RAJASTHAN ELECTRONICS & INSTRUMENTS LIMITED, JAIPUR

(An ISO 9001 : 2015& 14001 : 2015 "Mini Ratna" Central Public Sector Enterprise)

2, KANAKPURA INDUSTRIAL AREA, SIRSI ROAD,

JAIPUR-302034

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NOTICE INVITING TENDER FOR**"** Supply of BOS (Except SPV modules and inverters) ,Design, Installation, Testing and Commissioning including Warranty and Operation & Maintenance for a period of 5 years of Grid Connected Solar PV Plant at Govt./PSUs Buildings in The State of Karnataka and Tamilnadu"

TENDER NO. . REIL/RE/20-21/PP/20008 dated 29.05.2020

Important Dates

Last Date & Time for submitting e- tender: 04.06.2020 up to 16:00

Date & Time for opening of e-tenders 05.06.2020 at 16:00

Kindly note that only online bid will be considered against this tender

RAJASTHAN ELECTRONICS & INSTRUMENTS LIMITED, JAIPUR

NOTICE INVITING TENDER NO.REIL/RE/20-21/PP/20008

This is a Notice Inviting Tender (NIT) for Supply of BOS (Except SPV modules and inverters) , Design, Installation, Testing and Commissioning including Warranty and Operation & Maintenance for a period of 5 years of 120 kWp Grid Connected Solar PV Plant at Steel Authority of India (SAIL)Ware-House in Bangalore , Karnataka and 110kWp kWp Grid Connected Solar PV Plant at SAIL Ware-House in Chennai, Tamilnadu as per description and terms & conditions specified hereinafter:

Item Description:

S. No.	Description
1.	Supply of BOS (Except SPV modules and inverters) , Design, Installation, Testing and Commissioning including Warranty and Operation & Maintenance for a period of 5 years of 120 kWp Grid Connected Solar PV Plant at SAIL warehouse in Bangalore , Karnataka.
2.	Supply of BOS (Except SPV modules and inverters) , Design, Installation, Testing and Commissioning including Warranty and Operation & Maintenance for a period of 5 years of 110 kWp Grid Connected Solar PV Plant at SAIL warehouse in Chennai, Tamilnadu

1.2 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.

Note: e- Procurement system does not allow submission of documents after due date oftender. Incomplete form or non-submission of documents to verify details may results into rejection of your offer and no communication shall be done forsubmission of documents.

Price Bid:-Price Bid format given with tender is to be uploaded after filling all relevant information like basic prices, taxes & duties. The Price bid should be uploaded strictly as per the format available with the tender failing which the offer is liable for rejection (remaining or changing format of price sheet will not be accepted by system). **REIL reserve the right to distribute the work.**

Annexure-I

RAJASTHAN ELECTRONICS & INSTRUMENTS LIMITED, JAIPUR

Process Compliance Form

(Tenders are required to print on their company's letter head and signed, stamp before uploading).

To

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

Sub:- Acceptance to the process related Terms and Conditions for the e-Tendering

Dear Sir,

This has reference to the Terms & Conditions for e-Tendering mentioned in the tenderNo.:- REIL/RE/20-21/PP/20008

We here by confirm the following:-

1) The undersigned is authorized representative of the company.
2) We have carefully gone through the NIT, Tender Documents and the Rules governing the e-tendering as well as this document.
3) We will honor the Bid submitted by us during the e-tendering.
4) We undertake that if any mistake occurs while submitting the bid from our side, we will honor the same.
5) We are aware that if REIL has to carry out e-tender again due to our mistake, REIL has the right to disqualify us for this tender.
6) We confirm that REIL shall not be liable & responsible in any manner whatsoever for my/our failure to access & submit offer on the e-tendering site due to loss of internet connectivity, electricity failure, virus attack problem with the PC, digital signature certificate or any other unforeseen circumstances etc.

With regards

Signature with company seal

Name:
Designation:
E-mail Id:

Annexure - II

A) ELIGIBILITY CONDITIONS:

Bidder must fulfill following criteria:-

1. Experience in Installation & Commissioning with Operation & maintenance of single project of 50kWp rooftop grid Connected Power Plant and cumulative 100 kWp rooftop GIPP in last five financial years. Experience of O&M shall be minimum 2 years of respective project.
2. Contractor must having valid electrical Contractor License issued by Electrical inspectorate Department of respective location/ State.

B) FINANCIAL CAPABILITY, EXPERINCE:-

1. Firm should have average turnover of Rs. 25 Lakh per year during last three financial years.

Bidder should submit following documents along with Technical bid on website:-

1. Bankers Report.
2. Audited Balance sheet for last three years.
3. Turnover and Net worth value duly certified by CA (networth should be positive).
4. Copy of the last Three years Income Tax Return.
5. Experience in Installation, Commissioning and maintenance of SPV Power Plant Systems. (attached verified documents such as work order/I&C and maintenance certificate).
6. Photocopy of GST/service tax registration No., TIN no., PAN no.
7. Any other relevant documents

C) EARNEST MONEY& SECURITY DEPOSIT

1. The tender must be accompanied by a sum of Rs. 65,000/- (Rupee Sixty Five Thousand only) as Earnest Money in the form of deposit receipts, 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. Bank Guarantee should be valid for a period 06 month from the date of bid submission.

3. The Successful Bidder shall deposit the Security deposit of amounting to Rs. 1,00,000 only for **each project separately** (Rupee One Lakh only for each project separately) in the form of Bank Guarantee/Demand Draft within 7 days from date of issuing of LOA and valid upto three months from completion of project . The PBG shall be established/issued from the Punjab National Bank or of any of the Nationalized Banks or by a scheduled bank.

In case if EMD is submitted in the form of BG, it may be considered as Part Security Deposit and Successful bidder have to extend the validity of BG upto three months from the last date of O&M period/date of issued of completion certificate issued by REIL. Balance amount of security deposit is to be submitted separately within 7 days from the date of issuing of LOA, valid upto 3 months from completion of project.

D) 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 Writtenpermission of the Dy. General Manager (MM). In the event of the contractor contravening this condition, Dy. General Manager(MM) 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 Dy. General Manager(MM), may sustain in consequence or arising out of such replacing of the contract.

d) **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. Check list be attached.

e) **Right to accept / reject**: REIL reserves the right to reject any or all tender without assigning any reason whatsoever. Also, the REIL authority reserve 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.

f) The quantity of the SPV Systems shown in the tender can be increased or decreased to any Extentdepends upon the actual requirement.

g) **Assistance to contractor**: The contractor shall not be entitled for assistance Eitherin the procurement of raw materials required for the fulfillment of the contract orin the securing of transport facilities.

F) PRICES:

a. Prices are to be quoted **in Indian Rupees**.
b. Prices quoted in the Price/Financial Bid must be meaningful and measurable in the context.
c. The prices quoted must be per Watt Peak (Wp) shown in the BOQ.
d. Price must be quoted in original sheet of BOQ failing which the same is liable to be rejected
e. Offer shall be valid for 90 days from the date of bid opening
f. Work may be distributed on L1 prices.

Scope of Work (REIL Jaipur) :

The following material will be supplied for Roof Top Grid Connected SPV Power Plant by REIL Jaipur:

S. No.	Description of Work
1.	300-330Wp or higher SPV Moduleswith MC4 Connector
2.	String Inverters with Data logger

EVALUATION CRITERIA

1. BID EVALUATION

The evaluation process comprises the following four steps:

Step I :	Responsiveness check of Techno Commercial Bid
Step II :	Evaluation of Bidder's fulfillment of Eligibility Criteria
Step III:	Evaluation of Price Bid
Step IV:	Successful Bidders(s) selection

RESPONSIVENESS CHECK OF TECHNO COMMERCIAL BID

The Techno Commercial Bid submitted by Bidders shall be scrutinized to establish responsiveness to the requirements laid down in the RfS subject to Eligibility Criteria. Any of the following may cause the Bid to be considered "Non-responsive", at the sole discretion of REIL:

a. Bids that are incomplete, i.e. not accompanied by any of the applicable formats inter alia covering letter, power of attorney supported by a board resolution, Bid Bond, etc.;
b. Bid not signed by authorized signatory and /or stamped in the manner indicated in this tender;
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 tender;
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 REIL as applicable;
i. Bidder makes any misrepresentation.

PRELIMINARY EXAMINATION

REIL will examine the Bids to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed and stamped and whether the Bids are otherwise in order.

Arithmetical errors will be rectified on following basis. If there is any discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total amount shall be corrected. If there is a discrepancy between words and figures, the amount written in words will prevail.

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 as specified in tender Non-availability of information and related documentary evidence for the satisfaction of Eligibility Criteria may cause the Bid non- responsive.

EVALUATION OF PRICE BID

Price Bid of the Qualified Bidders shall be opened in online presence of the representatives of such Qualified Bidders, who wish to be present, on a date as may be intimated by REIL tothe Bidders through website w ww.reil.co.in or Email. The evaluation of Price Bid shall be carried out based on the information furnished in Financial Bid (Price Bid). The Price Bid submitted by the Bidders shall be scrutinized to ensure conformity with the tender. Any Bid not meeting any of the requirements of this tender may cause the Bid to be considered "Non-responsive" at the sole decision of the REIL.

a. The Price bids for the both sites shall be evaluated separately
b. The Project Cost shall be calculated up to two decimal places.
c. Total Project cost shall be considered during evaluation as mentioned in Price Bid format.

SUCCESSFUL BIDDER(S) SELECTION

Bids qualifying as per tender condition shall only be evaluated in this stage.

Project Cost quoted in Price Bids of Qualified Bidders shall be ranked from the lowest to the highest for site wise separately.

Allocation of Capacity

Based on the price bid quoted by the bidders, REIL shall arrange the bids in the ascending order i.e. L1, L2, L3, _ _ _ (L1 being the lowest quote)

For all the sites, Site wise lowest bidder will be declared as the successful bidder separately.

The Letter(s) of Allocation (LOA) shall be issued to all such Successful Bidders(s) selected as per the provisions of this Clause.Each Successful Bidder shall acknowledge the LOA and return duplicate copy with signature of the authorized signatory of the Successful Bidder to REIL within 07 (Seven) days of issue of LOA.

REIL at its own discretion, has the right to reject any or all the Bids without assigning any reason whatsoever, at its sole discretion

1. **PROJECT ALLOCATION AND SANCTION**

The bidders who have been notified as Successful Bidders, shall be given **04 (Four) Months** from the date of issuance of Letter of Allocation for execution of project.

The Successful Bidder shall complete the design, engineering, manufacture, supply, storage, civil work, erection, testing & commissioning of each project within **04 (Four) Months**, as the case may be from the date of issue of letter of allocation.

The successful bidders/ developers shall submit the project sanction documents to REIL.

If the Bidder fails to commission the sanctioned project within specified time i.e. 04 (Four) Months from the date of LOA, as the case may be, no SD shall be disbursed for that project. However, further period of 02 (Two) Months shall be allowed to Bidder for completion of entire unexecuted allocated capacity and penalty/ LD on per day basis calculated for the Performance Security on a 04 (Four) months period would be levied. After additional 02 months [i.e. total 06 (six) Months, as the case may be, from the date of issuance of LOA], the project will get cancelled and the pro-rata PBG would be forfeited.

2. **OTHER CONDITIONS**

Bidder or owner of the building has to obtain all the necessary approvals/ Consents/ Clearances required for Erection, Testing, Commissioning and O&M of the project including Grid connectivity. REIL shall not have any responsibility in this regard. For works part of Scope of Work of tender, the responsibility lies with the Bidder.

3. COMMISSIOINING/ COMPLETION CERTIFCATE

DOCUMENT SUBMISSION FOR ISSUANCE OF COMMISSINONING/ COMPLETION CERTIFICATE:

For the purpose of above the following documents will be deemed to form the completion documents:

a. Checklist for inspection of Roof Top SPV power plants as per REIL format.
b. Project completion and satisfaction certificate from roof top owner's.
c. Any other documents required by REIL, shall be submitted by Successful bidder.

FINAL DECISION AND FINAL CERTIFICATE:

Upon completion of O & M of 5 years of Projects and subject to the Engineer-in-Charge being satisfied, the Engineer-in-Charge shall (without prejudice to the rights of the REIL to retain the provisions of relevant Clause hereof) issue a certificate herein referred to as the Final Certificate to that effect and the Successful bidder shall not be considered to have fulfilled the whole of his obligations under Contract until Final Certificate shall have been issued by the Engineer-in-Charge notwithstanding any previous entry upon the Work and taking possession, working or using of the same or any part thereof by the Owner of Roof/ REIL.

4. DEBARRED FROM PARTICIPATING IN REIL'S ROOF TOP TENDER

REIL reserves the right to carry out the performance review of each Bidder from the time of submission of Bid onwards. In case it is observed that a bidder has not fulfilled its obligations in meeting the various timelines envisaged, in addition to the other provisions of the tender, such Bidders may be debarred from participating in REIL's any future tender for a period as decided by the competent authority of REIL.

GENERAL CONDITIONS OF CONTRACT (GCC)

1. SCOPE OF WORK

The Scope of work for the bidder include feasibility of installation in identified buildings, Obtaining No Objection Certificate (NOC) from Distribution Company (DISCOM) for grid connectivity, Survey, complete design, engineering, manufacture, supply, storage, civil work, erection, testing & commissioning of the grid connected rooftop solar PV project including Operation and Maintenance (O & M) of the project for a period of 5 years after commissioning of the projects as per REIL's acceptance.

2. PROJECT COST

The Project cost shall include all the costs related to above 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, Operation & Maintenance for a period of 5 years, goods and services including spares required if any during O&M period. 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. The project cost should be quoted while accounting for the cost of grid-connectivity and net metering application/ security deposit etc. All costs associated with net-metering will have to be borne by the successful bidder. Charges for Security Deposit/Electrical inspection may deposit by beneficiary.

The Project cost quoted is on lump sum turnkey basis and the bidder is responsible for the total Scope of work described at above.

The Project cost shall remain firm and fixed and shall be binding on the Successful Bidder till completion of work . 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.

The Project cost shall be inclusive of all duties and taxes, insurance etc. The prices quoted by the firm shall be complete in all respect and no price variation/ adjustment shall be payable by REIL. However, statutory variation of taxes and duties may be paid by the roof top owner.

The Operation & Maintenance of Solar Photovoltaic Power Plant would include wear, tear, overhauling, machine breakdown, insurance, and replacement of spares, consumables & other parts for a period of 5 years.

The Project cost shall be specified in sanction letter based on Successful Bidder's quote for each project. The project cost shall be in accordance with all terms, conditions, specifications and other conditions of the Contract as accepted by the REIL and incorporated into the sanction letter.

3. INSURANCE

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. The bidder shall also take appropriate insurance including watch and ward during O&M period.

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

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 of projects. The successful bidder has to transfer all the Guarantees/ Warrantees of the different components to the Owner of the project. 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 the owner of the project and REIL will not be responsible in any way for any claims whatsoever on account of the above.

5. TYPE AND QUALITY OF MATERIALS AND WORKMANSHIP

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 shall be used.

The specifications of the components should meet the technical specifications mentioned in tender.

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.

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

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 5 years for projects from the date of commissioning of the plant. Below mentioned guidelines, shall be followed by successful bidder. In addition, O & M practices shall be strictly followed as per Annexure D.

- O&M of Solar Power Plant shall be compliant with grid requirements to achieve committed energy generation.
- Deputation of qualified and experienced engineer/ technicians till the O&M period at project site.
- 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.
- Periodic checks of the Modules, PCUs and BoS shall be carried out as a part of routine preventive and breakdown maintenance.
- Immediate replacement of defective Modules, Invertors/PCUs and other equipment as and when required. Modules/Inverters shall provided by REIL. The replacement shall taken by successful bidder.
- 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.
- 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.
- 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.
- Co-ordination with Owner / DISCOM / CEIG as per the requirement for Joint Metering Report (JMR). The person in charge present at site from bidder's side shall take a joint meter reading in the presence of rooftop owner on a monthly basis. Furnishing generation data (JMR) each month to REIL positively by 1st week of every month for the previous month. Failure to adhere may result in non-disbursal ofO&M charges.
- 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.
- For any issues related to operation & maintenance, a toll-free number shall be made available to the rooftop owner/ plant owner to resolve within 72 hours.
- If any jobs covered in O&M Scope as per RFS are not carried out by the contractor/ 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

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 and / or CEA (if available by the time of implementation). REIL could facilitate connectivity; however, the entire responsibility lies with bidder only.

8. PLANT PERFORMANCE EVALUATION

The successful bidder shall be required to meet minimum guaranteed generation with Performance Ratio (PR) at the time of commissioning and related Capacity Utilization Factor (CUF) as per the GHI levels of the location during the O&M period. PR should be shown minimum of 75% at the time of inspection for initial commissioning acceptance to qualify for release of applicable incentive. Minimum CUF of 15% should be maintained for a period of 5 years for fulfilling one of the conditionfor release of PBG. The bidder should send the periodic plant output details to REIL for ensuring the CUF. The PR will be measured at Inverter output level during good radiation conditions.

PROGRESS REPORT

The bidder shall submit the progress report monthly to REIL in Prescribed Performa. REIL will have the right to depute its representatives to ascertain the progress of contract at the premises of works of the bidder.

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 RFS to REIL as per the Format given in Annexure L. 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 payment. However, the decision of Engineer - in - charge shall be final in this regard.

Submission of O & M Report (OMR)

The bidder shall submit the Monthly O&M Report mandatorily to REIL as per the Format enclosed at Annexure K. 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 payment. However, the decision of Engineer - in - charge shall be final in this regard.

9. PROJECT INSPECTION

The project progress will be monitored by 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 REIL or any agency/ experts designated / authorized by REIL from time to time. REIL shall depute a technical person(s) from its list of empanelled experts/ agencies updated from time to time for inspection, Third party verification, monitoring of system installed to oversee, the implementation as per required standards and also to visit the manufacturer's facilities to check the quality of products as well as to visit the system integrators to assess their technical capabilities as and when required. The cost of Inspection to be carried out by REIL shall be borne by REIL. The cost of re- inspection, if any shall be borne by Vendor.The projects shall be inspected at any time during commissioning or after the completion of the project.

10. CANCELLATION OF SECURITY DEPOSIT (S.D)

REIL will not release the SD for any shortcomings in commissioning as per technical specifications mentioned or for performance ratio (PR) below the specified limit (75%) after commissioning. Also PBG shall be forfeited in case Average CUF falls below 15% during O&M period after commissioning of 5 years.

11. APPLICABLE LAW

The Contract shall be interpreted in accordance with the laws of the Union of India.

12. FORCE MAJEURE

"Force Majeure" shall mean any event or circumstance or combination of events those stated below that wholly or partly prevents or unavoidably delays the Successful Bidder in the performance of its obligations under this Agreement, but only if and to theextent that such events or circumstances are not within the reasonable control, directly or indirectly, of the Successful Bidder and could not have been avoided if the Successful Bidder had taken reasonable care or complied with Prudent Utility Practices:

a. Act of God, including, but not limited to lightning, drought, fire and explosion (to the extent originating from a source external to the site), earthquake, volcanic eruption, landslide, flood, cyclone, typhoon or tornado if and only if it is declared/ notified by the competent state/ central authority/ agency (as applicable);
b. any act of war (whether declared or undeclared), invasion, armed conflict or act of foreign enemy, blockade, embargo, revolution, riot, insurrection, terrorist or military action if and only if it is declared/ notified by the competent state/ central authority/ agency (as applicable); or
c. Radioactive contamination or ionizing radiation originating from a source in India or resulting from another Force Majeure Event mentioned above excluding circumstances where the source or cause of contamination or radiation is brought or has been brought into or near the Project by the Successful Bidder or those employed or engaged by the Successful Bidder.

12.2. Notwithstanding the provisions of clauses contained in this RfS document, the contractor shall not be liable to forfeit (a) PBG for delay and (b) termination of contract, if he is unable to fulfill his obligation under this contract due to force majeure conditions.

For purpose of this clause, "Force Majeure" means an event beyond the control of the contractor and not involving the contractor's fault or negligence and not foreseeable, either in its sovereign or contractual capacity. Such events may include but are not restricted to Acts of God, wars or revolutions, fires, floods, epidemics, quarantine restrictions and fright embargoes etc. Whether a "Force majeure" situation exists or not, shall be decided by REIL and its decision shall be final and binding on the contractor and all other concerned.

In the event that the contractor is not able to perform his obligations under this contract on account of force majeure, he will be relieved of his obligations during the force majeure period. In the event that such force majeure extends beyond six months, REIL has the right to terminate the contract in which case, the PBG shall be refunded to him.

If a force majeure situation arises, the contractor shall notify REIL in writing promptly, not later than 14 days from the date such situation arises. The contractor shall notify REIL not later than 3 days of cessation of force majeure conditions. After examining the cases, REIL shall decide and grant suitable additional time for the completion of the work, if required.

Force Majeure Exclusions

Force Majeure shall not include (i) any event or circumstance which is within the reasonable control of the Parties and (ii) the following conditions, except to the extent that they are consequences of an event of Force Majeure:

a. Unavailability, late delivery, or changes in cost of the plant, machinery, equipment, materials, spare parts or consumables for the Power Project;
b. Delay in the performance of any contractor, sub-contractor or their agents;
c. Non-performance resulting from normal wear and tear typically experienced in power generation materials and equipment;
d. Strikes at the facilities of the Contractor;
e. Insufficiency of finances or funds or the agreement becoming onerous to perform; and
f. Non-performance caused by, or, connected with the Contractor's:

i) Negligent or intentional acts, errors or omissions; ii) Failure to comply with an Indian Law; or

iii) Breach of, or default under this RfS/LoI/Sanctioned Letter etc.

13. 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.

14. OTHER CONDITIONS

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**.**

The Successful bidder or its subcontractors shall not display the photographs of the work and not take advantage through publicity of the work without written permission of REIL and owner of the Rooftop.

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

REIL will not be bound by any Power of Attorney granted/ issued by the Successful bidder or its subcontractors 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.

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.

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.

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.

15. CORRESPONDENCE

Bidder requiring any Techno-Commercial clarification of the bid documents may contact in writing or by Fax/ E Mail.

Sh. Nikunj Pathak 77270-11727 nikunj.pathak@reil.co.in

Verbal clarifications and information given by the REIL or its employees or its Representatives shall not be in any way entertained.

16. LIQUIDATED DAMAGES:

The Successful Bidder shall complete the entire scope of work **within 04 (Four) Months**from the date of issue of allocation letter(s).

If the Successful Bidder fails to commission the sanctioned project within specified time, Liquidated Damages on per day basis calculated for the Performance Security on a 04 (four) Months period would be levied. After 06 (Six) Months the Project will get cancelled and the total PBG amount would be forfeited.

For example -

If a project of 100kWp is delayed by 36 days then the Liquidated Damages will be levied as given below

Liquidated Damages = [(Performance Security)/ 120 Days] * Delayed Days = (1,00,000/ 120) * 36 = INR 30,000/-

TECHNICAL SPECIFICATION OF GRID CONNECTED SPV POWER PLANT

SCOPE OF WORK & TECHNICAL SPECIFICATIONS

The proposed projects shall be commissioned as per the technical specifications given below. Any shortcomings will lead to forfeitedpayments full or part as decided by 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

•Mounting structures

•Junction Boxes.

•Earthing and lightening protections.

•IR/UV protected PVC Cables, pipes and accessories

SOLAR PHOTOVOLTAIC MODULES:

The PV modules shall supplied by REIL. The modules rating shall be 300-330Wp and as per plant capacity.

ARRAY STRUCTURE

a) Hot dip galvanized MS mounting structures may be used for mounting the modules/ panels/arrays. Each structure should have angle of inclination as per the site conditions to take maximum insolation. However to accommodate more capacity the angle inclination may be reduced until the plant meets the specified performance ratio requirements.

b) The Mounting structure shall be so designed to withstand the speed for the wind zone of the location where a PV system is proposed to be installed (like Delhi-wind speed of 150 kM/ hour). It may be ensured that the design has been certified by a recognized Lab/ Institution in this regard and submit

wind loading calculation sheet to REIL. Suitable fastening arrangement such as grouting and calming should be provided to secure the installation against the specific wind speed.

c) The mounting structure steel shall be as per latest IS 2062: 1992 and galvanization of the mounting structure shall be in compliance of latest IS 4759.

d) 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 or anodization.

e) 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

f) 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.

g) The minimum clearance of the structure from the roof level should be 300 mm, for RCC type roof,

h) Ballast type structures can be used only for plants for capacity more than 40 kWp.

JUNCTION BOXES (JBs)

a) The junction boxes are to be provided in the PV array for termination of connecting cables. The J. Boxes (JBs) shall be made of GRP/FRP/Powder Coated Aluminium /cast aluminium alloy with full dust, water & vermin proof arrangement. All wires/cables must be terminated through cable lugs. The JBs shall be such that input & output termination can be made through suitable cable glands.

b) Copper bus bars/terminal blocks housed in the junction box with suitable termination threads Conforming to IP65 standard and IEC 62208 Hinged door with EPDM rubber gasket to prevent water entry. Single / double compression cable glands. Provision of earthings. It should be placed at 5 feet height or above for ease of accessibility.

c) Each Junction Box shall have High quality Suitable capacity Metal Oxide Varistors (MOVs)/ SPDs, suitable Reverse Blocking Diodes. The Junction Boxes shall have suitable arrangement monitoring and disconnection for each of the groups.
d) Suitable markings shall be provided on the bus bar for easy identification and the cable ferrules must be fitted at the cable termination points for identification.
e) All fuses shall have DIN rail mountable fuse holders and shall be housed in thermoplastic IP 65 enclosures with transparent covers.

DC DISTRIBUTION BOARD:

a) DC Distribution panel to receive the DC output from the array field.

b) DC DPBs shall have sheet from enclosure of dust & vermin proof conform to IP 65 protection. The bus bars are made of copper of desired size. Suitable capacity MCBs/MCCB shall be provided for controlling the DC power output to the PCU along with necessary surge arrestors.

AC DISTRIBUTION PANEL BOARD:

a AC Distribution Panel Board (DPB) 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, 50 Hz
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

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.

PCU/ Inverter:

The PCU/Inverter shall be supplied by REIL.

INTEGRATION OF PV POWER WITH GRID:

The output power from SPV would be fed to the inverters which converts DC produced by SPV array to AC and feeds it into the main electricity grid after synchronization. In case ofgrid failure, or low or high voltage, solar PV system shall be out of synchronization and shall be disconnected from the grid. Once the DG set comes into service, PV system shall again be synchronized with DG supply and load

requirement would be met to the extent of availability of power. 4 pole isolation of inverter output with respect to the grid/ DG power connection need to be provided.

DATA ACQUISITION SYSTEM / PLANT MONITORING

i. Data Acquisition System shall be provided for each of the solar PV plant above 10 kWp capacity.

ii. Data Logging Provision for plant control and monitoring, time and date stamped system data logs for analysis with the high quality, suitable PC. Metering and Instrumentation for display of systems parameters and status indication to be provided.

iii. Solar Irradiance: An integrating Pyranometer / Solar cell based irradiation sensor (along with calibration certificate) provided, with the sensor mounted in the plane of the array. Readout integrated with data logging system.

iv. Temperature: Temperature probes for recording the Solar panel temperature and/or ambient temperature to be provided complete with readouts integrated with the data logging system

v. The following parameters are accessible via the operating interface display in real time separately for solar power plant:
   a. AC Voltage.
   b. AC Output current.
   c. Output Power
   d. Power factor.
   e. DC Input Voltage.
   f. DC Input Current.
   g. Time Active.
   h. Time disabled.
   i. Time Idle.
   j. Power produced
   k. Protective function limits (Viz-AC Over voltage, AC Under voltage, Over frequency, Under frequency ground fault, PV starting voltage, PV stopping voltage.

vi. .All major parameters available on the digital bus and logging facility for energy auditing through the internal microprocessor and read on the digital front panel at any time) and logging facility (the current values, previous values for up to a month and the average values) should be made available for energy auditing through the internal microprocessor and should be read on the digital front panel.

vii. PV array energy production: Digital Tri Vector Energy Meters to log the actual value of AC/ DC voltage, Current & Energy generated by the PV system provided. TVM Energy meter along with CT/PT should be of 0.5 accuracy class.

viii. Computerized DC String/Array monitoring and AC output monitoring shall be provided as part of the inverter and/or string/array combiner box or separately.

ix. String and array DC Voltage, Current and Power, Inverter AC output voltage and current (All 3 phases and lines), AC power (Active, Reactive and Apparent), Power Factor and AC energy (All 3 phases and cumulative) and frequency shall be monitored.

x. Computerized AC energy monitoring shall be in addition to the digital AC energy meter.

xi. The data shall be recorded in a common work sheet chronologically date wise. The data file shall be MS Excel compatible. The data shall be represented in both tabular and graphical form.

xii. All instantaneous data shall be shown on the computer screen.

xiii. Software shall be provided for USB download and analysis of DC and AC parametric data for individual plant.

xiv. Provision for instantaneous Internet monitoring and download of historical data shall be also incorporated.

xv. Remote Server and Software for centralized Internet monitoring system shall be also provided for download and analysis of cumulative data of all the plants and the data of the solar radiation and temperature monitoring system.

xvi. Ambient / Solar PV module back surface temperature shall be also monitored on continuous basis.

xvii. Simultaneous monitoring of DC and AC electrical voltage, current, power, energy and other data of the plant for correlation with solar and environment data shall be provided.

xviii. Remote Monitoring and data acquisition through Remote Monitoring System software at the owner / SECI location with latest software/hardware configuration and service connectivity for online / real time data monitoring / control complete to be supplied and operation and maintenance / control to be ensured by the bidder.

xix. The bidders shall be obligated to push real-time plant monitoring data on a specified intervals (say 15 minute) through open protocol at reciver location (cloud server) in XML/JSON format, preferably. Suitable provision in this regard will be intimated to the bidders.

TRANSFORMER "IF REQUIRED" & METERING:

i. 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, as per applicable IS or IEC Standard.

ii. The bidirectional electronic energy meter (0.5 S class) shall be installed for the measurement of import/Export of energy.

iii. The bidder must take approval/NOC from the Concerned DISCOM for the connectivity, technical feasibility, and synchronization of SPV plant with distribution network and submit the same to REIL before commissioning of SPV plant.

iv. Reverse power relay shall be provided by bidder (if necessary), as per the local DISCOM requirement.

POWER CONSUMPTION:

a) Regarding the generated power consumption, priority need to give for internal consumption first and thereafter any excess power can be exported to grid. Finalization of tariff is not under the purview of REIL or MNRE. Decisions of appropriate authority like DISCOM, state regulator may be followed.

PROTECTIONS

The system should be provided with all necessary protections like earthing, Lightning, and grid islanding as follows:

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 SPD type II and suitable earthing such that induced transients find an alternate route to earth.

SURGE PROTECTION

a) Internal surge protection shall consist of three SPD type II, 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/REIL authorized person 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 5 ohms. It shall be ensured that all the earthing points are bonded together to make them at the same potential.

GRID ISLANDING:

a) In the event of a power failure on the electric grid, it is required that any independent power-producing inverters attached to the grid turn off in a short period of time. This prevents the DC-to-AC inverters from continuing to feed power into small sections of the grid, known as "Islands." Powered Islands present a risk to workers who may expect the area to be unpowered, and they may also damage grid-tied equipment. The Rooftop PV system shall be equipped with islanding protection. In addition to disconnection from the grid (due to islanding protection) disconnection due to under and over voltage conditions shall also be provided.

b) A manual disconnect 4-pole isolation switch beside automatic disconnection to grid would have to be provided at utility end to isolate the grid connection by the utility personnel to carry out any maintenance. This switch shall be locked by the utility personnel.

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: –10oC to +80oC
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/Aluminium 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 colour.
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 of 1.5mm.
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 mm2 copper; the minimum AC cable size shall be 4.0 mm2 copper. In three phase systems, the size of the neutral wire size shall be equal or half 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 colour.
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 for 25 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 /IEC 69947.

xviii. The total voltage drop on the cable segments from the solar PV modules to the solar grid inverter shall not exceed 2.0%.

xix. The total voltage drop on the cable segments from the solar grid inverter to the building distribution board shall not exceed 2.0%.

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. Following criteria have been suggested for selection of voltage level in the distribution system for ready reference of the solar suppliers.

Plant Capacity	**Connecting voltage**
Up to 10 kW	240V-single phase or 415V-three phase at the option of the consumer
Above 10kW and up to 100 kW	415V – three phase
Above 100kW	At HT/EHT level (11kV/33kV/66kV) as per DISCOM rules

a Utilities may have voltage levels other than above, DISCOMS may be consulted before finalization of the voltage level and specification be made accordingly.

b For large PV system (Above 100 kW) for commercial installation having large load, the solar power can be generated at low voltage levels and stepped up to 11 kV level through the step up transformer. The transformers and associated switchgear would require to be provided by the SPV bidders.

TOOLS & TACKLES AND SPARES:

a After completion of installation & commissioning of the power plant, necessary tools & tackles are to be provided free of cost by the bidder for maintenance purpose. List of tools and tackles to be supplied by the bidder for approval of specifications and make from SECI/ owner.

b A list of requisite spares in case of PCU/inverter comprising of a set of control logic cards, IGBT driver cards etc. Junction Boxes. Fuses, MOVs / arrestors, MCCBs etc along with spare set of PV modules be indicated, which shall be supplied along with the equipment. A minimum set of spares shall be maintained in the plant itself for the entire period of warranty and Operation & Maintenance which upon its use shall be replenished.

DANGER BOARDS AND SIGNAGES:

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. Text of the signage may be finalized in consultation with SECI/ owner.

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.

DRAWINGS & MANUALS:

a Two sets of Engineering, electrical drawings and Installation and O&M manuals are to be supplied. Bidders shall provide complete technical data sheets for each equipment giving details of the specifications along with make/makes in their bid along with basic design of the power plant and power evacuation, synchronization along with protection equipment.

b Approved ISI and reputed makes for equipment be used.

c For complete electro-mechanical works, bidders shall supply complete design, details and drawings for approval to REIL/owners before progressing with the installation work

PLANNING AND DESIGNING:

a The bidder should carry out Shadow Analysis at the site and accordingly design strings & arrays layout considering optimal usage of space, material and labour. The bidder should submit the array layout drawings along with Shadow Analysis Report to REIL/Owner for approval.

b SECI 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.

c The bidder shall submit preliminary drawing for approval & based on any modification or recommendation, if any. The bidder submit three sets and soft copy in CD of final drawing for formal approval to proceed with construction work.

DRAWINGS TO BE FURNISHED BY BIDDER AFTER AWARD OF CONTRACT:

i. The Contractor shall furnish the following drawings Award/Intent and obtain approval
ii. General arrangement and dimensioned layout
iii. Schematic drawing showing the requirement of SV panel, Power conditioning Unit(s)/ inverter, Junction Boxes, AC and DC Distribution Boards, meters etc.
iv. Structural drawing along with foundation details for the structure.
v. Itemized bill of material for complete SV plant covering all the components and associated accessories.
vi. Layout of solar Power Array
vii. Shadow analysis of the roof
viii. Any other drawings required by REIL to be submitted by successful bidder.

PRE DISPATCH INSPECTION:-

Successful bidder shall apply for inspection of materials 7 days earlier. The REIL officials shall carried out the PDI. Successful bidder shall dispatched the materials after clearance received from REIL. REIL may waived off the PDI. The wavier of PDI is sole discrination of REIL only.

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.

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.

DISPLAY BOARD

The bidder has to display a board at the project site (above 25 kWp) mentioning the following:

a. Plant Name, Capacity, Location, Date of commissioning, estimated Power generation.
b. Financial Assistance details from REILMNRE/Any other 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. The size and type of board and display shall be approved by Engineer-in-charge before site inspection.
d. Please refer Annexure-G for IEC standards to be mandatorily adhered.

GENERAL TERMS & CONDITIONS OF THE CONTRACT

1) AMENDMENT

Except as otherwise provided herein, no addition, amendment to or modification of the Contract shall be effective unless it is in writing and signed by and on behalf of both parties.

2) SEVERABREILITY

In the event that any or any part of the terms conditions or provisions contained in the Contract shall be determined invalid, unlawful or unenforceable to any extent such term, condition or provision shall be served from the remaining terms, conditions and provisions that shall continue to be valid and enforceable to the fullest extent permitted by law.

3) CONFIDENTIAL TREATMENT

It is understood and agreed that data, know-how and other such proprietary information that was provided or will be provided by either party, will remain confidential.

4) RELATIONSHIP OF THE PARTIES

REIL relationship with Vendor will be that of a Business Associate, and nothing in this Contract shall be construed to create a relationship, joint venture, partnership.

5) INDEMNITY

REIL and the Vendor will indemnify, defend, and hold harmless each other and its divisions, successors, subsidiaries and affiliates, the assigned of each and their directors, officers, agentsand employees from and against all liabilities, claims, losses, and damages of any nature, including, without limitation, all expenses (including attorney's fees), cost, and judgments incident there to REIL and REIL's obligations under this indemnity will survive the expiration, termination, completion or cancellation of this Contract or an order hereunder.

6) RESTRICTIN ON EMPLOYMENT

Both the parties have agreed that they will not recruit any members of staff of other party directlyor indirectly.

7) ARBITRATION

All disputes arising out of this contract and questions relating to its interpretation etc. shall be referred to the contract committee headed by ED/GM and if not resolved shall be referred to the sole arbitration of Managing Director, Rajasthan Electronics & Instruments Ltd., for his decision, which shall be final and binding on both parties. The Venue of Arbitration proceedings shall be at Jaipur.

8) RISK AND COST

In the event of failure on the part of the contractor in the supply, installation and commissioning of goods and services, which is required in view of the pending orders, REIL shall be entitled to cancel the remaining order and procure the outstanding quantity through other sources at risk and costs of the contractor.

9) TERMINATION OF CONTRACT:

REIL shall be entitled to terminate this Contract, in the event of any or all or any of the following events, with a written notice of 15 days with due consent of the Vendor:-

i. has abandoned the Contract
ii. has without valid reason failed to complete the projects in respect of the contract.

iii. persistently fails to execute the Contract in accordance with the Contract or persistently neglects to carry out its obligations under the Contract without just and proper cause.

10) DURATION OF CONTRACT

This contract shall take effect on the day of execution of this contract and shall endure for the period of 5 year from date of commissioning and hand over the Power Plant(s) to beneficiary and renewable as per mutual agreement.

11) GOVERNING LAW

This contract and its validity, interpretation and performance will take effect and be governed under the laws of India. Venue in any action in law or equity arising from the terms and conditions of this contract shall be the court of appropriate jurisdiction in Jaipur, Rajasthan (India)

12) PREFERENCE TO MSE

Preference to MSE will be given and procurement from SC/ST and Women Entrepreneursshall be done as per the government guidelines. Start Ups are exempted from condition of prior turnover and prior experience subject to meeting of quality and technical specifications.

13) CONTRACT:

Before execution of the work, security deposit be submitted and a contract agreement for execution of the work shall be signed by the Vendor with REIL within 7 days of LOI from REIL. In case agreement is not executed within the stipulated time, earnest money will be forfeited.

14) PAYMENTS

i. 40% payment of Contract value shall be released after supply of complete materials as per scope of tender, submission of receipt of materials with dully verified by customer and REIL-in charge and release of REIL's payment from customer against supply of materials.
ii. 40% payment of Contract value shall be released after commissioning of project, submission of Net Metering Report/commissioning certificate dully verified by Customer and release of REIL's payment against commissioning of project.
iii. 16% payment of Contract value shall be released after 1 year from date of commissioning of project and submission of performance certificate dully signed by customer and REIL in- charge and incentive received.
iv. 4% payment shall be released during remaining 4 year O&M period (1% every year) after submission of O&M certificate dully signed by customer and REIL in- charge.

15) <u>METERING AND GRIDCONNECTIVITY:</u>

Metering and grid connectivity of the solar PV system under this scheme would be the responsibility of the Bidder in accordance with the prevailing guidelines of the concerned DISCOM and / or CEA (if available by the time of implementation).

16) OTHER TERMS & CONDITIONS:

i 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:-

a. Work man's compensation act.
b. Minimum wages Act.
c. Payment wages Act.
d. Contact Labour regulation & abolition Act.
e. ESI, PF & Bonus Act.
f. Regulation under Indian Electricity Rules,
g. Safety & electrical Standard as applicable

ii Watch & Ward:-

The Vendor shall supply material (including REIL SPV Modules/Inverter) from his godown for installation work at site, shall continue to be responsible for their safe custody till they are installed in position, tested, commissioned and handed over to beneficiaries as per format provided by REIL.

iii Vendor shall arrange for compliance with statutory provision of safety regulation and departmental requirements of safety codes in respect of labour employed on the work by the Vendor. Failure to provide such safety requirements would make the Vendor liable for penalty. The department will make arrangement for the safety requirements at the cost of the Vendor & recover the cost thereof from him.

iv Company shall not be held liable or responsible for any illness and for physical harm sustained by the Vendor authorized representative during the execution of this agreement as they will not be deemed in any manner as employee of the company.

v The Vendor authorized representative shall take due care in handling the SPV system under this contract. Unwarranted activities, if found any, the company shall be authorized to recover the same from the Vendor.

vi Correction, over-writing and alteration should be initialed and dated by the Vendor otherwise the bid is liable to be rejected. The bid shall be typed or written in ink. Unit rates should be mentioned in the specified format failing which the bids are not likely to be considered.

vii All Vendors shall therefore, furnish declaration that their firm is not involved in any litigation that may have an impact of affecting or compromising the delivery if services as required under this assignment. It is also to be declared that their firm has not been black listed by any Central/State/ Public Sector Under takings in India. The declaration should be verified by the Notary Public.

viii The Vendor shall sign these conditions on each page at the end in token of acceptance of all the terms and it would be attached with the bid along with the declaration mentioned in above. He should also sign at the bottom of each of the pages of his bid to be submitted.

ix The company reserves the right to visit and inspect any site under this contract at any time and if defects are noted, payments may be stopped / recovered from Vendor. The company reserves the right to terminate this contract without giving any notice, if in the opinion of the company, the performance of the Vendor is not found satisfactory and according to terms stipulated by this contract.

x The company shall be fully absolved from the third party claims and damages during the execution of the contract.

xi All disputes arising out of this contract and questions relating to its interpretation etc. shall be referred to the sole arbitration of General Manager (RE), Rajasthan Electronics & Instruments Ltd., for his decision, which shall be final and binding on both parties.

xii The contract agreement shall be executed at Jaipur and shall be subject to Jaipur court jurisdiction alone.

xiii The company shall deduct the TDS as per the Income Tax Act.

xiv The Vendor shall be fully responsible for all repairs of the defects in maintenance during the period under contract.

17) NO NEAR RELATIVE 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).

Annexure -IV

RAJASTHAN ELECTRONICS & INSTRUMENTS LIMITED, JAIPUR

Authorization Certificate

To

Date

Dy. General Manager (MM),

Rajasthan Electronics & Instruments Limited,

2, Kanakpura Industrial Area,

Jaipur-302034

Rajasthan

Dear Sir,

We M/s. ……..are authorizing M/s. …….. to submit tender document in reference to your tender no **REIL/RE/20-21/PP/20008……..** for Supply of BOS (Except SPV modules and inverters) , Design, Installation, Testing and Commissioning including Warranty and Operation & Maintenance for a period of 5 years of Grid Connected Solar PV Plant at Govt./PSUs Buildings in Karnataka and Tamilnadu.

On behalf of company ……

Name and Designation

Signed and sealed (who has signed the tender)

Annexure-V

RAJASTHAN ELECTRONICS & INSTRUMENTS LIMITED, JAIPUR

Tender ref. **REIL/RE/20-21/PP/20008**

UNDERTAKING OF NO NEAR RELATIVE

To

Date

DGM (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 m 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

Annexure -VI

RAJASTHAN ELECTRONICS & INSTRUMENTS LIMITED, JAIPUR

Tender ref. **REIL/RE/20-21/PP/20008**

CERTIFICATE FOR NON BLACK LISTING

To,

Date

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

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 –VII

RAJASTHAN ELECTRONICS & INSTRUMENTS LIMITED, JAIPUR

Tender ref. **REIL/RE/20-21/PP/20008**

CACERTIFICATE

To

Date

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

Dear Sir,

It is certified that M/s ……. is falling under MSE category as per guidelines contained in the provisions of the MSMED Act,2006 and notification No. S.P. 1722(E) dated 05.10.2006 and having Udhyog Adhar no. …….. We also certify that the investment in plant and machinery (Imported and indigenous) ason date……..is Rs……..

Chartered Accountant

Firm name:-

Signature with seal

UDIN……

Annexure -VIII

RAJASTHAN ELECTRONICS & INSTRUMENTS LIMITED, JAIPUR

Check List

Sr. No.	Required Documents	Remark
1.	Sealed and signed process compliance form. (Annexure-I)	
2.	Sealed and signed scope of work (Annexure-II)	
3.	Sealed and signed General terms & conditions of tender (Annexure-III)	
4.	Authorization certificate (Annexure-IV)	
5.	Sealed & signed Undertaking of No Near Relative (Annexure V)	
6.	Sealed and signed under taking as per annexure-VI from manufacture for nonblack listing.	
7.	Sealed & signed CA Certificate (Annexure VII)	
8.	Check list (Annexure-VIII)	
9.	All Annexure (D,G,H,K,L,M)	

Annexure-D

OPERATION AND MAINTENANCE GUIDELINES OF GRID CONNECTED PV PLANTS

For the optimal operation of a PV plant, maintenance must be carried out on a regular basis.

All the components should be kept clean. It should be ensured that all the components are fastened well at their due place.
Maintenance guidelines for various components viz. solar panels, inverter, wiring etc. are discussed below:

1. SOLAR PANELS

Although the cleaning frequency for the panels will vary from site to site depending on soiling, it is recommended that

- ✓ The panels are cleaned at least once every fifteen days.
- ✓ Any bird droppings or spots should be cleaned immediately.
- ✓ Use water and a soft sponge or cloth for cleaning.
- ✓ Do not use detergent or any abrasive material for panel cleaning.
- ✓ Iso-propyl alcohol may be used to remove oil or grease stains.
- ✓ Do not spray water on the panel if the panel glass is cracked or the back side is perforated.
- ✓ Wipe water from module as soon as possible.
- ✓ Use proper safety belts while cleaning modules at inclined roofs etc.
- ✓ The modules should not be cleaned when they are excessively hot. Early morning is particularly good time for module cleaning.
- ✓ Check if there are any shade problems due to vegetation or new building. If there are, make arrangements for removing the vegetation or moving the panels to a shade-free place.
- ✓ Ensure that the module terminal connections are not exposed while cleaning; this poses a risk of electric shock.
- ✓ Never use panels for any unintended use, e. g. drying clothes, chips etc.
- ✓ Ensure that monkeys or other animals do not damage the panels**.**

2. CABLES AND CONNECTION BOXES

- ✓ Check the connections for corrosion and tightness.
- ✓ Check the connection box to make sure that the wires are tight, and the water seals are not damaged.
- ✓ There should be no vermin inside the box.
- ✓ Check the cable insulating sheath for cracks, breaks or burns. If the insulation is damaged, replace the wire.
- ✓ If the wire is outside the building, use wire with weather-resistant insulation.
- ✓ Make sure that the wire is clamped properly and that it should not rub against any sharp edges or corners.
- ✓ If some wire needs to be changed, make sure it is of proper rating and type.

3. INVERTER

- ✓ The inverter should be installed in a clean, dry, and ventilated area which is separated from, and not directly above, the battery bank**.**
- ✓ Remove any excess dust in heat sinks and ventilations. This should only be done with a dry cloth or brush.
- ✓ Check that vermin have not infested the inverter. Typical signs of this include spider webs on ventilation grills or wasps' nests in heat sinks.
- ✓ Check functionality, e.g. automatic disconnection upon loss of grid power supply, at least once a month.
- ✓ Verify the state of DC/AC surge arrestors, cable connections, and circuit breakers.

4. SHUTTING DOWN THE SYSTEM

- ✓ Disconnect system from all power sources in accordance with instructions for all other components used in the system.
- ✓ Completely cover system modules with an opaque material to prevent electricity from being generated while disconnecting conductors.
- ✓ To the extent possible, system shutdown will not be done during day time or peak generation.

INSPECTION AND MAINTENANCESCHEDULE

Component	Activity	Description	Interval	By
PV Module	Cleaning	Clean any bird droppings/ dark spots on module	Immediately	User/Technician
	Cleaning	Clean PV modules with plain water or mild dishwashing detergent. Do not use brushes, any types of solvents, abrasives, or harsh detergents.	Fortnightly or as per the site conditions	User/Technician
	Inspection (for plants > 100 kWp)	Use infrared camera to inspect for hot spots; bypass diode failure	Annual	Technician

PV Array	Inspection	Check the PV modules and rack for any damage. Note down location and serial number of damaged modules.	Annual	User/Technician
	Inspection	Determine if any new objects, such as vegetation growth, are causing shading of the array and move them if possible.	Annual	User/Technician
	Vermin Removal	Remove bird nests or vermin from array and rack area.	Annual	User/Technician
Junction Boxes	Inspection	Inspect electrical boxes for corrosion or intrusion of water or insects.	Annual	Electrician
Component	**Activity**	Description	**Interval**	**By**
		Seal boxes if required. Check position of switches and breakers. Check operation of all protection devices.		
Wiring	**Inspection**	Inspect cabling for signs of cracks, defects, lose connections, overheating, arcing, short or open circuits, and ground faults.	**Annual**	**Electrician**
Inverter	**Inspection**	Observe instantaneous operational indicators on the faceplate of the inverter to ensure that the amount of power being generated is typical of the conditions. Inspect Inverter housing or shelter for physical maintenance, if required.	**Monthly**	**Electrician**
Inverter	**Service**	Clean or replace any air filters.	**As needed**	**Electrician**

Instruments	**Validation**	Spot-check monitoring instruments (pyranometer etc.) with standard instruments to ensure that they are operational and within specifications.	**Annual**	**PV Specialist**
Transformer	**Inspection**	Inspect transformer oil level, temperature gauges, breather, silica gel, meter, connections etc.	**Annual**	**Electrician**
Tracker (if present)	**Inspection**	Inspect gears, gear boxes, bearings as required.	**Annual**	**Technician**
	Service	Lubricate tracker mounting bearings, gearbox as required.	**Bi-annual**	**Technician**
Plant	**Monitoring**	Daily Operation and Performance Monitoring	**Daily**	**Site in charge**
Spare Parts	**Management**	Manage inventory of spare parts.	**As needed**	**Site in charge**
Component	**Activity**	Description	**Interval**	**By**
Log Book	**Documentation**	Document all O&M activities in a workbook available to all service personnel	**Continuous**	**Site in charge**

Annexure- G

QUALITY CERTIFICATION, STANDARDS AND TESTING FOR GRID-CONNECTED ROOFTOP SOLAR PV SYSTEMS/ POWER PLANTS

Quality certification and standards for grid-connected rooftop solar PV systems are essential for the successful mass-scale implementation of this technology. It is also imperative to put in place an efficient and rigorous monitoring mechanism, adherence to these standards. Hence, all components of grid-connected rooftop solar PV system/ plant must conform to the relevant standards and certifications given below:

Fuses	
IS/IEC 60947 (Part 1, 2 & 3), EN 50521	General safety requirements for connectors, switches, circuit breakers (AC/DC): a) Low-voltage Switchgear and Control-gear, Part 1: Generalrules b) Low-Voltage Switchgear and Control-gear, Part 2: CircuitBreakers c) Low-voltage switchgear and Control-gear, Part 3: Switches, disconnectors, switch-disconnectors andfuse-combination units d) EN 50521: Connectors for photovoltaic systems – Safety requirements andtests
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)	Electricalinstallationsofbuildings-Part5-53:Selectionanderectionof electrical equipment - Isolation, switching andcontrol
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 outdoorinstallation)
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/IS 4759	Material for the structure mounting

Note- Equivalent standards may be used for different system components of the plants. In case of clarification following person/agencies may be contacted.

- Ministry of New and Renewable Energy (Govt. of India)
- National Institute of Solar Energy

Annexure-H

PROJECT REPORT FORMAT

Format for Summary Project Report for

Grid Connected Rooftop and Small SPV Power Plants

1. Name of Bidder
2. RfS no.
3. Project details (Site location & Address)
4. Brief about the Rooftop Solar Power Generation System
5. Details of the beneficiary
6. Specifications of the Components and Bill of Material/ Quantities

Sl. no	Component	Specifications	Quantity	Make
A	Solar PV module			
A.1	Aggregate Solar PV capacity (kWp)			
B	Grid Tie inverter (Type and Capacity)			
B.1	Aggregate Inverter capacity (kVA)			
C	Module mounting structure (Certified by a Structural Engineer (Mandatory for 101 kWp to 500 kWp)			
D	Array Junction Box			
E	AC Distribution Board			
F	Cable (All type)			
G	Earthing Kit (maintenance free)			
H	Meters			
I	Online monitoring system			
J	Any other component			
K	Transformer			

7. Expected output/annum
8. Respective drawings for layout, electrical wiring connections, earthing, components etc.
9. Connectivity details with grid and metering arrangement (with sketch diagram)
10. Copy of electricity bill of the beneficiary and consumer number
11. Any other information
12. Documentary proof regarding beneficiary type as per clause 1.1 of the RfS

(The above information should be limited up to 2-3 pages only)

Annexure K

Monthly O & M Report

Month and year:
Name of the bidder:
RFS ref no.:
Project Capacity:
Address of the site:

Component	Activity	Description	Date	Name / Signature	*Remarks
PV Module	Cleaning	Immediately clean any bird droppings/ dark spots on module.			
	Cleaning	Clean PV modules with plain water or mild dishwashing detergent.			
	Inspection (for plants > 100 kW_p)	Infrared camera inspection for hot spots; bypass diode failure.			
PV Array	Inspection	Check the PV modules and rack for any damage.			
	Inspection	Ifanynewobjects,suchas vegetation growth etc.,are causing shading ofthe array. Remove if any.			
	Vermin Removal	Remove bird nests or verminfromarrayandrack area.			
Junction Boxes	Inspection	• Inspect electricalboxes for corrosion, intrusion of water orvermin. • Check position of switches andbreakers. • Check status ofall protection devices.			
Wiring	Inspection	Inspectcablingforsignsof cracks, defects, lose connections, corrosion, overheating, arcing,short			
Component	**Activity**	Description	Date	Name / Signature	*Remarks
		or open circuits, and ground faults.			
Inverter	**Inspection**	• Observe instantaneous operational indicators on thefaceplate. • Inspect Inverterhousing or shelter for any			

		physicalmaintenance. • Check forconnection tightness.			
Inverter	**Service**	Clean or replace any air filters.			
Instruments	**Validation**	Verify monitoring instruments (pyranometer etc.) with standard instruments to verifytheiroperationwithin tolerance limits.			
Transformer	**Inspection**	Inspect transformer oil level,temperature gauges, breather, silica gel,meter, connections etc.			
Plant	**Monitoring**	Daily Operation and Performance Monitoring.			
Spare Parts	**Management**	Manage inventory of spare parts.			
Log Book	**Documentation**	Maintain daily log records.			
Tracker (if any)	**Inspection**	Inspect gears, gear boxes, bearings, motors.			
	Service	Lubricate bearings, gear as required.			

*****Provide details of any replacement of systems/components, damages, plant/inverter shut down (planned/forced), breakdown, etc under remarks.

*Dailyregisteristobemaintainedbythebidderateachlocationgreaterthan50kWp.Thesamemay be inspected by SECI or its authorised representative at any time of O&M period. The Register will havetheinformationaboutthedailygeneration,Inverterdowntime ifany,Gridoutages.

SignatureoftheAuthorizedsignatory
of theBidder

Annexure L

Project Completion Report for Grid-Connected Rooftop			
Financial year * :			
Approval No. * :			
Proposal Title :			
Installed by agency :			
Project initiated by :			
Title of the Project* :		Capacity (kWp)*:	
Category of the organization / beneficiary* :		Name of the contact person* :	
Address of contact person* :			
State* :		District/City* :	
Mobile* :		Email* :	
Telephone No. :	STD code-	Website :	
Other info			
Electricity Distribution Company Name :			
Electricity consumer account no. as per electricity bill :		as on Date :	
Bank Details of Beneficiary			
Name of A/c holder :			
Name of Bank :			
Name of Branch and Address :			
Bank IFSC Code :			
9 Digit Micr Code :			
Type of Account :			
Account No. :			
Adhar Card Number :			
Technology Description & System Design /Specification			
(Compliance to BIS/IEC Standards is mandatory)			
1. Module			
Capacity/Power of each PV Module(Wp)* :	1. Capacity/Power 2. Capacity/Power		1. Nos: 2. Nos:
Cumulative Capacity of Modules(KWp):			
Solar cell technology :			
Module efficiency (in Percentage) :			
2. Inverters			
Type of inverter :			
Make of inverter :			
Sl. No. of Inverters:			
Capacity/Power of each PCU/inverters (VA)* :	Capacity/Power Nos.		
Capacity/Power of PCU/inverters (KVA) :			
Inverter efficiency (Full load) :			
(in percentage)			
3. Metering Arrangement			
Details of Metering			

Type of Meter* :			
Make of Meter :			
5. Other informations			
Units of electricity generated by the solar plant as per meter (in KWh):			
Monitoring Mechanism :			
No. of personnel to be trained in O&M :			
Task & Expected Schedule(in Months) :			
Grid connectivity level			
Grid connectivity level phase* :		Grid connectivity level Voltage* :	
Costing of Project			
Hardware cost :	Rs.	Total Cost of Installation :	Rs.
Means of Finance			
Envisaged Central Financial Assistance from MNRE*	Rs.		
Incentive from states if any	Rs.		
Contribution of Beneficiaries*	Rs.		
Other Source (s) of Funding	Rs.		

Signature of Installer

Name:-
Contact No:-

Signature of Beneficiary/Customer

Name:-
Contact No:-

Annexure-M

INTIMATION TO DISCOM FOR IMPLEMENTATION OF GRID CONNECTED ROOFTOP SOLAR PV PLANT UNDER ----------SCHEME

To, **Date:**

(Designated Officer, DISCOM

1.	Name of SPD/Implementing Agency	
2	Name of the Consumer*	
Site Details*		
3	Address of the Rooftop Project Site:*	H No:
		Street Name:
		Village Name:
		District Name:
		State:
		Pin Code:
4	Phone / Mobile no. *	
5	Email Id:	
6	Electricity Consumer No. *	
7	Category(Please)*	⊙ Residential ⊙Commercial ⊙Industrial ⊙ Educational ⊙Government ⊙Others,Specify
8	Installed Plant Capacity (kWp)*	
9	Connected load (kVA)*	
10	Voltage level at interconnection*	⊙ 415V ⊙ 11kV ⊙ above 11kV
11	Nearest Transformer Details	Location: Capacity:
12	Details of Inverter with Anti-Islanding Protection* Phase (Φ): (Please) Galvanic Isolation (Please)	Make: Capacity: ⊙ Singlephase ⊙3-Phase ⊙ Inside Inverter ⊙OutsideInverter
14	Both AC and DC components of the SPV power plants Earthed*: ⊙	
15	CEIG Inspection required*	⊙Yes ⊙ No
16	If, Yes, Inspection date * (Attach copy of CEIG Certificate)	
18	Bank Account details	Account No. Bank Branch
19	Date of Grid Synchronisation*	
20.	Net metering and grid connectivity (Attach acknowledgment from DISCOM, if received)	Applied on:
		Fees Deposited On:

*to be provided mandatorily

It is certified that the information furnished above is true to the best of my knowledge.

Consumer / Authorised Signatory of Implementing Agency on behalf of consumer

Copy To:

Engineer In-charge, Solar Energy Corporation of India Limited, New Delhi-17

BANK GUARANTEE TOWARDS EARNEST MONEY DEPOSIT

Bank Guarantee No. Date

To,
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…… dated ……).M/s. ……(Bidder Name) having its registered office at …….....' (hereinafter called the bidder) wish to participate in the said Bid Supply of BOS (Except SPV modules and inverters) , Design, Installation, Testing and Commissioning including Warranty and Operation & Maintenance for a period of 5 years of 230 kWp Grid Connected Solar PV Plant at Govt./PSUs Buildings in Karnataka and Tamilnadu
As an irrevocable bank guarantee against Bid Security for an amount of Rs. Sixty Five Thousand only (Rs. 65,000/- only) 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 Rajasthan Electronics & Instruments Limited the amount of Rs. Sixty Five Thousand only (Rs. 65,000/- only) 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 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.
Not withstanding anything contained herein above:

i) Our liability under this guarantee shall not exceed Rs. Sixty Five Thousand only (Rs. 65,000/- only)

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)

Bank details of e- payment

1. Name & Address	**:**	Rajasthan Electronics & Instruments Ltd., Jaipur 2 Kanakpura Industrial Area Sirsi Road,Jaipur
2. Contact No.:	**:**	Tel.: (0141) 2470908, Fax No. 0141-2470531
3.Name of the bankers	**:**	Punjab National Bank, Mid Corporate Branch, M. I. Road, Jaipur (Raj.) (Branch Code 0221)
4.MICR Code No.	**:**	302024003
5.Bank Account No.	**:**	0221008700000152 (Cash-Credit account)
6.RTGS/IFSC Code No.	**:**	PUNB 0022100
7.PAN No.	**:**	AABCR1528G
8.Service Tax No.	**:**	AABCR1528GST001
9.TIN No /VAT No..	**:**	08202102675
10. GST No.	**:**	08AABCR1528G1ZL