Particulars			
1.	Name of the Bidder			
2.	Address of Bidder with Telephone, Fax, email			
3.	Address of the Registered Office			
4.	Name & Designation of Authorized Signatory for Correspondence			
5.	Nature of Firm (Proprietorship/Partnership /Pvt. Ltd./Public Ltd. Co./Public Sector)			
6.	Permanent Account Number (PAN)			
7.	Firm's Registration Number			
8.	EPF Registration No. (if applicable)			
9.	GST Registration Number			
10.	Specify the Item Originally Manufactured			
11.	Year of Starting of Manufacturing/ Assembling of PV Component(s)			
12.	Installed Capacity for Solar Products/ Components/Plant			
13.	Total Production and Sale of PV Products During the Last Three Years (in Rupees)	2019-20	Production	Sales
		2020-21		
		2021-22		
14.	Name of Material and Model Type Offered			
15.	Name of Manufacturer of SPPs with Full Address			
	1.	SPV SPPs		
	2.	PV Module		
	3.	Control Electronics/Inverter/PCU		
16.	Particulars of Earnest Money			
17.	Name of the Test Center where the testing of Components SPP has been performed			
18.	Test Report No. of components SPP mentioning date of test			
19.	Place where Materials will be Manufactured			
20.	Place where Materials will be Available for Inspection			
21.	Whether the Bidder has submitted details with regard to supplies made to important organizations.			
22.	Details of any existing service network in Manipur (Name & address of service centre)			
23.	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/RTS/NCS & AIS/2022-23/5

Date:.....

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

Sl. No.	Name of Agency/ Organization	Purchase Order No., Date & Ordered Qty.	Name of Model	Delivery Schedule

Yours faithfully,

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

Note:

- (a) Attach Photocopies of Purchase Orders
 - (b) 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/RTS/NCS & AIS/2022-23/5

Date:.....

To,

The Director
Manipur Renewable Energy Development Agency (MANIREDA),
2nd Floor, South Block, Secured Office Complex, AT Line, Near Imphal Hotel,
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 Guarantee Card to be Supplied with Solar Power Plant
--

NIB No.: MANIREDA/SPP/RTS/NCS & AIS/2022-23/5

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	
2.	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	
	(f) Guarantee Valid Upto	
5.	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 Upto	
6.	Energy Meter/Net Meter	Particulars and its configuration i) To be approved by CEA, ii) Prior approval from MSPDCL and MANIREDA to be accorded
7.	Name, Designation, Address and Mobile Number of the Person to be Contacted for Claiming Guarantee Obligations	

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

13. Proforma – 7

Format for Submitting the PRICE SCHEDULE/FINANCIAL BID (To be uploaded ONLINE only) for :

i) Design, manufacture, supply, installation and commissioning including integration to Grid of 420 (200+200+20) kWp Grid connected Solar Power Plant and 5 years Maintenance and Performance Warranty Contract (MPWC) at New Civil Secretariat Buildings (North Block, South Block & Minister's Block, Imphal East District, Manipur.

&

ii) Design, manufacture, supply, installation and commissioning including integration to Grid of 40 kWp Grid connected Solar Power Plant and 5 years Maintenance and Performance Warranty Contract (MPWC) at All India Services (AIS) Accommodation Building at 2nd M.R, Imphal East District, Manipur.

NIB No.: MANIREDA/SPP/RTS/NCS & AIS/2022-23/5

Date :

To,

The Director
Manipur Renewable Energy Development Agency (MANIREDA),
2nd Floor, South Block, Secured Office Complex, AT Line, Near Imphal Hotel,
Imphal-795001.

Price Schedule

UPLOADED ON www.manipur-tenders.gov.in

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

Yours faithfully,
(Signature of Authorized Signatory)

Name:
Designation:
Company Seal:

14. Proforma-8
(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),
2nd Floor, South Block, Secured Office Complex, AT Line, Near Imphal Hotel,
Imphal-795001.

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).

8. 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/testing
 - 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.

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

10. 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.

15. Proforma-9

MATERIALS INSPECTION CLEARANCE CERTIFICATE (MICC)
--

1. Name of the Work:

i) Design, manufacture, supply, installation and commissioning including integration to Grid of 420 (200+200+20) kWp Grid connected Solar Power Plant and 5 years Maintenance and Performance Warranty Contract (MPWC) at New Civil Secretariat Buildings (North Block, South Block & Minister's Block, Imphal East District, Manipur.

&

ii) Design, manufacture, supply, installation and commissioning including integration to Grid of 40 kWp Grid connected Solar Power Plant and 5 years Maintenance and Performance Warranty Contract (MPWC) at All India Services (AIS) Accommodation Building at 2nd M.R, Imphal East District, Manipur. 2. Name of Worksite/Location: New Civil Secretariat Building, Chingmeirong and All India Services (AIS) Accommodation Building at 2nd M.R , Imphal East, Manipur.

2. Name of the Firm/Contractor: :

3. Work Order No.: dated

4. Shipment No.

5. Date shipped:

6. Shipped From

7. 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)	Charge controlling unit							
(b)	ACDB,DCDB							
4.(a)	Cable & Wire							
(b)	Earthing system, Lightning arrester							
(c)	Exhaust Fan, Fire Extinguishers, Sand Buckets, Sign Board.							
5.(a)	Manual							
(b)	Others if any							

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

9. Inspected on:and jointly by MANIREDA officials and representative of M/sand found okay.

Date:

Signature of authorized MANIREDA representative

Name:

Designation:

16. Proforma – 10

COMPLETION CERTIFICATE (Solar Power Plant)

1. Name of the Work:

(i) Design, manufacture, supply, installation and commissioning including integration to Grid of 420 (200+200+20) kWp Grid connected Solar Power Plant and 5 years Maintenance and Performance Warranty Contract (MPWC) at New Civil Secretariat Buildings (North Block, South Block & Minister's Block, Imphal East District, Manipur.

&

(ii) Design, manufacture, supply, installation and commissioning including integration to Grid of 40 kWp Grid connected Solar Power Plant and 5 years Maintenance and Performance Warranty Contract (MPWC) at All India Services (AIS) Accommodation Building at 2nd M.R, Imphal East District, Manipur.

2. Name of Worksite/Location: : New Civil Secretariat Building, Chingmeirong and All India Services (AIS) Accommodation Building at 2nd M.R, Imphal East, Manipur.

3. Name of the Firm/Contractor :

4. Work Order No.: dated

5. Date of Completion of Installation:.....

6. Date of Commissioning of the Solar Power Plant:.....

SL. No.	Item Description	Qty	Make	Product Serial No.	Remarks if any
1	2	3	4	5	6
1.(a)	SPV Modules				
(b)	Module Mounting Structures				
(c)	Junction Box				
2.(a)	PCU/Inverter (30 kVA)				
(b)	Electronics				
3.(a)	Energy Meter/Net Meter				
(b)	ACDB/DCDB				
4.(a)	Cable & wire				
(b)	Earthing, Lightning arrestor				
(c)	Exhaust Fan, Fire Extinguishers, Sand Buckets, Solar Still, Sign Board.				
5.(a)	Manual				
(b)	Others if any				

7. Enclosed documents: 3 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.

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

Date of received and installed:

Signature of Scheme Officer, MANIREDA

Name:

Designation:

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

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

17. Proforma – 11
(For Firms bidding with Consortium Partners)

Format of Consortium Agreement to be entered amongst all Members of a bidding Consortium

[To be on Non Judicial Stamp paper of Rupees One Hundred only (INR 100/-) or appropriate value as per Stamp Act relevant to place of execution, duly signed on each page. Foreign entities submitting Bid are required to follow the applicable law in their country.]

FORM OF CONSORTIUM AGREEMENT BETWEEN

M/s., M/s., and M/s.
..... bidding for NIB No. MANIREDA/SPP/RTS/NCS & AIS/2022-23/5 for

(i) Design, manufacture, supply, installation and commissioning including integration to Grid of 420 (200+200+20) kWp Grid connected Solar Power Plant and 5 years Maintenance and Performance Warranty Contract (MPWC) at New Civil Secretariat Buildings (North Block, South Block & Minister's Block, Imphal East District, Manipur.

&

(ii) Design, manufacture, supply, installation and commissioning including integration to Grid of 40 kWp Grid connected Solar Power Plant and 5 years Maintenance and Performance Warranty Contract (MPWC) at All India Services (AIS) Accommodation Building at 2nd M.R, Imphal East District, Manipur. (hereinafter referred to as the "Tenders").

THIS CONSORTIUM AGREEMENT (hereinafter referred to as "Agreement") executed on this [date] day of [month], [year] between:

1. M/s., a company incorporated under the laws of and having its Registered Office at, (hereinafter called the "Member 1," which expression shall include its successors, executors and permitted assigns);
2. M/s., a company incorporated under the laws of and having its Registered Office at, (hereinafter called the "Member 2," which expression shall include its successors, executors and permitted assigns);
3. M/s., a company incorporated under the laws of and having its Registered Office at, (hereinafter called the "Member 3," which expression shall include its successors, executors and permitted assigns); for the purpose of submitting the Bid in response to the Tenders and in the event of selection as Selected Bidder to comply with the requirements as specified in the Tenders and ensure execution of the Tenders' Scope of Work as may be required to be entered into with Manipur Renewable Energy Development Agency (MANIREDA) having its office at Secured Office Complex, 2nd Floor, South Block, A.T. Line, Near Imphal Hotel, Imphal – 795001.

Member 1, Member 2 and Member 3 are hereinafter collectively referred to as the "Members" and individually as a "Member".

WHEREAS the Tenders stipulate that the Bidders qualifying on the strength of a Bidding Consortium shall submit a legally enforceable Consortium Agreement in a format specified in the Tender, whereby each Consortium Member undertakes to be liable for its Roles and Responsibilities, provide necessary guarantees and pay required fees as required as per the provisions of the Tender, as specified herein.

WHEREAS any capitalized term in this Agreement shall have the meaning ascribed to such term in the Tender document.

NOW THEREFORE, THIS INDENTURE WITNESSTH AS UNDER:

In consideration of the above premises and agreement all the Parties in this Consortium do hereby mutually agree as follows:

1. In consideration of the selection of the Consortium as the Bidding Consortium by MANIREDA, we the Members of the Consortium and Parties to the Consortium Agreement do hereby unequivocally agree that M/s. [Insert name of the Lead Member], shall act as the Lead Member for self and agent for and on behalf of M/s..... and M/s. [the names of all the other Members of the Consortium to be filled in here].
2. The Lead Member is hereby authorized by the Members of Consortium to the Consortium Agreement to bind the Consortium and receive instructions for and on behalf of all Members. The Roles and Responsibilities of all other members shall mentioned be as per the Annexure to this Agreement.
3. The Lead Member shall be liable and responsible for ensuring the individual and collective commitment of each of the Members of the Consortium in discharging all their respective Roles and Responsibilities. Each Consortium Member further undertakes to be individually liable for the performance of its part of the Roles and Responsibilities without in any way limiting the scope of collective liability envisaged in this Agreement in order to meet the requirements and obligations of the Tender.
4. Subject to the terms of this Agreement, the share of each Member of the Consortium in the issued equity share capital of the Project Company is/shall be in the following proportion:

Name	Percentage
Member 1	---
Member 2	---
Member 3	---
Total	100%

5. In case of any breach of any of the commitment as specified under this Agreement by any of the Consortium Members, the Lead Members of the Consortium shall be liable to meet the obligations under the Tender.
6. Except as specified in the Agreement, it is agreed that sharing of responsibilities as aforesaid and obligations thereto shall not in any way be a limitation of responsibility of the Lead Member under these presents.

7. This Consortium Agreement shall be construed and interpreted in accordance with the Laws of India and Courts at Imphal alone shall have the exclusive jurisdiction in all matters relating thereto and arising there under.
8. It is hereby agreed that the Lead Consortium Member shall furnish the Bid Security, as stipulated in the Tender, on behalf of the Bidding Consortium.
9. It is hereby agreed that in case of selection of Bidding Consortium as the Project Implementing Consortium, the Parties to this Consortium Agreement do hereby agree that they shall furnish the Performance Guarantee and other commitments to MANIREDA as stipulated in the Tender. The Lead Member shall be responsible for ensuring the submission of the Performance Guarantee and other commitments on behalf of all the Consortium Members.
10. It is further expressly agreed that the Consortium Agreement shall be irrevocable and, for the Project Implementing Consortium, shall remain valid over the term of the Project, unless expressly agreed to the contrary by MANIREDA.
11. The Lead Member is authorized and shall be fully responsible for the accuracy and veracity of the representations and information submitted by the Consortium Members respectively from time to time in response to the Tender for the purposes of the Bid.
12. It is expressly understood and agreed between the Members of the Consortium and Parties that the responsibilities and obligations of each of the Members shall be as delineated as annexed hereto as Annexure forming integral part of this Agreement. It is further agreed by the Members that the above sharing of responsibilities and obligations shall not in any way be a limitation of joint and several responsibilities and liabilities of the Members, with regards to all matters relating to the execution of the Bid and implementation of the Project envisaged in the Tender.
13. It is hereby expressly agreed between the Parties to this Consortium Agreement that neither Member shall assign or delegate or subcontract its rights, duties or obligations under this Agreement except with prior written consent of MANIREDA.
14. This Consortium Agreement:
 - a. has been duly executed and delivered on behalf of each Member hereto and constitutes the legal, valid, binding and enforceable obligation of each such Member;
 - b. sets forth the entire understanding of the Parties hereto with respect to the subject matter hereof; and
 - c. may not be amended or modified except in writing signed by each of the Parties and with prior written consent of MANIREDA.

IN WITNESS WHEREOF, the Parties to the Consortium Agreement have, through MANIREDA, executed these presents and affixed common seals of their respective companies on the Day, Month and Year first mentioned above.

1. For M/s. (Member 1)
[Signature of Authorized Representative]

Name of Authorized Representative]

[Designation of Authorized Representative]

Witness 1:
[Signature of Witness 1]

Witness 2:
[Signature of Witness 2]

.....

.....

Name:
Designation:

Name:
Designation:

2. For M/s. (Member 2)
[Signature of Authorized Representative]

.....

Name of Authorized Representative]

[Designation of Authorized Representative]

Witness 1:
[Signature of Witness 1]

Witness 2:
[Signature of Witness 2]

.....

.....

Name:
Designation:

Name:
Designation:

Attested:
[Signature]

.....

(Notary Public)

Place:

Date:

Annexure to the Consortium Agreement

Role and Responsibility of each Member of the Consortium:

1. Roles and Responsibilities of the Member 1 (Lead Consortium Member):
2. Roles and Responsibilities of the Member 2
3. Roles and Responsibilities of the Member 3

18. 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/Page No.	To be done
1	Annexure-I	Details of Earnest Money (D.D from any nationalized bank and validity for at least 3 months 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 Company/Firm/Corporation registered in India.		Both uploading & hard copy
3	Annexure-III	Consortium Agreement in Non-Judicial Stamp Paper (if any Firm is applying with Consortium partners)		Both uploading & hard copy
4	Annexure-IV	Test Reports for the components of Grid connected Rooftop Solar Power Plant like PCU/Inverter, PV module, Energy Meter, ACDB, DCDB etc. from an approved/competent testing centres as per requirements under the JNNSM scheme of the MNRE, GOI.		Both uploading & hard copy
5	Annexure-VI	A copy of valid GST Registration Certificate		Both uploading & hard copy
7	Annexure-VII	A summarized sheet of cumulative experience of the bidder as per bid document should be enclosed.		Both uploading & hard copy
12	Annexure-XII	Overall Average Annual Turnover of the Company/Firm/Corporation in the last 3 financial years (A summarized sheet of turnover of last 3 Financial Years certified by registered CA)		Both uploading & hard copy
13	Annexure-XIII	Demand Draft for cost of bid document/Photocopy of Demand Draft		Both uploading & hard copy
14	Proforma – 1	Forwarding Letter		Both uploading & hard copy
15	Proforma – 2	Authority Letter for Attending Pre-Bid Meeting, Bid Opening Meeting and Signing Bid Document.		Both uploading & hard copy
16	Proforma – 3	Information about the Bidding Firm		Both uploading & hard copy
17	Proforma – 4	Details of Orders Received and Executed in Past Years		Both uploading & hard copy
18	Proforma – 5	No Deviation Certificate		Hard copy
19	Proforma-7	Price Bid		Only Uploading Online
20	Proforma-12	Consortium Agreement		Both uploading & hard copy

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.

..... End of the Bid Document