BID DOCUMENT

(NIB No. REIL/RE/2019-20/SPV/PP/100kWp to 500kWp /12 dated 07.03.2020)

FOR

RATE CONTRACT FOR DESIGN, MANUFACTURE, SUPPLY, ERECTION, TESTING & COMMISSIONING INCLUDING 5 YEARS COMPREHENSIVE WARRANTY MAINTENANCE RANGING FROM 100 KWP TO 500KWP UNDER GRID INTERACTIVE ROOFTOP SOLAR POWER PLANT OF MNRE PHASE-II AND THE SOLAR POWER POLICY OF THE STATE OF UTTARAKHAND

ISSUED BY

RAJASTHAN ELECTRONICS & INSTRUMENTS LTD.
(A "Mini Ratna" Central Public Sector Enterprise)
2, Kanakpura Industrial Area, Sirsi Road, JAIPUR – 302 034
T. No. 0141-2470531/2470908/2470363, Fax – 0141-2470139
Website: www.reiljp.com

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NOTICE INVITING BID
(NIB No. REIL/RE/2019-20/SPV/PP/100kWp to 500kWp /12 dated 07.03.2020)

Rajasthan Electronics & Instruments Limited (REIL), Jaipur invites sealed bids, from interested bidders for rate contract for Design, Manufacture, Supply, Erection, Testing & Commissioning including 5 Years comprehensive warranty maintenance of 100kWp to 500kWp under Grid Interactive Rooftop Solar Power Plant of MNRE Phase-II and the Solar Power Policy of the State of Uttarakhand in various places of state.
The Solar PV modules & Inverters for 100kWp to 500kWp will be supplied by REIL at site.

The bid shall comprise of technical bid and commercial Bid. The detailed scope of work, terms and conditions etc. are available with the Bid documents.

The bids must also be accompanied with Earnest Money of Rs. 2.50 Lacs (Rupees Two Lacs Fifty Thousand only) in form of crossed Demand Draft / FDR / Bank Guarantee in favour of "**Rajasthan Electronics & Instruments Limited, Payable at Jaipur".** The Bank Guarantee should be issued by any scheduled Bank and valid for 180 days.

The details for Bid are as follows.

S. No.	Item	Description
1	Last date for submission of Online Bid	21.03.2020 upto 5.00 PM
2	Tender Fee	**Rs. 1500/- in the form of DD in favour of "Rajasthan Electronics & Instruments Limited" payable at Jaipur**
3	Earnest Money	2.5 Lacs only in the form of DD/BG/FDR
4	Opening of technical Bid	23.03.2020 at 5.00 PM
5	Opening of Commercial Bid	To be informed later to successful bidders in the technical bid
6	Last date for submission of Hard copy of Technical Bid, Tender Fee & EMD	23.03.2020 upto 5.00 PM
7	Address for Submission of Bid, and Opening of Bids	**Dy. General Manager (MM),** **Rajasthan Electronics & Instruments Limited,** **2, Kanakpura Industrial Area, Sirsi Road, JAIPUR – 302 034**

REIL reserves the right to reject the whole or part of any or all bids received, without assigning any reason.

Dy. General Manager (MM)

SECTION-I

INSTRUCTION TO BIDDERS

1. This Tender document contains the Terms and Conditions, the Tender and the Schedule of contract. Each page of bid document should be read carefully Each page of Bidder submitting bid document should be duly signed, failing which the tender shall be liable for rejection. In the event of the space on the Schedule of contract / specifications of items/proforma being insufficient for the required purpose, additional pages may be added. Each such additional page must be numbered consecutively, bearing the Tender Number and be duly signed and stamped by the bidder. If any modification of the schedule is considered necessary, you should communicate the same by means of separate letter sent along with the Tender.

2. PROCEDURE FOR SUBMISSION OF TENDERS / BIDS:

I. The tender should be submitted in 'TWO BID' SYSTEM:-

1) PART-1 TECHNICAL BID:

Technical Bid along with tender documents (duly signed on each page) to be uploaded in the e-tender portal. Technical Bid to be opened by the REIL committee.

a. Board resolution/ Authorization letter for signing of the bid document from the bidder be submitted.
b. Prices / Costs of the items ***should not be*** indicated anywhere in the Technical Bid. This should be followed meticulously failing which the bid is liable to be rejected.
c. EMD of Rs. 2,50,000/- only be submitted with the bid in the form of Demand Draft/FDR/ Bank Guarantee valid for 180 from the submission of bid.

2) PART-II FINANCIAL BID:

Price Bid BOQ given with tender is to be uploaded strictly as per the format available with the tender failing which the offer is liable for rejection (renaming or changing format of BOQ sheet will not be accepted by the system).

The Technical Bid to be kept in a sealed envelope super-scribed with **"For Rate contract for Design, Manufacture, Supply, Erection, Testing & Commissioning including 5 Years comprehensive warranty maintenance ranging from 100kWp to 500kWp under Grid Interactive Rooftop Solar Power Plant of MNRE Phase-II and the Solar Power Policy of the State of Uttarakhand in various places of state".**

I. The cover should also be sealed and addressed to following address:

Dy. General Manager (MM),
Rajasthan Electronics & Instruments Ltd.,
2 Kanakpura Industrial Area, Sirsi Road, Jaipur- 302034.

II. Tenders submitted without the 'Two Bid' System procedure will be rejected.

II. E-Tendering Procedure:

The work shall be carried out through submission of online tenders only. No offer in physical form will be accepted and any such offer if received by REIL will be out rightly rejected. Tender documents can be downloaded from our website www.reiljp.com or website of CPPP www.eprocure.gov.in. Final bids are to be submitted on website www.eprocure.gov.in. Any changes modification in the tender enquiry will be intimated

through above websites only. Tenderer are therefore, requested to visit our Website regularly to keep themselves updated.

The bidder should have a valid Digital Signature certificate issued by any of the valid certifying Authorities to participate in the online tender.

The bids shall be uploaded in electronic form only through e-tendering system on website www.eprocure.gov.in

E-Procurement system does not allow submission of documents after due date of tender. Incomplete form or non-submission of required documents may results into rejection of your offer and no Communication shall be done for submission of documents.

3) OPENING OF TENDER:

The **Price/Financial bids** of the bidders whose technical bids are found technically suitable only will be opened later. **The decision of the evaluation committee on technical suitability shall be final.**

4) Capacity:

Bidder has to execute work of Design, Manufacture, Supply, Erection, Testing & Commissioning including 5 Years comprehensive warranty maintenance for atleast 100kWp under Grid Interactive Rooftop Solar Power Plant of MNRE Phase-II and the Solar Power Policy of the State of Uttarakhand in various places of state.

5) PRICES:

a. Prices/Financial bid are to be quoted in Indian Rupees and must be meaningful and measurable in the context.
b. Bidders should clearly specify whether prices quoted are inclusive of GST/duties/ statutory charges or such charges as extra. Where no specific mention GST or other duties quoted shall be deemed to be inclusive of such taxes / charges.
c. Price must be quoted in original sheet of BOQ failing which the same is liable to be rejected.
d. Allocation of work may be distributed on L1 price.

6) TENDER FEE

The tender must be accompanied by a sum of Rs. 1500/- (Rupee One Thousand Five Hundred only) as Tender Fee in the form of demand drafts failing which the tender shall be summarily rejected.

7) EARNEST MONEY DEPOSIT

1. The tender must be accompanied by a sum of Rs. 2,50,000/- (Rupee Two Lacs Fifty Thousand only) as Earnest Money deposit in the form of deposit receipts, pay orders, demand drafts or Bank Guarantee failing which the tender shall be summarily rejected. These forms of earnest money could be either of the Punjab National Bank or of any of the Nationalized Banks or by a scheduled bank.
2. Format of Bank Guarantee for EMD is attached as Annexure – I.
3. Bank Guarantee should be valid for a period 06 month from the date of bid submission.

1. If the bidder fails to submit/upload scanned copy of tender fee / Cost of tender document, earnest money through e-tendering mode then his tender will not be considered for opening even if hard copy of same is submitted by bidder in the office.

2. Hard copy in original of tender fee / Cost of tender document, earnest money is to be submitted otherwise bid will not be opened. No correspondence in this regard shall be made with the bidder after opening of Part-I of bid.

4. 'Price bid part-II' excel file (so called Part-II) must be submitted/ uploaded through e-tendering mode only. Hard copy of the price bid (Part-II) shall not be considered. If any bidder encloses hard copy of price bid then their bid shall be rejected.

8) Performance Bank Guarantee:

i. The contractor shall submit 5% of contract value within fifteen days from the date of issue of rate contract in the form of BG/FDR/DD for 66 months from award of rate contract.

SECTION-II

ELIGIBILITY CONDITIONS:

ELIGIBILITY CRITERIA GENERAL:

PRE-QUALIFYING REQUIREMENT (PQR) OF THE TENDER:

1. The bidder should be a Company / Firm / Corporation / LLP in India having experience in Installation & Commissioning of Solar Power Plants.

   OR

   The bidder should be a PV System Integrator possessing appropriate license issued by the Electrical Inspectorate of Govt. of Uttarakhand / Central Inspectorial Organization of Govt. of India / Other State Govt. and having experience in Installation & Commissioning of Solar Power Plants in MNRE supported Schemes / Programs/ SNA / PSU in India.

2. The Bidder should have installed & commissioned Off Grid / Grid Connected Solar PV Power Plant having total capacity of not less than 20 kWp in last two years which should have been commissioned prior to Techno-Commercial Bid opening date in any MNRE scheme / SNA / Govt. or Semi-Govt. Organization / PSU / SECI / DISCOM / Private organization. The list of project(s) commissioned prior to Techno-Commercial Bid opening date, along with a copy of the commissioning certificate and work order / contract / agreement from the client / owner shall be submitted in support of this PQR.

3. Minimum Annual Average Turnover (MAAT) of the bidder for best three out of last five financial years should be at least Rs. 10 Lakh.

4. All MSEs notified as per GFR 2017 clause no. 1.10.4 shall be exempted from payment of Tender Document Fee and Bid Security/ Earnest Money Deposit. For claiming this exemption, MSE must, along with their offer, provide proof of their being registered as MSE (indicating the terminal validity date of their registration) for the item tendered, with any agency mentioned in the notification of Ministry of MSME.

C) OTHER CONDITIONS:

a) **Responsibility for executing Contract**: The contractor is to be entirely responsible for the Execution of the contract in all respects in accordance with the terms and conditions as specified in the acceptance of tender.

b) The contractor shall not sublet transfer or assign the contract to any part thereof without the written permission of the General Manager (RE). In the event of the contractor contravening this condition, General Manager(RE) be entitled to place the contract elsewhere on the contractors account at his risk and the contractor shall be liable for any loss or damage, which the General Manager(RE), may sustain in consequence or arising out of such replacing of the contract.

c) **Document**: The bidder should have a valid **PAN / TAN /GST No. & other statutory document as applicable** and produce attested copies of such certificates along with the tender papers in Technical Bid, failing which the tender is liable to be rejected.

d) **Right to accept / reject**: REIL reserves the right to reject any or all tender without assigning any reason whatsoever. Also, the REIL authority reserves the right to **award** any or part or full contract to any successful agency at its discretion and this will be binding on the bidder.

e) The capacity of the SPV Power Plants shown in the tender can be increased or decreased to any extent depending upon the actual requirement.

f) **Assistance to contractor**: The contractor shall not be entitled for assistance either, in the procurement of raw materials required for the fulfillment of the contract or in the securing of transport facilities.

D. Electrical Contractor License:

- The work shall be carried out by the contractor, having valid Electrical Contractor License for carrying out installation work under the direct supervision of the persons holding valid certificates of competency issued by the Central / State Government.

- The successful BIDDER shall furnish the names and particulars of the certificate of competency of supervisor and workmen to be engaged for carrying out this work.

SECTION-III

GENERAL CONDITIONS OF CONTRACT

1. PROJECT COST:

1.1. The Project cost shall include all the costs related to mentioned Scope of Work. Bidder shall quote for the entire facilities on a "single responsibility" basis such that the total Bid Price covers all the obligations mentioned in the Bidding Documents in respect of Design, Supply, Erection, Testing and Commissioning including Warranty. The Bidder has to take all permits, approvals and licenses, Insurance etc., provide training and such other items and services required to complete the scope of work mentioned above.

1.2 The Project cost shall remain firm and fixed and shall be binding on the Successful Bidder till completion of work for payment of Incentive amount irrespective of his actual cost of execution of the project. No escalation will be granted on any reason whatsoever. The bidder shall not be entitled to claim any additional charges, even though it may be necessary to extend the completion period for any reasons whatsoever.

1.3 The Project cost shall be inclusive of all duties and insurance etc. except GST. GST shall be paid extra at actual as applicable at the time of supply against documentary evidences. The prices quoted by the firm shall be complete in all respect and no price variation /adjustment shall be payable by REIL.

2. INSURANCE

2.1 The Bidder shall be responsible and take an Insurance Policy for transit-cum-storage-cum-erection for all the materials to cover all risks and liabilities for supply of materials on site basis, storage of materials at site, erection, testing and commissioning.

2.2 The Bidder shall also take insurance for Third Party Liability covering loss of human life, engineers and workmen and also covering the risks of damage to the third party /material/equipment/properties during execution of the Contract. Before commencement of the work, the Bidder will ensure that all its employees and representatives are covered by suitable insurance against any damage, loss, injury or death arising out of the execution of the work or in carrying out the Contract. Liquidation, Death, Bankruptcy etc., shall be the responsibility of bidder.

4. WARRANTIES AND GUARANTEES

3.1 The Bidder shall warrant that the goods supplied under this contract are new, unused, of the most recent or latest technology and incorporate all recent improvements in design and materials. The bidder shall provide warrantee covering the rectification of any and all defects in the design of equipment, materials and workmanship including spare parts for a period of 5 years from the date of commissioning. Bidder shall provide Warranties and Guaranties as mentioned in Technical Specifications under Volume III of Bid Document

3.2 The successful bidder has to transfer all the Guarantees/ Warrantees of the different components to the REIL. The responsibility of operation of Warrantee and Guarantee clauses and Claims/ Settlement of issues arising out of said clauses shall be joint responsibility of the Successful bidder and project owner.

4. TYPE AND QUALITY OF MATERIALS AND WORKMANSHIP

4.1 The design, engineering, manufacture, supply, installation, testing and performance of the equipment shall be in accordance with latest appropriate IEC/ Indian Standards as detailed in the Technical specifications of the bid document. Where appropriate Indian Standards and Codes are not available, other suitable standards and codes as approved by the MNRE/REIL shall be used.

4.2 The specifications of the components should meet the technical specifications mentioned in Technical Specifications

4.3 Any supplies which have not been specifically mentioned in this Contract but which are necessary for the design, engineering, manufacture, supply & performance or completeness of the project shall be provided by the Bidder without any extra cost and within the time schedule for efficient and smooth operation and maintenance of the SPV plant.

5. METERING AND GRID CONNECTIVITY

Net Metering and grid connectivity of the roof top solar PV system under this scheme would be the responsibility of the Bidder in accordance with the prevailing guidelines of the concerned DISCOM/SERC/State Nodal Agency for Renewable Energy Projects and / or CEA (if available by the time of implementation).

6. OPERATION & MAINTENANCE (O & M) GUIDELINES TO BE MANDATORILY FOLLOWED BY BIDDERS

6.1 The bidder shall be responsible for all the required activities for successful operation and maintenance of the Rooftop Solar PV system for a period of 05 years from the date of commissioning of the plant for projects.

6.2 The bidder shall follow below mentioned guidelines. In addition, O & M practices shall be strictly followed as per requirement.

a) O&M of Solar Power Plant shall be compliant with grid requirements to achieve committed energy generation.
b) Deputation of qualified and experienced engineer/ technicians till the O&M period at project site.
c) Periodic cleaning of solar modules. The modules shall be cleaned with a periodic interval of 15 days or as and when required as per actual site conditions. It's the responsibility of the bidder to get the modules cleaned during O & M Period. Roof Top Owner is responsible for such obligation of bidder so as to achieve guaranteed CUF.
d) Periodic checks of the Modules, PCUs and BoS shall be carried out as a part of routine preventive and breakdown maintenance.
e) Immediate replacement of defective equipment as and when required.
f) Supply of all spares, consumables and fixtures as required. Such stock shall be maintained for all associated equipments and materials as per manufacturer's / supplier's recommendations.
g) All the testing instruments required for Testing, Commissioning and O&M for the healthy operation of the Plant shall be maintained by the Bidder. The testing equipments must be calibrated once in a year from NABL accredited labs and the certificate of calibration must be kept for reference as required.
h) If negligence/ mal-operation on part of the Bidder's operator results in failure of equipment, such equipment should be repaired/ replaced by the Bidder free of cost.
i) Co-ordination with Power Procurer for realization of bills. Metering date shall be recorded on the first business day of every month and reading shall be taken at 1200 Hrs. In parallel to remote monitoring, the daily meter reading to be taken at 1200 Hrs. In case of failure of automated system the person in charge present at site from Bidder's side shall take a Joint Meter Reading in presence of Power Procurer on daily basis and submit the JMR on 1st business day of month.

j) Online Performance Monitoring, controlling, troubleshooting, maintaining of logs & records. A maintenance record register is to be maintained by the operator with effect from Commissioning to record the daily generation, regular maintenance work carried out as well as any preventive and breakdown maintenance along with the date of maintenance, reasons for the breakdown, duration of the breakdown, steps taken to attend the breakdown, etc.

k) If any jobs covered in O&M Scope as per IFB are not carried out by the Bidder/ Bidders during the O&M period, the Engineer-In-Charge shall take appropriate action as deemed fit. REIL reserves the right to make surprise checks/ inspection visits at its own or through authorized representative to verify the O&M activities being carried out by the Bidder. Failure to adhere to above guidelines will result in penal action including debarring from participation in next tender.

7. METERING AND GRID CONNECTIVITY:

Net Metering and grid connectivity of the roof top solar PV system under this scheme would be the responsibility of the Bidder in accordance with the prevailing guidelines of the concerned DISCOM/SERC/State Nodal Agency for Renewable Energy Projects and / or CEA (if available by the time of implementation).

8. Progress Report

The bidder shall submit the progress report against approved PERT Chart on monthly basis to REIL in Prescribed Performa. REIL will have the right to depute it's representatives to ascertain the progress of contract at the premises of works of the bidder.

9. Submission of Project Completion Report (PCR)

The bidder shall submit the Project Completion Report (both in editable soft copy and signed hard copy) after commissioning of the project as per the Scope of IFB to REIL as per the Format to be provided by REIL. Non-submission of the report shall be considered as "Breach of Contract" and shall attract punitive actions as per the relevant provisions of the Contract including non-release of Incentive. However, the decision of Engineer - in - charge shall be final in this regard.

10. Submission of O & M Report (OMR)

The bidder shall submit the Monthly O&M Report mandatorily to REIL as per the Format enclosed to be provided by REIL. Non-submission of the report shall be considered as "Breach of Contract" and shall attract punitive actions as per the relevant provisions of the Contract including non-release of Incentive. However, the decision of Engineer - in - charge shall be final in this regard.

11. Project Inspection

All Projects will be monitored by UPCL/REIL and the projects will be inspected for quality at any time during commissioning or after the completion of the project either by officer(s) from UPCL/REIL or any agency/ experts designated / authorised by UPCL/REIL from time to time. UPCL/REIL shall depute a technical person(s) from its empanelled experts/ agencies updated from time to time for inspection. The cost of Inspection shall be borne by contractor only.

The projects shall be inspected at any time during commissioning or after the completion of the project(s) as follows:

12. APPLICABLE LAW

The Contract shall be interpreted in accordance with the laws of the Union of India and the competent courts at Jaipur, Rajasthan.

13. SETTLEMENT OF DISPUTE

If any dispute of any kind whatsoever arises between REIL and Bidder in connection with or arising out of the contract including without prejudice to the generality of the foregoing, any question regarding the existence, validity or termination, the parties shall seek to resolve any such dispute or difference by mutual consent.

If the parties fail to resolve, such a dispute or difference by mutual consent, within 30 days of its arising, then the dispute shall be referred by either party by giving notice to the other party in writing of its intention to refer to arbitration as hereafter provided regarding matter under dispute. No arbitration proceedings will commence unless such notice is given.

a) Any dispute submitted by a party to arbitration shall be heard by an arbitration panel comprising of three arbitrators, in accordance with the provisions set forth below:

b) REIL and the Bidder shall each appoint one arbitrator, and these two arbitrators shall jointly appoint a third arbitrator, who shall chair the arbitration panel. If the two arbitrators do not succeed in appointing a third arbitrator within Thirty (30) days after the later of the two arbitrators has been appointed, the third arbitrator shall, at the request of either party, be appointed by the Appointing Authority for third arbitrator which shall be the President, Institution of Engineers.

c) If one party fails to appoint its arbitrator within thirty (30) days after the other party has named its arbitrator, the party which has named an arbitrator may request the Appointing Authority to appoint the second arbitrator.

d) If for any reason an arbitrator is unable to perform its function for a period of 45 days or more, the mandate of the Arbitrator shall terminate in accordance with the provisions of applicable laws as mentioned in Clause 18 (Governing Law) and a substitute shall be appointed in the same manner as the original arbitrator.

e) Arbitration proceedings shall be conducted with The Arbitration and Conciliation Act, 1996. The venue or arbitration shall be Jaipur, Rajasthan.

f) The decision of a majority of the arbitrators (or of the third arbitrator chairing the arbitration panel, if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction as decree of the court. The parties thereby waive any objections to or claims of immunity from such enforcement.

g) The arbitrator(s) shall give reasoned award. Notwithstanding any reference to the arbitration herein, the parties shall continue to perform their respective obligations under the Agreement unless they otherwise agree.

h) Cost of arbitration shall be equally shared between the Bidder and REIL.

14. FORCE MAJEURE

a. "Force Majeure" shall mean any event beyond the reasonable control of the Employer or of the Contractor, as the case may be, and which is unavoidable notwithstanding the reasonable care of the party affected, and shall include, without limitation, the following:

(a) war, hostilities or warlike operations (whether war be declared or not), invasion, act of foreign enemy and civil war,

(b) rebellion, revolution, insurrection, mutiny, usurpation of government, conspiracy, riot and civil commotion,

(c) earthquake, landslide, volcanic activity, flood or cyclone, or other inclement weather condition, nuclear and pressure waves or other natural or physical disaster,

b. Neither party shall be considered to be in default or in breach of his obligations under the Contract to the extent that performance of such obligation is prevented by any circumstances of Force majeure, which arises after date of Notification of Award.

c. If either party is prevented, hindered or delayed from or in performing any of its obligations under the Contract by an event of Force Majeure, then it shall notify the other in writing of the occurrence of such event and the circumstances thereof within fourteen (14) days after the occurrence of such event.

d. The party who has given such notice shall be excused from the performance or punctual performance of its obligations under the Contract for so long as the relevant event of Force Majeure continues and to the extent that such party's performance is prevented, hindered or delayed. The Time for Completion shall be extended in accordance.

15. LANGUAGE

All documents, drawings, instructions, design data, calculations, operation, maintenance and safety manuals, reports, labels and any other date shall be in English Language. The contract agreement and all correspondence between the REIL and the bidder shall be in English language.

16. OTHER CONDITIONS

16.1 The Successful bidder shall not transfer, assign or sublet the work under this contract or any substantial part thereof to any other party without the prior consent of REIL in writing.

16.2 The Successful bidder or its sub Bidders shall not display the photographs of the work and not take advantage through publicity of the work without written permission of REIL.

16.3 The Successful bidder or its sub Bidders shall not make any other use of any of the documents or information of this contract, except for the purposes of performing the contract.

16.4 REIL will not be bound by any Power of Attorney granted/ issued by the Successful bidder or its sub Bidders or by any change in the composition of the firm made during or subsequent to the execution of the contract. However, recognition to such Power of Attorney and change (if any) may be given by REIL after obtaining proper legal advice, the cost of which will be chargeable to the Successful bidder concerned.

17. SUCCESSORS AND ASSIGNEES:

In case REIL or Successful bidder may undergo any merger or amalgamation or a scheme of arrangement or similar re-organization & this contract is assigned to any entity (ies) partly or wholly, the contract shall be binding mutatis mutandis upon the successor entities & shall continue to remain valid with respect to obligation of the successor entities.

18. SEVERABILITY:

It is stated that each paragraph, clause, sub-clause, schedule or annexure of this contract shall be deemed severable & in the event of the unenforceability of any paragraph, clause sub clause, schedule or the remaining part of the paragraph, clause, sub-clause, schedule annexure & rest of the contract shall continue to be in full force & effect.

19. COUNTERPARTS:

This contract may be executed in one or more counterparts, each of which shall be deemed an original & all of which collectively shall be deemed one of the same instrument

20. RIGHTS & REMEDIES UNDER THE CONTRACT ONLY FOR THE PARTIES:

This contract is not intended & shall not be construed to confer on any person other than the REIL& Successful bidder hereto, any rights and / or remedies herein.

17. CORRESPONDENCE

Bidder requiring any Techno-Commercial clarification of the bid documents may contact in writing or by Fax /E Mail.
Verbal clarifications and information given by the REIL or its employees or its Representatives shall not be in any way entertained.

Name	Contact Number	Email id
Sh. Amitabh Sharma	+91-7727011721	amitabh.sharma@reil.co.in

SECTION-IV

SCOPE OF WORK

A. SCOPE OF WORK:

The scope of work would essentially cover, but not limited to the following:

(i.) Successful bidder(s) shall be responsible for identification of the beneficiaries & marketing of the scheme.

(ii.) Successful bidder(s) is (are) responsible for Site Survey, Feasibility Study and NOC/Consent letters from the building administration.

(iii.) Complete design, engineering, manufacture, supply, storage, transportation, insurance, civil work, erection, testing & commissioning including warranties, comprehensive O&M for 05 Years and documentation of the grid connected rooftop solar PV project.

(iv.) Obtaining all applicable Statutory approvals and implementing the net metering arrangement

(v.) Site visit and check the feasibility of space including installation capacity in consultation with respective Target Customer and submit site feasibility assessment report to REIL / UPCL as per the Format to be provided later. Submission of project proposals after incorporating Net metering as per Uttarakhand state policies.

(iii.) Obtaining No Objection Certificate (NOC)" from Distribution Company (DISCOM) for grid connectivity or any other approvals prevalent as per the statutory policy/guidelines in the state,

(iv) Design, Engineering, Manufacture, Supply, Storage, Civil work, Erection, Testing & Commissioning and, quality control of the grid connected rooftop Solar PV Project.

(v.) Any additional modification work of the roof tops in order to implement the RTS system/project shall be in the scope of successful bidder/developer.

(vi.) Monthly Joint Meter Reading with Consumer and Coordination with Consumer during O&M period for realization of the bills.

(vii) SPV Modules and Inverters shall be supplied by the REIL at site.

B. DETAILED SCOPE OF WORK:

1. Details of work

1.1. Designing, engineering, supply, installation, testing and Commissioning of various capacities of Project as per standard design and specifications and connecting up to existing Mains / ACDB and interfacing internal electrical loads of Project's License's network/electrical loads with Comprehensive O&M for period of Five (5) Operational Years. The bidder would have to take approval for the interfacing the Project with Grid/Electrical Loads of every location from distribution licensee/ CEIG, applicable. The total capacity shall be 500Kwp.

1.2 Bidder shall be responsible for all the works related to Commissioning and Comprehensive O&M for five (05) Operational Years of Project.

1.3 A layout plan of the site should be submitted to the Inspecting Authority clearly indicating the identified location for installation of SPV modules & control room, where control panels shall be installed.

1.4 Detailed planning of time bound smooth execution of Project;

1.5 Performance testing of the Completion and Successful Commissioning of the Project;

1.6 Coverage of risk liability of all personnel associated with implementation and realization of the Project;

1.7 The Bidder shall maintain sufficient inventory of the spare parts to ensure that the Project is functional during the first five (05) of operation;

1.8 The Bidder is responsible for the waterproofing of the roof disturbed/ pierced for installation of Project for the Comprehensive O&M period of first five (05) Operational Years. The Bidder should immediately take necessary action to repair any damage to the water proofing. However, in such situations, Bidder shall bear any loss or damage to Project and rectify the same within reasonable timeframe but any generation loss in such eventualities shall not be passed on to Developer/Procurer.

2. Internal electrification:

2.1. Inspection of the existing electrical network of each of the Project site.

2.2. Inspection of the Project in respect of its interfacing with licensee network/identified electrical load.

2.3. Preparation and submission of electrical drawing for the site with quantity of material required.

2.4. Obtaining prior approval of the work and drawing from Inspecting Authority;

2.5. Execution of the work in accordance with the norms and regulation directives for testing and completion of the Project to the satisfaction of the Nodal Agency;

3. Grid connection:

3.1 The Bidder shall be responsible for synchronization of the Project with licensee's network under Uttarakhand state Policy for Decentralized Renewable Energy Systems, 2016 as amended from time to time. The Bidder shall also suggest the Project Group of operation of the system mentioned in above policy and intimate the Nodal Agency;

3.2 Connectivity of Project with the licensee's network

3.3 Commissioning of the project as applicable.

4. Metering and grid connectivity:

Net Metering and grid connectivity of the roof top solar PV system under this scheme would be the responsibility of the Bidder in accordance with the prevailing guidelines of the concerned DISCOM/SERC/State Nodal Agency for Renewable Energy Projects and / or CEA (if available by the time of implementation).

5. Construction of control room etc.

Construction of control room or any other relative civil work is essential for Commissioning of Project.

6. Additional works

6.1 Requirement of additional/specific design of structure, as desired by Procurer in deviation with the design provided by the Bidder, to accommodate solar panels on rooftop, ground or on any existing structure/ construction/body.

6.2 Construction of approach to the rooftop/place of installation.

6.3 Unless otherwise agreed between the Parties, the Bidder shall not do (a) chipping of rooftop; or (b) disturb water proofing of roof (c) carry out any other modification of the Premises without the written consent of the Procurer. One time cost for strengthening of Premise to the extent required for setting up Solar PV Project during construction shall be borne by Bidder. Any delay due to strengthening of Premise shall not be considered to extend the SCOD unless it is approved by Procurer in written. Cost of repair or maintenance of Premise to the extent required for the Solar PV Project, during the Comprehensive O&M of Project, shall be the responsibility of Bidder, other than cost required for water proofing. The cost for water proofing will be the responsibility of Bidder for a period of first Five (05) Operational Years.

6.4 In case of any ambiguity over any specific works, Bidder and Procurer shall involve Nodal Agency to get the clarity on the additional works.

7. Completion and Commissioning:

7.1 Completion of the Facilities

7.1.2 Pre-Commissioning

7.1.2.1 Within seven (7) days after receipt of the notice from the Contractor, the Project Manager shall deploy the operating and maintenance personnel and other material.

7.1.2.2 The Project Manager shall, within fourteen (14) days after receipt of the Contractor's notice, notify the Contractor in writing of any defects and/or deficiencies. Then, Contractor shall then correct such defects and/or deficiencies, and shall repeat the procedure. If further defects and/or deficiencies are not notified by the Project Manager and if the Project Manager is satisfied that the Pre-commissioning of Facilities or that part thereof have been successfully completed, the Project Manager shall, within seven (7) days after receipt of the Contractor's such notice, advise the Contractor to proceed with the Commissioning of the Facilities or part thereof.

7.1.2 Commissioning:

7.1.2.1 Commissioning of the Facilities shall be commenced by the Contractor immediately after being advised by the Project Manager.

- Commissioning of the Facilities or any part thereof shall be completed by the Contractor as per procedures detailed in bid documents.

7.1.2.2 The Employer shall deploy the operating and maintenance personnel and supply all raw materials, utilities, lubricants, chemicals, catalysts, facilities, services and other materials required for commissioning.

SECTION – V

TECHNICAL SPECIFICATION

Tentative BOQ (for tender purpose) for the work for rate contract for Design, Manufacture, Supply, Erection, Testing & Commissioning including 5 Years comprehensive warranty maintenance ranging from 100kWp to 500kWp under Grid Interactive Rooftop Solar Power Plant of MNRE Phase-II and the Solar Power Policy of the State of Uttarakhand.

S. No.	Item Description	Qty.	Supply	E&C	O&M	Remark
1.	Solar PV module of capacity not less than 300 Wp as per technical specifications	For 100 kWp to 500kWp	By REIL	Bidder	Bidder	
2.	High grade MS structures/Aluminum Structures (as per design) of required sizes and shapes for fixing Solar panels and other works (as per Specification)	100 kWp to 500kWp	Bidder	Bidder	Bidder	Design to be submitted for approval
3.	String Inverter, as per technical specifications.	100 kWp to 500kWp	By REIL	Bidder	Bidder	
4.	D.C. cables and LT cables: Supply, laying (underground/surface), testing and commissioning of copper conductor, XLPE insulated armored cables (as per IS spec and specification given in para. No. 17 of "TECHNICAL SPECIFICATION") of various sizes required to complete the work.	As per site requirement as per design for each site	Bidder	Bidder	Bidder	Size of the cable to be decided based on voltage drop & approval by REIL
5.	Control Cables: Supply, laying, termination, testing and commissioning of 1.1 KV XLPE insulated, GS wire armored cables as per relevant IS standard required to complete the work.	As per site requirement for each site	Bidder	Bidder	Bidder	
6.	Earthing- Supply, Erection, Testing and Commissioning of all earthing equipments as per relevant IS standard and applicable IE rules to complete the work.	As per site requirement for each site	Bidder	Bidder	Bidder	Calculation, Design & Drawing to be submitted for approval
7.	Safety Equipment- Supply and fixing of CO2 based firefighting equipments of reputed make, ISI marked as per the actual site requirement.	As per site requirement for each site	Bidder	Bidder	Bidder	
8.	Civil Works- All the associated Civil works complete in all respects, required to complete the work such a module structure foundation and trench work etc. will be in the scope of this work.	As per site requirement for each site	Bidder	Bidder	Bidder	
9.	Metering System- The bidirectional electronic energy meter (0.5 S Class) for measuring Export –Import energy meter conforming to relevant IS/IEC standard and as per regulation of respective states for 11 KV/33 KV outgoing feeder suitable for interfacing with GPS time synchronization equipment.	As per site requirement for each site	Bidder	Bidder	Bidder	Specification shall be as per respective State's Discom guideline
10.	Solar Energy Meters as per requirement of connection points as per guidelines of MNRE/DISCOM/SEB	As required as per design	Bidder	Bidder	Bidder	Specification shall be as per respective State's Discom

						guideline
11.	Tool kit for Installation- commissioning	2 sets for each site	Bidder	Bidder	Bidder	
12	Transformer	If required	Bidder	Bidder	Bidder	As per discom guidelines and required
13.	Misc works: Any other work required to complete & commission the work.	As required as per design & site requirement	Bidder	Bidder	Bidder	

Notes: The above BOQ is only for guidance purpose that bidder gets an overview of the work to be executed. Detailed BOQ, complete in all respects needs to be submitted by the bidder after the award of work to him and after the approval of detailed drawings of the project from REIL.

1 DEFINITION

A Grid Tied Solar Rooftop Photo Voltaic (SPV) power plant consists of SPV array, Module Mounting Structure, Power Conditioning Unit (PCU) consisting of Maximum Power Point Tracker (MPPT), Inverter, and Controls & Protections, interconnect cables, Junction boxes, Distribution boxes 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.

- Solar PV modules consisting of required number of Crystalline PV cells.
- Grid interactive Power Conditioning Unit with Remote Monitoring System
- Module Mounting structures
- Junction Boxes.
- Earthing and lightening protections.
- IR/UV protected PVC Cables, Pipes and accessories
- Bidirectional electronic energy meter for Net Metering

ARRAY STRUCTURE:

a) Hot dip galvanized/Suitable Pre Galvanized MS mounting structures may be used for mounting the modules/ panels/arrays.

b) Structure should have angle of inclination as per the site conditions to take maximum Solar Irradiation. However to accommodate more capacity the angle inclination may be reduced until the plant meets the specified performance ratio requirements.

c) The Mounting structure shall be so designed to withstand the wind speed applicable to project site per IS Standard (like Delhi-wind speed of 150 km/hour). Bidder must submit Wind Load Calculation and STAAD Analysis for structure components, fasteners and foundation duly certified by MNRE

empanelled Chartered Engineer. Suitable fastening arrangement such as grouting and calmping should be provided to secure the installation against the specific wind speed.

d) The mounting structure steel shall be as per latest IS 2062:1992 and galvanization of the mounting structure shall be in compliance of latest IS4759.

e) Structural material shall be corrosion resistant and electrolytically compatible with the materials used in the module frame, its fasteners, nuts and bolts. Aluminum structures also can be used which can withstand the wind speed of respective wind zone. Protection towards rusting need to be provided either by coating oranodization.

f) Aluminum frames should be avoided for installations in coastal areas.

g) The fasteners used should be made up of stainless steel. The structures shall be designed to allow easy replacement of any module. The array structure shall be so designed that it will occupy minimum space without sacrificing the output from the SPV panels

h) Regarding civil structures the bidder need to take care of the load bearing capacity of the roof and need arrange suitable structures based on the quality of roof.

i) The total load of the structure (when installed with PV modules) on the terrace should be less than 30kg/m^2.

j) The minimum clearance of the structure from the roof level should be 300mm.

AC DISTRIBUTION PANEL BOARD:

a) AC Distribution Panel Board (ACDB) shall control the AC power from PCU/ inverter, and should have necessary surge arrestors. Interconnection from ACDB to mains at LT Bus bar while in grid tied mode.

b) All switches and the circuit breakers, connectors should conform to IEC 60947, part I, II and III/ IS60947 part I, II and III.

c) The changeover switches, cabling work should be undertaken by the bidder as part of the project.

d) All the Panel's shall be metal clad, totally enclosed, rigid, floor mounted, air - insulated, cubical type suitable for operation on three phase / single phase, 415 or 230 volts, 50Hz

e) The panels shall be designed for minimum expected ambient temperature of 45 degree Celsius, 80 percent humidity and dusty weather.

f) All indoor panels will have protection of IP54 or better. All outdoor panels will have protection of IP65 or better.

g) Should conform to Indian Electricity Act and rules (till last amendment).

h) All the 415 AC or 230 volts devices / equipment like bus support insulators, circuit breakers, SPDs, VTs etc., mounted inside the switchgear shall be suitable for continuous operation and satisfactory performance under the following supply conditions

Variation in supply Voltage	+/- 10 %
Variation in supply Frequency	+/- 5 Hz

PCU/ARRAY SIZE RATIO:

a) The combined wattage of all inverters should not be less than rated capacity of power plant under STC.

b) Maximum power point tracker shall be integrated in the PCU/inverter to maximize energy drawn from the array.

2. TRANSFORMER "IF REQUIRED" & METERING:

a) Dry/oil type relevant kVA, 11kV/415V, 50 Hz Step up along with all protections, switchgears, Vacuum circuit breakers, cables etc. along with required civil work.
b) The bidirectional electronic energy meter (As per latest applicable Net Metering Regulation of Uttarakhand) shall be installed for the measurement of import/Export of energy.
c) The bidder must take approval/NOC from the Concerned DISCOM for the connectivity, technical feasibility, and synchronization of SPV plant with distribution network before commissioning of SPV plant.

3. POWER CONSUMPTION:

Regarding the generated power consumption, priority need to give for internal consumption first and thereafter any excess power can be exported to grid.

4. PROTECTIONS

LIGHTNING PROTECTION

a) The SPV power plants shall be provided with lightning & overvoltage protection. The main aim in this protection shall be to reduce the over voltage to a tolerable value before it reaches the PV or other sub system components. The source of over voltage can be lightning, atmosphere disturbances etc The entire space occupying the SPV array shall be suitably protected against Lightning by deploying required number of Lightning Arrestors. Lightning protection should be provided as per NFC 17-102:2011 standard. The protection against induced high-voltages shall be provided by the use of metal oxide varistors (MOVs) and suitable earthing such that induced transients find an alternate route to earth.

SURGE PROTECTION

Internal surge protection shall consist of three MOV type surge-arrestors connected from +ve and –ve terminals to earth (via Y arrangement).

EARTHING PROTECTION

a) Each array structure of the PV yard should be grounded/ earthed properly as per IS: 3043-1987. In addition the lighting arrester/masts should also be earthed inside the array field. Earth Resistance shall be tested in presence of the representative of Department as and when required after earthing by calibrated earth tester. PCU, ACDB and DCDB should also be earthed properly.
b) Earth resistance shall not be more than 3 ohms. It shall be ensured that all the earthing points are bonded together to make them at the same potential.

CABLES

Cables of appropriate size to be used in the system shall have the following characteristics:

i. Shall meet IEC 60227/IS 694, IEC 60502/IS1554 standards

ii. Temp. Range: –10^{o}C to+80^{o}C

iii. Voltage rating 660/1000V

iv. Excellent resistance to heat, cold, water, oil, abrasion, UV radiation

v. Flexible

vi. Sizes of cables between array interconnections, array to junction boxes, junction boxes to Inverter etc. shall be so selected to keep the voltage drop (power loss) of the entire solar system to the minimum (2%)

vii. For the DC cabling, XLPE or, XLPO insulated and sheathed, UV-stabilized single core multi-stranded flexible copper cables shall be used; Multi-core cables shall not be used.

viii. For the AC cabling, PVC or, XLPE insulated and PVC sheathed single or, multi-core multi-stranded flexible copper cables shall be used; Outdoor AC cables shall have a UV- stabilized outer sheath.

ix. The cables (as per IS) should be insulated with a special grade PVC compound formulated for outdoor use. Outer sheath of cables shall be electron beam cross-linked XLPO type and black in color.

x. The DC cables from the SPV module array shall run through a UV-stabilized PVC conduit pipe of adequate diameter with a minimum wall thickness of1.5mm.

xi. Cables and wires used for the interconnection of solar PV modules shall be provided with solar PV connectors (MC4) and couplers

xii. All cables and conduit pipes shall be clamped to the rooftop, walls and ceilings with thermo- plastic clamps at intervals not exceeding 50 cm; the minimum DC cable size shall be 4.0 mm^2 copper; the minimum AC cable size shall be 4.0 mm^2 copper. In three phase systems, the size of the neutral wire size shall be equal to the size of the phase wires.

xiii. Cable Routing/ Marking: All cable/wires are to be routed in a GI cable tray and suitably tagged and marked with proper manner by good quality ferule or by other means so that the cable easily identified. In addition, cable drum no. / Batch no. to be embossed/ printed at every one meter.

xiv. Cable Jacket should also be electron beam cross-linked XLPO, flame retardant, UV resistant and black in color.

xv. All cables and connectors for use for installation of solar field must be of solar grade which can withstand harsh environment conditions including High temperatures, UV radiation, rain, humidity, dirt, salt, burial and attack by moss and microbes for25 years and voltages as per latest IEC standards. DC cables used from solar modules to array junction box shall be solar grade copper (Cu) with XLPO insulation and rated for 1.1kV as per relevant standards only.

xvi. The ratings given are approximate. Bidder to indicate size and length as per system design requirement. All the cables required for the plant shall be provided by the bidder. Any change in cabling sizes if desired by the bidder shall be approved after citing appropriate reasons. All cable schedules/ layout drawings shall be approved prior to installation.

xvii. Multi Strand, Annealed high conductivity copper conductor PVC type 'A' pressure extruded insulation or XLPE insulation. Overall PVC/XLPE insulation for UV protection Armoured cable for underground laying. All cable trays including covers to be provided. All cables conform to latest edition of IEC/ equivalent BIS Standards as specified below: BoS item / component Standard Description Standard

Number Cables General Test and Measuring Methods, PVC/XLPE insulated cables for working Voltage up to and including 1100 V, UV resistant for outdoor installation IS /IEC69947.

xviii. The total voltage drop on the cable segments from the solar PV modules to the solar grid inverter shall not exceed2.0%.

xix. The total voltage drop on the cable segments from the solar grid inverter to the building distribution board shall not exceed2.0%.

5. CONNECTIVITY

The maximum capacity for interconnection with the grid at a specific voltage level shall be as specified in the Distribution Code/Supply Code of the State and amended from time to time.

6. DANGER BOARDS ANDSIGNAGES

a) Danger boards should be provided as and where necessary as per IE Act. /IE rules as amended up to date. Three signage shall be provided one each at battery –cum- control room, solar array area and main entry from administrative block.

7. FIRE EXTINGUISHERS

The firefighting system for the proposed power plant for fire protection shall be consisting of:

a) Portable fire extinguishers in the control room for fire caused by electrical short circuits
b) Sand buckets in the control room
c) The installation of Fire Extinguishers should confirm to TAC regulations and BIS standards. The fire extinguishers shall be provided in the control room housing PCUs as well as on the Roof or site where the PV arrays have been installed.

8. PLANNING, DESIGNING AND APRROVAL TO START WORK:

a) The bidder should carry out Shadow Analysis at the site and accordingly design strings & arrays layout considering optimal usage of space, material. The bidder should submit the array layout drawings along with Shadow Analysis Report to UPCL for approval before start of work.
b) Based on roof type and strength bidder shall design an suitable structure and submit GA, Part Drawing, STAAD Analysis, Wind Load Calculations to UPCL for Approval before start of work.
c) Schematic drawing showing the requirement of SV panel, Power conditioning Unit(s)/ inverter, Junction Boxes, AC and DC Distribution Boards, meters etc.
d) Itemized bill of material for complete SV plant (individual site) covering all the components and associated accessories supported by Technical Specifications of Material, O&M Mannual.
e) Earthing & LA Layout
f) UPCL reserves the right to modify the landscaping design, Layout and specification of sub-systems and components at any stage as per local site conditions/requirements.

9. SOLAR PV SYSTEM ON THE ROOFTOP FOR MEETING THE ANNUAL ENERGY REQUIREMENT

The Solar PV system on the rooftop of the selected buildings will be installed for meeting upto 90% of the annual energy requirements depending upon the area of rooftop available and the remaining energy requirement of the office buildings will be met by drawing power from grid at commercial tariff of DISCOMs.

10. SAFETY MEASURES:

The bidder shall take entire responsibility for electrical safety of the installation(s) including connectivity with the grid and follow all the safety rules & regulations applicable as per Electricity Act, 2003 and CEA guidelines etc.

11. DISPLAY BOARD

The bidder has to display a board at the project site mentioning the following:

a) Plant Name, Capacity, Location, Date of commissioning, estimated Power generation.
b) Financial Assistance details from UPCL/financial institution apart from loan. This information shall not be limited to project site but also be displayed at site offices/head quarter offices of the successful bidder
c) Sign Board for each project site, 4x3 feet made of MS sheet 14 Gauge (1.6mm thickness) with angle support of (3"x3", 6mm) and height of board 6 feet from ground level to bottom of board and length of angle to be buried in the ground 1.50 feet with 1 feet hole pass inside, painting on board (enamel paint with red oxide base coat) to indicate Name of scheme, name of implementation agency and capacity of project etc.

SECTION-VI

QUALITY ASSURANCE AND EVALUATION MECHANISM (QAM)

This section describes the project management system, quality assurance and documentation requirements for the project.

1. Project Management System

1.1 General

The Contractor shall assign a project manager with the authority to make commitments and decisions that are binding on the Contractor. Employer will designate a project manager to coordinate all employer project related activities. All communications between employer and the Contractor shall be coordinated through the project managers. The project managers shall also be assisting employer in communicating project related information to other stake holders.
Bidder shall submit the manpower deployment plan along with the bids, describing the key roles of each person.

The role and responsibilities of contractor shall be as follows:

a) To prepare, maintain and update project detailed Work Execution Plan for successful implementation of project like approval of GTP, approval of sub-contractor, approval of drawings, supply of materials, mobilization of men, material and equipment etc. at site for successful completion of works, Compile and up-load physical as well as financial progresses, compile the progress of works at Employer level and to assist in forwarding it to all stake holders.

b) To actively participate with employer in resolving all issues relating to project implementation including ROW, Forest Clearances, Railway Crossings, and Payments to contractors/vendors and policy matters.

c) To actively participate in monitoring, reviewing and analysing the physical, financial and quality assurances works' progress of IPDS works and also to take suitable measures on compliance of observations being raised during monitoring/review meetings with employer.

d) To implement and maintain a dedicated centralized bank account for the project, upload and up-date project wise physical progress in IPDS web portal. Physical as well as financial progresses shall be uploaded in standard Bill of Material format of the contract. Also, to submit claims as per release IPDS guidelines to Employer for release of payments/funds.

e) To oversee the progress and compliance of the Quality Assurance Mechanism as per /IPDS guidelines.

1.2 Project Schedule

As per the schedule the bidder shall submit a preliminary implementation plan along with the bid. The detailed project implementation schedule shall be submitted by the contractor after the award for employer's approval, which shall include at least the following activities:

(a) Surveying of site.
(b) Documents submission and approval schedule

(c) Type Testing Schedule
(d) Dispatch Schedule
(e) Installation & commissioning schedule
(f) Training schedule, if any.

The project schedule shall include the estimated period for completion of project and its linkage with other activities.

1.3 Progress Report

A progress report shall be prepared by the Contractor each month against the activities listed in the project schedule. The report shall be made available to employer on a monthly basis, e.g., the 10th of each month. The progress report shall include all the completed, on going and scheduled activities.

1.4 Transmittals

Every document, letter, progress report, change order, and any other written transmissions exchanged between the Contractor and employer shall be assigned a unique transmittal number. The Contractor shall maintain a correspondence index and assign transmittal numbers consecutively for all Contractor documents. Employer will maintain a similar correspondence numbering scheme identifying documents and correspondence that employer initiates.

2. Documentation

2.1 GENERAL

ii. To ensure that the proposed systems conform to the specific provisions and general intent of the Specification, the Contractor shall submit documentation describing the systems to employer for review and approval. The contractor shall obtain approval of employer for the relevant document at each stage before proceeding for manufacturing, system development, factory testing, site testing, training etc. The schedule for submission/approval of each document shall be finalised during the discussions before placement of the contract, this schedule shall be in line to overall project schedule.

iii. Each document shall be identified by a Contractor document number, the employer document number, and the employer purchase order number. Where a document is revised for any reason, each revision shall be indicated by a number, date, and description in a revision block along with an indication of official approval by the Contractor's project manager. Each revision of a document shall highlight all changes made since the previous revision.

iv. All technical description, specifications, literature, correspondence, prints, drawings, instruction manuals, test reports(both factory and at site), progress photographs, booklets, schedules and all supplementary data or documents furnished in compliance with the requirements of the Contract, shall become the property of the Employer and the costs shall be considered as included in the Contract price.

v. The Contractor shall be responsible for any time delay, misinterpretation, error and conflict during design, manufacturing, testing and erection of the Works resulting from non-compliance with the requirements of this

Specification.

vi. The Employer shall have the right to make copies of any documents, data, reports, information etc. supplied by the Contractor in connection with the Works. The Employer shall not impart the information of these documents to any other manufacturer or competitor but he shall be free to use these for preparation of technical papers, reports etc.

vii. All documentation shall be in English language.

2.2 REQUIREMENTS FOR SUBMISSION OF DOCUMENTS, INFORMATION AND DATA BY THE CONTRACTOR

2.2.1 The Contractor shall submit to the Employer all documents in accordance with an approved schedule of submissions and shall submit any further information (in the form of drawings, documents, manuals, literature, reports etc.) when asked by the Employer while commenting/approving any drawings/documents etc.

2.2.2 The documents which are subject to the approval of the Employer shall be identified by the Contractor with the stamp "FOR APPROVAL". All other documents shall be submitted to the Employer for information and shall be identified by the Contractor with the stamp "FOR INFORMATION".

2.2.3 The sequence of submission of the documents shall be subject to the approval of the Employer. The sequence of submissions of all documents shall be such that the necessary information is available to enable the Employer to approve or comment the document.

2.2.4 The Contractor shall supply 4 hard copies of all drawings and documents.

2.2.5 In case a "SUBSEQUENT" revision of any document is made due to any reason whatsoever, a revision of the same, highlighting the changes shall be resubmitted for the Employer's specific approval/ information.

2.3 DOCUMENTS FOR APPROVAL

2.3.1 The Employer shall be allowed fifteen (15) calendar days to approve the Contractor's submissions. The submissions for approval, shall be returned to the Contractor marked in one of the following ways :

Category I:	Approved
Category II:	Approved with Comments.
Category III:	Returned for correction.
Category IV :	For information

2.3.2 The first notations "I" or "II" shall be deemed to permit the Contractor to proceed with the work shown on the document, except in the case of notation "II" the work shall be done subject to the corrections indicated thereon and/or described in the letter of transmittal. The Contractor shall bear the full responsibility for proceeding with the Works prior to receipt of the release in notation "I" from the Employer.

2.3.3 In case of notation "II", the Contractor shall include the alterations required & resubmit the document within fifteen (15) days from date of Employer's letter of transmittal.

2.3.4 In case of notation "III", the Contractor shall include the alterations required and resubmit the document to the Employer, within fifteen (15) days, from date of letter of transmittal, so that such document can be returned with the notation "I" or "II".

2.3.5 It may also be noted that the approval/commenting by the Employer does not relieve the Contractor of any of his contractual obligations and his responsibilities for correctness of dimensions, materials, weights quantities or any other information contained therein, as well as the conformity of designs with Indian Statutory Laws and the Technical Specifications as may be applicable. The approval also does not limit the Employer's rights under the Contract.

2.3.6 The approved documents shall be considered as the working documents. However the Technical Specification and connected documents shall prevail over these documents in case a decision is required on interpretation.

2.4 DOCUMENTS FOR INFORMATION

The Contractor shall not delay the Works pending the receipt by the Contractor of the comments on documents submitted to the Employer for information. However, the Employer shall have the right to comment on all the documents submitted by the Contractor, when, in the opinion of the Employer the document does not comply with the Contract or otherwise. The Contractor shall satisfactorily demonstrate that the information contained in the aforesaid document does meet the requirements of the Contract or revise the document in order that the information shall comply with the requirements of the Contract.

2.5 BASIC REFERENCE DRAWINGS

2.5.1 The reference drawings are enclosed with the bid document, which forms a part of the specification. The contractor shall develop a new layout in line with the specification and take the approval of the EMPLOYER. The contractor shall maintain the overall dimensions of the substation, buildings, bay length, bay width, phase to earth clearance, phase to phase clearance and sectional clearances, clearances between buses, bus heights but may alter the locations of equipment to obtain the statutory electrical clearances as required for the substation.

2.5.2 All drawings submitted by the Contractor including those submitted at the time of bid shall be in sufficient detail to indicate the type, size, arrangement, material description, Bill of Materials, weight of each component, break-up for packing and shipment, dimensions, internal & the external connections, fixing arrangement required and any other information specifically requested in the specifications.

2.5.3 Each drawing submitted by the Contractor shall be clearly marked with the name of the Employer, the unit designation, the specifications title, the specification number and the name of the Project. If standard catalogue pages are submitted, the applicable items shall be indicated therein. All titles, noting, markings and writings on the drawing shall be in English. All the dimensions should be in metric units.

2.5.4 Further work by the Contractor shall be in strict accordance with these drawings and no deviation shall be permitted without the written approval of the Employer, if so required.

2.5.5 The review of these data by the Employer will cover only general conformance of the data to the specifications

and documents interfaces with the equipment provided under the specifications. This review by the Employer may not indicate a thorough review of all dimensions, quantities and details of the equipment, materials, any devices or items indicated or the accuracy of the information submitted. This review and/or approval by the Employer shall not be considered by the Contractor, as limiting any of his responsibilities and liabilities for mistakes and deviations from the requirements, specified under these specifications and documents.

2.5.6 All manufacturing and fabrication work in connection with the equipment prior to the approval of the drawings shall be at the Contractor's risk. The Contractor may make any changes in the design which are necessary to make the equipment conform to the provisions and intent of the Contract and such changes will again be subject to approval by the Employer. Approval of Contractor's drawing or work by the Employer shall not relieve the contractor of any of his responsibilities and liabilities under the Contract.

2.5.7 All engineering data submitted by the Contractor after final process including review and approval by the Employer shall form part of the Contract Document and the entire works performed under these specifications shall be performed in strict conformity, unless otherwise expressly requested by the Employer in Writing.

Step 1: Design Approval

Contractor shall submit following documents for UPCL's approval:

I. Array Layout
II. Shadow Analysis
III. Wind Load Calculation
IV. Pitch Tilt Optimization
V. Structure Drawing & Foundation Plan
VI. Statd Analysis of Module Mounting Structure
VII. Earthing layout
VIII. Lightining Arrestor layout
IX. DC/AC Cable Routing including Inverter and ACDB
X. Cable Losses and Voltage Drop Calculation Sheet
XI. Bill of Material & Technical Specifications
XII. Electrical Single Line Diagram including interconnection Scheme and Net Metering.
XIII. Project Execution Plan

Above information must be submitted at least 10 days prior to scheduled date of start of work at site. Based on UPCL/REIL observations contractor shall submit additional information to the satisfaction of UPCL/REIL so that design approval may be granted.

While designing the Project and selecting material following standards must be followed:

Fuses	
IS/IEC 60947 (Part 1, 2 & 3), EN 50521	General safety requirements for connectors, switches, circuit breakers (AC/DC): Low-voltage Switchgear and Control-gear, Part 1: General rules Low-Voltage Switchgear and Control-gear, Part 2: Circuit Breakers Low-voltage switchgear and Control-gear, Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units

	EN 50521: Connectors for photovoltaic systems – Safety requirements and tests
IEC 60269-6	Low-voltage fuses - Part 6: Supplementary requirements for fuse-links for the protection of solar photovoltaic energy systems
Surge Arrestors	
BFC 17-102:2011	Lightening Protection Standard
IEC 60364-5-53/ IS 15086-5 (SPD)	Electrical installations of buildings - Part 5-53: Selection and erection of electrical equipment - Isolation, switching and control
IEC 61643-11:2011	Low-voltage surge protective devices - Part 11: Surge protective devices connected to low-voltage power systems - Requirements and test methods
Cables	
IEC 60227/IS 694, IEC 60502/IS 1554 (Part 1 & 2)/ IEC69947 (as applicable)	General test and measuring method for PVC (Polyvinyl chloride) insulated cables (for working voltages up to and including 1100 V, and UV resistant for outdoor installation)
BS EN 50618	Electric cables for photovoltaic systems (BT(DE/NOT)258), mainly for DC Cables
Earthing /Lightning	
IEC 62561 Series (Chemical earthing) (as applicable)	IEC 62561-1 Lightning protection system components (LPSC) - Part 1: Requirements for connection components IEC 62561-2 Lightning protection system components (LPSC) - Part 2: Requirements for conductors and earth electrodes IEC 62561-7 Lightning protection system components (LPSC) - Part 7: Requirements for earthing enhancing compounds
Junction Boxes	
IEC 60529	Junction boxes and solar panel terminal boxes shall be of the thermo-plastic type with IP 65 protection for outdoor use, and IP 54 protection for indoor use
Energy Meter	
IS 16444 or as specified by the DISCOMs	A.C. Static direct connected watt-hour Smart Meter Class 1 and 2 — Specification (with Import & Export/Net energy measurements)
Solar PV Roof Mounting Structure	
IS 2062	Material for the Mounting Structure
IS 4759	For Galvanization of Structure Material

Step 2: Type Tests and Pre Dispatch Inspection of Material

Pre-dispatch inspection shall be performed on Solar PV Modules & Module Mounting Structure for which contractor shall be required to raise requisition giving at least 10-day time. Depending on requirement, inspection shall be witnessed by representatives of Employer.

All expenditure incurred by Employer in performance of dispatch instruction shall be recovered from turnkey contractor. The turnkey contractor shall ensure that pre-dispatch inspection for materials are intimated only when the material is completely ready for inspection.

For all materials to be used in the project following type, acceptance and routine tests during manufacture shall be carried-out on the material:

I. Test confirming to compliance of applicable IS/IEC Standard
II. Test Confirming to Guarantee Technical Parameters

Contractor shall supply the original copies of test report along with material at site.

Step 3: Pre Commissioning Test

On completion of erection of the equipment and before charging, each item of the equipment shall be thoroughly cleaned and then inspected jointly by the Employer and the contractor for correctness and completeness of installation and acceptability for charging, leading to initial pre-commissioning tests at Site. Following are the key parameters to be checked:

I. Pitch/Inter Row Spacing
II. Tilt Angle, Azimuth
III. Module alignment
IV. Tightening of Fasteners
V. Cable Dressing
VI. Terminations/Connections
VII. Earth Pit Resistance
VIII. Voltage Drop in AC/DC Circuit
IX. Concrete Mix Grade

Any workman ship or material defect pointed out by Employers shall be made good before commissioning of Project. Any equipments/machines/devices required for testing of any part of project shall be made available by contractor.

Step 5: Commissioning & Project Completion Report

Contractor shall be responsible for obtaining all statutory clearance before start of commercial operation of the project.

On the day of Commissioning Performance Ratio of the Project shall be tested jointly by Contractor, UPCL and PMA and value of Performance Ratio shall be recorded and signed then and there.

Within 7 days of commissioning activities contractor shall submit duly filled and signed Project Completion Report along with all attachments.

SECTION-VII

Payment Terms & Other Conditions

The terms of payment has been summarized below.

1. 70% Payment shall be paid after complete installation and commissioning of the SPV Power Plant and receipt of beneficiary share.
2. 20% Payment shall be paid after receipt of CFA from UPCL/MNRE.
3. Rest 10% Payment shall be paid in 5 equal installments of 2% each after end of the each year.

1. Other terms & conditions shall be as per prevailing guidelines and specifications of Grid Interactive Rooftop Solar Power Plants of MNRE, GOI and Solar Power Policy of the State of Uttarakhand issued from time to time. In case of any contradiction of terms & conditions, the guidelines of MNRE shall prevail.

2. Other Terms & Conditions:-

Compliance with Regulations and Indian Standard:-
All works shall be carried out in accordance with relevant regulations, both statutory & those specified by the Indian standard related to the works covered by this specification. In particular the equipment and installation will comply with the following:-

Work man's compensation act.
Minimum wages Act.
Payment wages Act.
Contact Labour regulation & abolition Act.
ESI, PF & Bonus Act.
Regulation under Indian Electricity Rules,
I.S. Standard as applicable& other statuary requirement.

6. GENERAL TERMS AND CONDITIONS

(a) The above scope of work is indicative. However, if there is any other work the supplier shall carry out the same without any extra cost.
(b) Responsibility, right and liabilities of the bidder, under this contract, will commence from the date of acceptance of the purchase order.
(c) The work will have to be carried out in such a manner that will not cause any inconvenience to other agencies working in the site.
(d) Prior to handing over of site, the entire site will be cleaned off debris etc.
(e) All the materials brought to site shall accompany with appropriate paper work like challan, Invoice etc. duly verified & signed by Customer, to be submitted to REIL for payment.
(f) Any damage to the buildings / structures / area made by bidder's workmen or by bidder's agent will be made good by bidder at their cost.
(g) Safety of bidder's workmen or bidder's agent is responsibility of the bidder. Accordingly, risk and necessary insurance and safety cover shall be addressed by bidder.
(h) No child labour should be employed for executing the present contract.
(i) Bidder is required to meet all the statutory obligation with regard to work deployed by bidder for the contract such as ESI, PF, Minimum wage act Work man compensation act, Income Tax act, Employees Insurance act etc.

(j) All tools and tackles required for installation, wiring, assembly, digging of cable trenches, earth pits etc have to be organized by the bidder. All the accessories such as power drilling machine, cutting machine, digging tools & complete set of crimping tools etc shall be organized by bidder.

(k) All the works shall be executed strictly as per the direction of engineer in-charge at site.

(l) **Pre-dispatch inspection of items supplied by bidders:**

- Manufacture test certificates must be furnished in advance to enable clearance to dispatch to the site.
- On completion of inspection, the test certificates must be furnished to REIL in advance to enable clearance for dispatch to the site.
- Material shall be inspected at manufacturing work.

(m) Delivery Schedule: 45 days from placement date of LOI.

(n) Delivery of material: The material shall be delivered freight and loading unloading at respective site.

(o) The complete job for supply of items and installation- commissioning shall be carried out by contractor.

(p) Five year on site guarantee and maintenance at site including spares of all the supplied items. A Service Level Agreement shall be signed with the supplier for 05 year free maintenance from the date of commissioning of systems.

(q) All necessary co-ordination activities for metering to the 11/33 kV grid shall be carried out by bidder. This includes laisoning with the Govt. Departments/ agencies.

(r) 10 years guarantee and onsite warranty maintenance of the equipments supplied the bidder from the date of commissioning of the project.

NO NEAR RELATICE CLAUSE

The bidder should give a certificate that none of his/her near relative is working in REIL as defined below along with their technical bid as per the attached Annexure. In case of proprietorship firm certificate will be given by the proprietor. For partnership firm certificate will be given by all the partners and in case of limited company by all the Directors of the company excluding Government of India/Financial institution nominees and independent non-Official part time Directors appointed by Govt. of India or the Governor of the state and full time Directors of PSUs both state and central. Due to any breach of these conditions by the company or firm or any other person the tender will be cancelled and Bid Security will be forfeited at any stage whenever it is noticed and REIL will not pay any damage to the company or firm or the concerned person. The company or firm or the person will also be debarred for further participation in REIL's Tender. The near relatives for this purpose are defined as:- (a) Members of a Hindu undivided family. (b) They are husband and wife. (c) The one is related to the other in the manner as father, mother, son(s) & Son's wife (daughter in law), Daughter(s) and daughter's husband (son in law), brother(s) and brother's wife, sister(s) and sister's husband (brother in law).

PRICE BID FORMAT

The Online format for the bidders is as under: The Bidder will quote the price in the online format. Hard copy of price bid will be not accepted.

Capacity	Unit	Unit Rate (per kW) to be quoted by the bidder (in Rs.)	GST (in Rs.)	Total Amount including (in Rs.)
Rate contract for design, manufacture, supply, erection, testing & commissioning including 5 years comprehensive warranty maintenance ranging from 100 kwp to 500kwp under grid interactive rooftop solar power plant of MNRE phase-II and the solar power policy of the state of Uttarakhand **(Except SPV module and Inverter)**	kWp			

SECTION – VIII

Annexure-I

PERFORMA (EMD)
BANK GUARANTEE TOWARDS EARNEST MONEY DEPOSIT

Bank Guarantee No.
Date

Rajasthan Electronics & Instruments Limited, (REIL)
2, Kanakpura Industrial Area Sirsi Road, Jaipur-302034 (Rajasthan)

Dear Sir,

In accordance with Invitation for Bids under your Bid Document No……..(Bid Document no.) M/s. **…… (Bidder's Name)** having its registered office at ……..... (hereinafter called the bidder) wish to participate in the said Bid for Design, Manufacture, Supply, Erection, Testing & Commissioning including 5 Years comprehensive warranty maintenance of 100 kWp to 500kWp under Grid Interactive Rooftop Solar Power Plant of MNRE Phase-II and the Solar Power Policy of the State of Uttarakhand.

As an irrevocable bank guarantee against Bid Security for an amount of ……(Amount of EMD in Rs.) valid up to …… required to be submitted by the Bidder as a condition precedent for participation in the said Bid which amount is liable to be forfeited on the happening of any contingencies mentioned in the Bidding Documents.

We, the **……(Bank Name & address)** guarantee and undertake to pay immediately on demand by M/s Rajasthan Electronics & Instruments Limited the amount of ……(Amount of EMD in Rs.) without any reservation, protest, demand and recourse. Any such demand made by the 'REIL' shall be conclusive and binding on us irrespective of any dispute or difference raised by the Bidder.
This Guarantee shall be irrevocable and shall remain valid up to …… (date of expiry of Guarantee). If any further extension of this guarantee is required, the same shall be extended to such required period (not exceeding one year) on receiving instructions from **M/s. ……. (Bidder's Name)** on whose behalf this guarantee is issued.

This guarantee will remain in force up to and including ……..(date of expiry of Guarantee), and any demand in respect thereof must reach the Bank not later than the above date.

Notwithstanding anything contained herein above:

i) Our liability under this guarantee shall not exceed ……(Amount of EMD in Rs.)
ii) This bank guarantee shall be valid up to ……(date of expiry of Guarantee).
iii) We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only and only if we receive from you a written claim or demand on or before …… (date of expiry of Guarantee).

The said letter of guarantee has been transmitted through SFMS gateway to your bank. It is advised that in your own interest, you may verify the genuineness of above letter of guarantee from your bank / branch.
Dated the …….. date of …… 2020.

Bank Name
(sealed & signed)

Annexure -II

CERTIFICATE FOR NON BLACK LISTING

(Bidder must submit it on Letter Head of the firm)

Date

To

Dy. General Manager (MM),
Rajasthan Electronics & Instruments Limited,
2, Kanakpura Industrial Area,
Jaipur-302034 (Rajasthan).

Ref: NIB No.

Dear Sir,

We M/s. ……..confirm that we are not blacklisted in any PSUs / Government / Semi Government / Quasi Government department in India, as on date of submission of bid. This undertaking is submitted to the best of my knowledge. If at any stage it is found wrong, then REIL may take necessary action against us.

On behalf of company ……

Name and Designation

Annexure-III

Tender ref.:

UNDERTAKING OF NO NEAR RELATIVE

Date

To

Deputy General Manager (MM),
Rajasthan Electronics & Instruments Limited,
2, Kanakpura Industrial Area,
Jaipur-302034
Rajasthan

Dear Sir,

I……S/o…… R/o…… hereby certify that none of my relatives) as defined in the tender document is/are employed in REIL unit as per details given in tender document. In case at any stage, it is found that the information given by me is false / incorrect, REIL shall have the absolute right to take any action as deemed fit/without any prior intimation to me.

On behalf of company ……

Name and Designation