

Notice Inviting Tender

(Invited through e-Tendering mode only)

(Limited to Agencies, who are RECPDCL Channel Partners as mentioned in "Annexure - 13")

For

**Design, Supply, Installation, Commissioning & Maintenance for 5 years of Grid Connected Rooftop Solar PV
Power Plant of capacity 15 Kwp at
Kishori Raman Girls Inter College, Kotwali Road, Choubey Para, Mathura, Uttar Pradesh – 281001**

No. RECPDCL/CSR/Solar/e-Tender/2020-21/426 Dated: 14.07.2020

REC Power Distribution Company Limited (RECPDCL)

(A wholly owned subsidiary of REC Ltd., a 'Navratna CPSE' Under Ministry of Power, Govt. of India)

CIN No. of RECPDCL: U40101DL2007GOI165779

Corporate office

REC Power Distribution Company Limited,
A-10, 4th Floor, Sector-1 Noida - 201301,
Uttar Pradesh, India
Website: www.recpdcl.in

Description of task, e-tender submission format and procedure is provided in the NIT document available on RECPDCL website (www.recpdcl.in), REC website (www.recindia.nic.in), e-tendering website (www.tenderwizard.com/REC), Central Public Procurement Portal www.eprocure.gov.in

Important Dates	
Date of Release of NIT / Tender	14.07.2020
Last date for queries/ seeking clarification	21.07.2020 at 15:00 Hours
Pre Bid Meeting	20.07.2020 at 15:00 Hours
Last date of submission of Bid	29.07.2020 at 15:00 Hours
Date of Opening of Bids	29.07.2020 at 17:00 Hours

Note: Online registration has to be done at e-tendering website i.e. www.tenderwizard.com/REC in general; activation of registration may take about maximum 24 hours subject to the submission of all requisite documents required in the process.

**-Sd-
(Bhupender
Gupta)
Addl. C.E.O.**

[This document is meant for the purpose of engaging of Agencies against this tender and should not be transferred, reproduced or otherwise used for purposes other than specified/issued].

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SECTION-1

TENDER INFORMATION

Name of the Assignment:

Design, Supply, Installation, Commissioning & Maintenance for 5 years of Grid Connected Rooftop Solar PV Power Plant of capacity 15 Kwp at Kishori Raman Girls Inter College, Kotwali Road, Choubey Para, Mathura, Uttar Pradesh – 281001

Important Information

Sl. No.	Event	Date / Information
1	Date of Release of NIT / Tender	14.07.2020
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3	Pre Bid Meeting	20.07.2020 at 15:00 Hours
4	Last date of submission of Bid	29.07.2020at 15:00 Hours
5	Date of Opening of Bids	29.07.2020 at 17:00 Hours
6	Pre Bid Meeting Address	REC Power Distribution Company Limited 4th Floor, KRIBHCO Bhawan, Sector -1, Gautam Budh Nagar, Noida - 201301.
7	Tender document	The Tender document can be downloaded and viewed from any of the website: www.recpdcl.in (or) www.recindia.nic.in (or) www.eprocure.gov.in (or) www.tenderwizard.com/REC) at free of cost.
8	Earnest Money Deposit (EMD) #	Rs. 10,000/- (Ten Thousand Only)
9	Address for Bid Submission	Shri. Bhupender Gupta, Addl. Chief Executive Officer, REC Power Distribution Company Limited, A-10, 4th Floor, Kribhco Bhawan, Sector-1 Noida - 201301, Uttar Pradesh, India. TeleFax: 0120-4383768, Email: csr.delhi@recpdcl.in
10	Contact Person	Shri. Sumit Singh, Dy. Manager (Engg./CSR), REC Power Distribution Company Limited (RECPDCL), Phone: 0120-4383783;Fax:0120-4383768, Email: csr.delhi@recpdcl.in

The EMD (Earliest Money Deposit) is to be submitted by all the participating bidders in the form of demand draft/Bank Guarantee of an amount of Rs.10,000/- (Ten thousand only) of any schedule Indian bank in favour of REC Power Distribution Company Limited, Payable at Noida with a validity of six months form date of bid submission and 3 months claim period. The EMD of unsuccessful bidder shall be returned within 90 days from the award of contract and EMD of successful bidder shall also be returned after acceptance of work order and submission of PBG (Performance Bank Guaranty) i.e. 10% of the Contract Value.

- The bid shall remain valid for a period of 180 days from the last date of bid opening.

SECTION-2

PREFACE, INTENT AND PROJECT SITE DETAILS

REC Power Distribution Company Limited (RECPDCL) is an Empanelled Government Agency under Ministry of New & Renewable Energy (MNRE), Govt. of India. RECPDCL is an ISO 9001:2015 (Quality Management System), ISO 14001:2015 (Environmental Management System), OHSAS 18001:2007 (Occupational Health & Safety) Certified, a wholly owned subsidiary of Rural Electrification Corporation Ltd (REC), a “*Navratna CPSE*” under the Ministry of Power, Govt. of India.

RECPDCL is engaged in providing value added consultancy services in power sector arena covering Power Generation, Renewable Energy Sector and Energy Efficiency programs including Govt. of India’s power schemes for power utilities across the country and various regulatory assignments with CERC/SERCs. It includes the project works under Rural Electrification, Project Management Consultancy (PMC) works, Detailed Project Report (DPR) preparation for R-APDRP/DDUGJY/RGGVY/NEF and other power project scheme, Third Party Inspection of DDUGJY/ RGGVY/other projects, Feeder Renovation Program, Feeder separation, HVDS program, Lender’s Engineers assignment, IT related assignments in Distribution sector including Energy Audit, Evaluation study for HVDS/Distribution network, AT&C Loss assessment, System study, MRI based billing and Cost Book Data Preparation.

RECPDCL is currently engaged in providing Project Management Consultancy / Project Implementing Agency services to various Discoms across India under different Govt. of India schemes viz., DDUGJY, IPDS, BRGF, Infra projects, R-APDRP, Renewable Energy, Energy Efficiency programs, and other miscellaneous Consultancy assignments.

RECPDCL is intend to execute this work under his CSR for the implementation of Grid Connected Roof top solar power plant capacity of 15 kWp on below mentioned buildings of Kishori Raman Girls Inter College, Kotwali Road, Choubey Para, Mathura, Uttar Pradesh – 281001. Technical specifications for Grid Connected Rooftop Solar PV Plant of 15 kWp at Kishori Raman Girls Inter College, Kotwali Road, Choubey Para, Mathura, Uttar Pradesh – 281001 are mentioned at **Annexure-1**.

DETAILS OF KISHORI RAMAN GIRLS INTER COLLEGE BUILDING:

Area / Building	Number of Buildings	Proposed Capacity (Kwp)	Total Estimated Solar Capacity (Kwp)
Main Campus Building of Kishori Raman Girls Inter College, Mathura	1	15 Kwp (Rooftop)	15
Total Capacity			15

Project Site Details

Following sites have been selected for implementation. The Bidder is requested to verify the shadow free roof space at site from its end.

1. Main Campus Building

Plant Capacity: 15 KWp

Site Particulars:

- (a) Estimated Shadow Free Available Area: 3000 sq. m.
- (b) Coordinated: 27.500770 N, 77.689820 E

SECTION – 3

INSTRUCTIONS TO BIDDING AGENCIES

Submission of Bid

Bidder shall submit their responses online through e-tendering website www.tenderwizard.com/REC

A. The submission and opening of Bids will be through e-tendering process.

Bidders can download Bid document from the RECPDCL web site i.e. <http://www.recpdcl.in> or portal.recpdcl.in or www.recindia.com or eprocure.gov.in and e-tendering regd. link is given in RECPDCL website i.e. www.tenderwizard.com/REC

***Note:** To participate in the e-Bid submission, it is mandatory for bidder to have user ID & Password. For this purpose, the agency has to register them self with REC through tender Wizard Website given below. Please also note that the agency has to obtain digital signature token for applying in the Bid. In this connection vendor may also obtain the same from tender Wizard.*

Steps for Registration

- (i) Go to website <http://www.tenderwizard.com/REC>
- (ii) Click the link 'Register Me'
- (iii) Enter the details about the E-tendering as per format
- (iv) Click 'Create Profile'
- (v) E-tender will get confirmation with Login ID and Password

B. Steps for application for Digital Signature from Bid Wizard:

Download the Application Form from the website <http://www.tenderwizard.com/REC> free of cost. Follow the instructions as provided therein. In case of any assistance you may contact RECPDCL officers whose address is given at the Bid.

Bids to be submitted through online mode on website www.tenderwizard.com/REC in the prescribed form.

Submission of Bid:

1. Bidders are hereby requested to submit their bids in the following format:
 - a. Earnest Money to be sealed in a separate envelope subscribing "Earnest money" for "Design, Supply, Installation, Commissioning, & Maintenance for 5 years of Grid Connected Rooftop Solar PV power plant of capacity 15 kWp at Kishori Raman Girls Inter College, Kotwali Road, Choubey Para, Mathura, Uttar Pradesh – 28100
 - b. Financial Bid is to be submitted through online mode only on website www.tenderwizard.com/REC. No other mode of submission of bid shall be accepted under any circumstances.
2. The Earnest Money envelope also subscribing due date, addressed to Addl. CEO, REC Power Distribution Company Limited, 4th Floor, KRIBHCO Bhawan, Sector -1, Noida-201301 shall be delivered into the tender box marked with name of work and placed at the main reception counter of RECPDCL on or before due date & time specified in the bid.
3. Opening of Earnest Money & Financial Bids would take place simultaneously on the date & time of bid opening in the presence of the intending bidders or their Authorized Representatives who may wish to be present.
4. The Financial Bids shall then be evaluated by the Evaluation Committee of RECPDCL.
5. RECPDCL does not own any liability if the bids are not submitted within due date and time as per requirement.

6. EMD Envelope received after the due date and time or if submitted to any other place other than that mentioned above, shall not be considered and would be liable to be rejected without assigning any reason whatsoever. REC shall not be responsible for late receipt of the EMD Envelope submitted by any Bidder. The bidders may depute their authorized representatives at the time of opening of Bid.
7. RECPDCL reserves the right to extend the deadline for submission of bids by issuing and amendment in which case all rights and obligation of the REC and the bidders previously subject to the original deadline will then be subject to the new deadline.
8. Withdrawal or modification of a bid between the deadline for submission of bids and the expiration of the original period of bid validity may result in the forfeiture of the EMD.
9. Document to be enclosed offline & online:

- a) **Earnest Money** of Rs.10,000/-: **(Through offline mode)** Demand Draft/Pay order of required amount of Earnest Money issued in favor of “REC Power Distribution Company Limited” payable at Noida required to be placed. Following information should be marked on the face of the sealed envelope.

Name of Party.....
Tender No.....
Earnest Money Amount
Issuing Bank.....
Date.....

- b) **Financial Bid (Online Mode only):** Financial Bid as per enclosed Format in Annexure – V.

Financial bid to be submitted in the specific format designed same may be downloaded from website www.tenderwizard.com/REC and after filling the form it is to be uploaded through digital signature.

The all document should be addressed to.

Addl. CEO

REC Power Distribution Company Ltd.

Plot No.-A-10, 4th Floor, Sector-1,

KRIBHCO Bhawan, Noida-201301

Note: (All papers that comprise the Bid document of the concerned Bid must be numbered. An index of each page should also be provided.)

SECTION – 4
DETAILED SCOPE OF WORK

Broad scope of work for the given task but not limited to the following:

Design, Supply, Testing, Installation, Commissioning and Maintenance for 5 (Five) years Grid Connected Rooftop Solar PV Power Plant of 15 Kwp at Kishori Raman Girls Inter College, Kotwali Road, Choubey Para, Mathura, Uttar Pradesh – 281001.

Work involves the following major activities:

1. Bidder should execute Work contract agreement with RECPDCL after awarding of work as mentioned in this tender document.
2. Execution of All installation works should Comply Technical Specifications of Grid Connected Rooftop Solar PV Plant as mentioned in **Annexure-1**.
3. Preparation, submission and approval of the Design Report to be executed after survey of each site, Power evacuation drawings and Bill of Material of the Project. Bidders shall start the work only after obtaining approval of design, BOM and make of equipment's/material from RECPDCL.
4. Design should be done mapping the requirements of concerned authority without implication of any additional cost.
5. Design, Supply, Testing, installation, commissioning at site; including insurance coverage from procurement of all plant equipment till end of 5-year Comprehensive Maintenance Contract (CMC) period and storage of PV plant along with Inverter, distribution boards (AC and DC), cable, combiner box, and associated work including protection and measuring arrangements as well as of SPV compatible electrical systems and associated work including protection and measuring arrangements etc.
6. Preparation of route profile drawing along with electrical connection to consumers.
7. All civil works including all required supply of Solar PV plant and distribution lines.
8. All civil and electrical works of SPV compatible electrical systems and distribution lines.
9. Chief Electrical Inspector (CEI) Clearance if Required.
10. Submission of plant Technical Manual, User Manual, and O&M (Operation & Maintenance) manual.
11. Performance Acceptance Tests after installation & Commissioning have to be conducted for a period of 7 days as per section: 7 Clause no: 4. These will be conducted once in Half-Yearly basis for a period of 7 days as per mentioned clause.
12. Execution of Comprehensive Maintenance Contract (CMC) agreement after successful installation and commissioning as per format of Annexure-9.
13. Comprehensive Maintenance and monitoring up to 5 years after commissioning including providing spares and consumables. Scope of activities of Comprehensive Maintenance is specified at Section: 6 clause no: 7 of this tender document.
14. Provide training to the nominated persons for daily operations, monitoring and maintenance of power plant.
15. Any other works though not specifically mentioned but are required to finish the project works in all respects for its safe, reliable, efficient and trouble free operation shall also be taken to be included and the same shall be supplied and installed by the supplier without any extra cost.
16. **Coordination:** Agency shall inform the name, address, contact phone number of the Nodal Officer(s), assigned by agency to cover project site (Kishori Raman Girls Inter College, Mathura, Uttar Pradesh-281001) , who will report about their regular daily progress & performance of the assignment. Daily progress report, and Half-Yearly Solar Plant status reports should be sent to REC PDCL, Delhi offices in prescribed Performa. In case, absence of any information is adversely affecting the progress of work, the issue could be escalated to Addl. CEO, RECPDCL.

Scope of work and nature of work is indicative only; however RECPDCL reserves the right to add/delete items, relocate project area in scope/nature of work for smooth execution and completion of the project.

SECTION – 5

GENERAL CONDITIONS OF TENDER

1. Each bidder should submit **ONLY SINGLE** bid. Submission or participation in more than one bid will cause disqualification of all the proposals submitted by the bidder.
2. The bidder shall ensure that deputed personnel are trained and experienced for jobs as defined in scope of work for ensuring the high quality and correctness of jobs so that job is carried out in a highly professional, safe, and sound managerial manner.
3. RECPDCL reserves the right to accept or reject any or all bid requests without assigning any reason. RECPDCL reserves the right to waive off any shortfalls; accept the whole, accept part of or reject any or all responses to this tender.
4. RECPDCL reserves the right to cancel the tender at any stage and call for fresh tender.
5. RECPDCL reserves the right to modify, expand, restrict, scrap, re-float the tender without assigning any reason for the same.
6. RECPDCL reserves the right to change the Area / Buildings of Kishori Raman Girls Inter College, Mathura, Uttar Pradesh-281001 for Solar Plant installation and Commissioning.
7. The responder shall bear all costs associated with the preparation and submission of its bid, and RECPDCL will in no case be responsible or liable for these costs, regardless of the conduct or the outcome of the tender process.
8. RECPDCL reserves the right to withdraw the work & get it completed at the risk & cost of the agency, if performance of the agency is unsatisfactory, to whom work has been awarded. Further, the said agency may be black-listed for a period of one year or more for participating in any of the bids invited by RECPDCL. Also, RECPDCL would be free to intimate such black-listing to various state/central utilities/ Ministry of Power/ State Governments/ Other agencies not to consider the said agency for any assignment including of the same on websites.
9. RECPDCL reserves the right to conduct reverse auction.
10. Bidder has to specify Make, Model, Specification, unit, quantity of all Bill of Material (BOM) material items and components in Financial Bid format.
11. Bidders has to submit test certificate as specified under JNNSM issued by MNRE Govt. of India for Grid Connected Rooftop case, and subsequent addendums. The valid test reports of Bill of Material (BOM) components /materials issued by the accredited test centers of MNRE, GOI are to be submitted.
12. Declarations of the bidders to the effect that the complete plant including all the balance of system (BOS) are as per standard equivalent to those specified under JNNSM by MNRE.
13. In case of supply of any defect material or substandard material, the materials will be rejected & it will be the responsibility of the vendor for taking back & replacing the rejected materials at their own cost.
14. The supplied materials should be strictly as per specifications mentioned in the Tender; otherwise the material would be liable for rejection.
15. Validity of Bid is 180 days from the date of the opening of bid.
16. No price escalation is applicable on account of any statutory payments increase or fresh imposition of custom duty, excise duty, sales tax or duty leviable in respect of the major components in the said acceptance of the tender.
17. EMDs received late due to postal delay etc. will not be considered.
18. Bidder's quoted rates should be firm and fixed. No price variation and escalation will be allowed.
19. Bids must be submitted in English language only.
20. Incomplete, telegraphic or conditional tenders are not accepted.
21. Canvassing in any manner is strictly prohibited. The same will lead to rejection of the submitted bid.
22. The last date of receipt of bids from agencies is 29.07.2020 at 15:00 Hrs. Original, Sealed EMD documents will only be accepted during office hours on working days through deposit in the tender box kept for the purpose at REC Power Distribution Corporation Ltd. (RECPDCL), KRIBHCO Bhawan, A-10, Sector-1, Noida (UP)-201301. EMDs received after due date & time will not be accepted.
23. If due to any reason the due date is declared as a holiday, the tender will be opened on next working day at the same time.
24. The financial bid shall be opened on 29.07.2020 at 17:00 Hrs in RECPDCL office, Noida in the presence of such Bidders /their representatives, who desire to be present at the time of opening.
25. The bidders quoting abnormally low/high price may be rejected from consideration during bid analysis.

26. The bid validity of less than six (6) months shall not be considered. The validity can be further extended with mutual consent.
27. Any or all Bids may be rejected or accepted partially or fully without assigning any reason thereof by Chief Executive Officer, RECPDCL.
28. Bidders are requested to watch out RECPDCL website for change of events/additional information from time to time.
29. Wiring / Hardware cost of connecting Essential load (which use Solar generated power) as per end user's requirement is inclusive of contract value.
30. As Kishori Raman Girls Inter College, Mathura, Uttar Pradesh-281001 Solar project is a prestigious project, It is anticipated that bidders will put superior high quality Solar Equipments / components in this Solar Project.

Some of the preferred Make of Solar Equipment / Components are as specified below:

Solar PV Crystalline Modules: Insolation Energy (INA) / Tata Power Solar/ Waaree or equivalent reputed make

Inverters: Delta Electronics / Powerone/ ABB or equivalent reputed make

Cables: Poly Cab / KEI Cables or equivalent reputed make

LT Switchgear: ABB/ Hanger or equivalent reputed make

If bidders found quoted any low quality (Inferior) Solar Equipments / components, RECPDCL reserve its right to ask the bidder to change the Equipment / Components of above mentioned quality/Make. RECPDCL reserves to take final decision at its sole discretion. We confirm the following are the technical specifications of Items that will be used for Installation & Commissioning.

To Be Filled by Bidder:

Sl. No.	Item	Specification	Make	Model	Unit	Quantity
1	PV Module					
2	Module Mounting Structure					
3	Inverter					
4	Array Junction Box					
5	ACDB					
6	Cables					
7	Earthing Kit					
8	Lightning Arrestor					
9	GI Strip 25 mm x 5mm					
10	Fire Extinguishers					
11	SCADA System including Hardware					
12	Data Logger with Temperature and Irradiance sensors					
13	Other Items					

31. Items mentioned items here are major components only. Any items not specifically mentioned in this but are required to finish the work will be arranged by the Supplier.
32. RECPDCL will have the right to extend the Order to the successful bidder for supply, installation, commissioning and maintenance of additional solar projects with capacity up to 50% of tendered capacity within six months of placement of order under same unit price rate and same terms and conditions.
33. It is presumed that those participating bidders at Reverse auction are aware of the Project site location, and had visited the same.
34. In case of insufficient participation after Financial evaluation, RECPDCL may relax criteria, to keep at least 3 bidders in the competition.

SECTION – 6

Bid Evaluation Methodology

OPENING OF BIDS:

Opening of Bids will be through online only.

1. Bidders have to submit documents as per Section 3, Clause C (Submission of Documents).
2. Bids duly submitted, will be opened on the date and time indicated in this document in the presence of bidders or their authorized representatives who desire to present.
3. If due date of receipt / opening of bids happens to be a closed holiday, the bids would be received and opened on the next working day.
4. REC PDCL reserves the right to postpone and/or extend the date of receipt/opening of Bids or to withdraw the Tender notice, without assigning any reason thereof. In any such cases, the bidders shall not be entitled to any form of compensation from the Company.

EVALUATION OF BIDS:

1. The evaluation of financial bid will be done & price bids through e-procurement only.
2. The basis of evaluation shall be the cost/rate quoted in the Price Schedule Annexure-5. To further clarify, cost of supply, installation & commissioning along with maintenance and warranty and all applicable taxes shall be summed up for comparison and evaluation. Bidders are required to quote rate/cost on firm basis and no price variation on any account shall be considered.

If L1 price is more than expected price then RECPDCL reserves the right to conduct E-Reverse Auction (e-RA).

E -Reverse Auction (e-RA) Participation:

RECPDCL shall invite all Channel Partner bidders for participation in Reverse Auction for Design, Supply, Installation, Commissioning & Maintenance for 5 years of Grid Connected Rooftop Solar PV Power Plant of capacity of 15 kWp at Kishori Raman Girls Inter College, Mathura, Uttar Pradesh-281001

The ceiling price for conducting e-Reverse Auction for carrying out Design, Supply, Installation, Commissioning, & Maintenance for 5 years of Grid Connected Rooftop Solar PV Power Plant of capacity of 15 kWp at Kishori Raman Girls Inter College, Kotwali Road, Choubey Para, Mathura, Uttar Pradesh – 281001 is fixed at the rate of "**Rs 48.00 / Wp**"

This is inclusive of all taxes and duties. If any increase in Service tax percentage, accordingly the revised service tax is applicable.

e- Reverse auction (e-RA) will be done through e-tendering mode only and its schedule will be intimated. The bidder who stands as lowest L1 after conclusion of Reverse Auction event will be awarded the contract.

SECTION – 7

COMMERCIAL TERMS, CONDITIONS & OTHER PROVISIONS

1. COMMERCIAL TERMS & CONDITIONS:

1.1 PRICE:

The price will be inclusive of packing, forwarding, loading & unloading charges, cost of insurance, transportation for delivery at destination and training to users, technical personnel and field functionaries of RECPDCL, and all taxes and duties of Central & State Governments. At the time of release of payment to the Contractor/Supplier, TDS/WCT / Labour cess will be deducted as the case may be. Payment will be made as per capacity (kWp) pro rata basis.

1.2 SALES TAX & DUTIES ETC.:

All taxes and duties as prescribed both under Central and State Government sales tax rules would be applicable.

1.3 EARNEST MONEY DEPOSIT (EMD):

1.3.1 Earnest money Deposit amounting Rs 10,000/- (Ten Thousand only) shall be deposited along with bid in original in the form of Demand Draft (DD) in favour of 'REC Power Distribution Company Ltd' payable at Noida or in the form of Bank Guarantee (Bid Bank Guarantee) from a scheduled bank. In case of inadequacy or non-submission of EMD amount, the tender shall be deemed to be disqualified and summarily rejected in the evaluation.

1.3.2 Request for adjustment of Earnest Money Deposit against any previous dues with RECPDCL will not be considered.

1.3.3 EMD will be refunded to the unsuccessful bidders after finalization of the tender without any interest.

1.3.4 The Earnest Money Deposit will be returned to the successful bidder after furnishing Advance Bank Guarantee (ABG) for release of Mobilization advance and acceptance of RECPDCL's released work order. The EMD can also be adjusted against Advance Bank Guarantee upon request of successful bidder.

1.3.5 Bidder has to submit Advance Bank Guarantee of 10% contract value at the start of the project (after survey of project site). The mobilization advance will be adjusted proportionately in subsequent payments.

1.3.6 The validity of Earnest Money Deposit, shall have to be suitably extended if necessary on request by RECPDCL, without which the tender /work order shall be rejected.

1.3.7 Exemption for payment of EMD amount will be given to Micro and Small Enterprises (MSEs). However, relevant valid document / Certificate from MSE need to be submitted without which bidders are not entitled for any kind of exemption.

1.4 ADVANCE BANK GUARANTEE FEES:

Successful bidder has to furnish Advance Bank Guarantee of 100% of advance value for release of Mobilization advance with validity up to the target time for completion of installation as per format **Annexure - 8**. The mobilization advance will be adjusted proportionately in subsequent payments. Validity of Advance bank guarantee shall have to be suitably extended if necessary on request by RECPDCL, without which the tender/Work Order shall be rejected. The said deposit would be forfeited, if the supplies are not made as per the Terms & Conditions of the Work Order.

1.5 PERFORMANCE BANK GUARANTEE (PBG) FEES:

After successful installation of the awarded Solar Power plant, bidder must deposit Performance Bank Guarantee (PBG) fees @ **10%** of the Work Order value to RECPDCL as per format **Annexure - 10** with validity till completion of maintenance period. The said deposit would be forfeited, if the maintenance activities are not up to the satisfactory of RECPDCL. PBG will be refunded after the completion of the maintenance period of awarded Solar Plant, subject to satisfactory performance of the systems.

1.6 DELIVERY:

The materials must be delivered to the project site. The system should preferably be delivered to the consignee within one month of issue of Work Order. RECPDCL will not issue Form-C during procurement of Solar equipment / Items / Components.

1.7 QUANTITY:

The quantity / capacity mentioned in the tender might either increase or decrease according to our requirement. The order shall be placed to the approved bidder in phased manner.

1.8 CONSIGNEE: The Addl. CEO, RECPDCL, Noida/ Kishori Raman Girls Inter College, Mathura, Uttar Pradesh-281001

1.9 VALIDITY OF OFFER:

The offer must be kept valid for a period of 180 days from the date of opening of bid. No escalation clause would be accepted. The validity can be further extended with mutual consent.

1.10 MNRE Subsidy and Custom Duty & Excise Duty Exemption:

Bidders shall participate in e-Reverse Auction considering the following two things:

(a) MNRE Subsidy:

As per MNRE guidelines, MNRE Subsidy, if made available, will be credited to RECPDCL. Bidders/turnkey contractors cannot avail the benefit of the same.

(b) Custom Duty & Excise Duty:

Bidders can avail Custom Duty and Excise Duty Exemption for this 15 kWp capacity Solar Project.

1.11 WARRANTY:

The civil work components, mechanical structures, electrical works including power conditioners/Inverters/charge controllers/ distribution boards/digital meters/ all BOM material etc. and overall workmanship of the SPV power plants/ systems must be warranted against any manufacturing/design/ installation defects for a minimum period of 5 years.

PV modules used in solar power plants/ systems must be warranted for their output peak watt capacity, which should not be less than 90% at the end of 10 years and should not be less than 80% at the end of 25 years.

Any defect noticed during warranty period should be rectified/replaced by the supplier free of cost upon due intimation by the concerned Kishori Raman Girls Inter College, Mathura, Uttar Pradesh-281001/RECPDCL. Care should be necessarily taken to make the system operational within a week of reporting of defect. If the system is not made operational within fifteen days, RECPDCL may rectify the same and charge all expenses incurred on the said account to the vendor.

1.12 LIQUIDATED DAMAGES:

The systems are to be supplied and installed within the scheduled timelines as mentioned in Annexure-1 under "Requirements" -> Construction Time. For any delay in supply and installation of the system beyond the given scheduled date, the buyer shall without prejudice to its other remedies deduct from the order value as liquidated damage @ 1% of the delayed in commissioning the work per week of delay or part thereof up to maximum 10% of order value. Once the maximum is reached (i.e., 10 weeks of delay) the Work Order would be cancelled and the bank guarantee deposit would be forfeited.

2. SPECIFICATION:

The detailed technical specifications of the SPV system should be as specified under JNNSM issued by MNRE Govt. of India. The material must confirm to the specifications and standards mentioned in Technical Specifications specified in **Annexure-1**.

3. INSPECTION:

All tests and inspections shall be made at the place of delivery unless otherwise specifically agreed upon by the bidder and RECPDCL at the time of purchase if necessary.

4. PERFORMANCE ACCEPTANCE TESTS (PAT):

After installation, and charging, System shall be accepted after successful completion of Performance Acceptance Tests (PAT) for a period of 7 days as under

(1) Capacity Utilization Factor (CUF):

$$\text{Average Capacity Utilization Factor (CUF)} = (\text{Actual energy from the plant (kWh)}) / (\text{Plant Capacity (kWp)} \times 24 \times 365)$$

Commissioned Plant should perform at least 15% for acceptance of plant.

(2) Performance Ratio (PR):

$$\text{Performance Ratio (PR)} = \text{Energy measured (kWh)} / (\text{Irradiance (kWh/m}^2\text{) on the panel} \times \text{Active area of PV module (m}^2\text{)} \times \text{PV module efficiency})$$

(OR)

$$\text{Performance Ratio (PR)} = \text{Energy measured (kWh)} / (\text{Irradiance (kWh/m}^2\text{)} \times \text{Plant Capacity (kWp)})$$

Plant Performance Ratio should be at least 75%

After successful completion of PAT tests only, Solar plants will be handed over to the concerned authority. These will be conducted once in Half-Yearly basis for a period of 7 days and observations should be mentioned in Annexure-12.

5. PAYMENT TERMS:

1. Mobilization advance of 10% of contract value will be released after submission of Advance Bank guarantee for amount of 100% of Advance value and submission of detailed approved Drawings, Bill of Material (BOM), and Project implementation plan including timeline by the agency. The mobilization advance will be adjusted proportionately in the subsequent payments.
2. **50%** of contract value will be disbursed after the delivery of all the materials mentioned in the BOM for all awarded Solar PV plants and accepted by RECPDCL.
3. **30%** of contract value will be disbursed after completion of successful commissioning of all awarded SPV power plants and handover of all awarded SPV plants to Kishori Raman Girls Inter College, Mathura, Uttar Pradesh-281001. Bidder has to get Joint Commissioning and Handing over Certificate as per format of **Annexure-11**.
4. **10% of Contract value:** 2% payment on yearly basis after completion of each year of maintenance from date of handover of all awarded plants till completion of CMC period of 5 years (subjected to successful comprehensive maintenance).

Note: Final Payment will be released after submission of final claim certificate submitted by bidder, attached in Annexure-14.

6. SIGNING OF CONTRACT AGREEMENT:

Finally selected firm will submit the sealed copy of the purchase / work order signed on each page on behalf of the firm as token of acceptance to execute the work as per the terms and conditions laid down in this tender document

and Work Order. Selected firm will also execute/sign Contract Agreement with RECPDCL on India Non Judicial Stamp paper with validity from starting date of Work Order scope activities till end of CMC period (5 years).

7. COMPREHENSIVE MAINTENANCE CONTRCT (CMC):

Comprehensive Maintenance Contract (CMC) will be applicable from the date of commissioning of the system. The bidder must execute Comprehensive maintenance contract for the specified period after successful commissioning of project as per format **Annexure - 9** Offer without such CMC shall not be considered and contract will not be awarded. The scope of CMC must cover supply of spare parts and all consumables, all warranty parts including services during the contract in force. The payment of annual maintenance charges under the Comprehensive Maintenance Contract shall depend upon the functionality of the system duly certified by the concerned office/ Authorized officials of RECPDCL. Upon receipt of such certificates, CMC amount as applicable shall be paid at the end of each quarter of maintenance period.

Scope of CMC Activities:

Solar Modules:

1. Fortnightly Cleaning and wiping of solar panels using fresh water. Water to be provided Kishori Raman Girls Inter College, Mathura, Uttar Pradesh-281001
2. Monthly Visual inspection of modules and mounting clamps.
3. Check modules for any broken glass/ discolouration, misaligned modules

Module mounting structure:

1. Visual inspection of mounting structures, screws and fasteners.
2. Tightening of screws and fasteners as needed

Junction Box:

1. Checking and tightening of solar inter connections.
2. Visual inspection of junction boxes and wiring.
3. Tightening of any interconnections as needed.

Inverters:

1. General Cleaning.
2. Check LCD displays of inverters.
3. Check integrity of wiring.
4. Visual inspection of mechanical fixings of inverters
5. Inspection of cables

Cables:

1. Visual inspection of DC and AC cables

Remote Monitoring:

1. SCADA daily production data recorded
2. Physical verification of communication cables and associated equipment.
3. Internet connectivity, configuration (Remote connectivity HW)
4. Check the data reports like graphs.
5. Analysis, recommendations and feedback

Note: 1. Successful bidder have to submit quarterly solar generation report to RECPDCL on csr.delhi@recpdcl.in
2. In case of any breakdown, Successful bidder has to rectify fault within 3 working days.

8. SPLIT OF WORKS:

In view of various buildings, limited time available for completion of the project, RECPDCL reserves the right to increase / decrease / split of the work to agencies based on buildings / capacity at the sole discretion of the RECPDCL. Suitable amendment / communication shall be issued in the event of variations in quantities.

9. TRAINING PROGRAMMES:

The bidder should conduct Training programs (General, Technical, Maintenance, Safety) to users, technical personnel & field functionaries of RECPDCL at site, on day-to-day operation of all equipment of plant, Relay settings, Switchgear positions, standard parameters, repair and maintenance of the system. Technical training should be of minimum two days period and Maintenance training period is of 1 week.

10. FORCE MAJEURE:

Force majeure shall mean any cause, existing or future, which is beyond the reasonable control of Bidder or RECPDCL including, but not limited to, acts of God, storm, fire, floods, explosion, epidemics, quarantine, earthquake, strike, riot, lock out, embargo, interference by civil or military authorities, acts, regulations or orders of any governmental authority in their sovereign capacity, acts of war (declared or undeclared) including any acts of terrorism, and all other such acts of similar or analogous nature (where all such acts to be collectively referred to as "Force Majeure"). RECPDCL and Bidder shall not be liable for the failure to perform any obligation in terms of this Proposal if and to such extent such failure is caused by a Force Majeure, provided that none of such acts of Force Majeure will relieve the Customer from meeting its payment obligations.

11. DISPUTE:

For adjudication of any dispute between RECPDCL and the bidder arising in any case, reference can be made to any Law courts under the jurisdiction of New Delhi High Courts only.

The Addl. Chief Executive Officer, RECPDCL reserves the right to accept or reject any or all tenders without assigning any reason thereof.

I/We have carefully read and understood the above terms and conditions of the tender and agree to abide by them.

(SIGNATURE OF BIDDER WITH SEAL)

Designation:

Name:

Date:

ANNEXURE – 1

Technical Specifications of Grid Connected Rooftop Solar PV Power Plant

Location:

The Kishori Raman Girls Inter College, Kotwali Road, Choubey Para, Mathura, Uttar Pradesh – 281001.

Specifications:**Geographical :**

Global Horizontal Irradiance GHI (Annual average)	6 kWh/m ² /day
Latitude	27.50°N
Longitude	77.68°E
Total number of Areas / Buildings	1 Nos

Requirements:

Capacity of Solar PV Power plant	15 Kwp
Type of Solar PV Power Plant	Grid Connected Rooftop Solar PV Power Plant
PV Modules placing	Facing towards South
Annual Average Capacity Utilization Factor (CUF) / Plant Load Factor (PLF)	Min. 15%
Annual Power Generation (as per 15 kWp capacity)	Min 22500 KWh
Energy Metering and Gross Metering	As per local Discom.
Construction Time	Three (3) Months from date of acceptance of Letter of Award
Testing compliance	as per MNRE guidelines

The Proposed projects shall be commissioned as per the technical specifications given below.**1. Solar Photovoltaic Modules**

1.1 The PV modules used should be Indian.

1.2 The PV modules used must qualify to the latest edition of IEC PV module qualification test or equivalent BIS standards Crystalline Silicon Solar Cell Modules IEC 61215/IS14286. In addition, the modules must conform to IEC 61730 Part-1- requirements for construction & Part 2 ± requirements for testing, for safety qualification or equivalent IS.

- a) For the PV modules to be used in a highly corrosive atmosphere throughout their lifetime, they must qualify to IEC 61701/IS 61701.
- b) The total solar PV array capacity should not be less than allocated capacity (kWp) and should comprise of solar crystalline modules of minimum 300 Wp and above wattage. Module capacity less than minimum 300 Wp should not be accepted.
- c) Protective devices against surges at the PV module shall be provided. Low voltage drop bypass diodes shall be provided.
- d) PV modules must be tested and approved by one of the IEC authorized test centers.
- e) The module frame shall be made of corrosion resistant materials, having Pregalvanized/ anodized Aluminium or superior material.

f) Power Producer shall carefully design & accommodate requisite numbers of the modules to achieve the rated power in his Bid.

g) Other general requirement for the PV modules and subsystems shall be the following:

- i. The rated output power of any supplied modules shall have positive tolerance in range of 5 watt.
- ii. The peak-power point voltage and the peak-power point current of any supplied module and/or any module string (series connected modules) shall not vary by more than 2 (two) per cent from the respective arithmetic means for all modules and/or for all module strings, as the case may be.
- iii. The module shall be provided with a junction box with either provision of external screw terminal connection or sealed type and with arrangement for provision of by-pass diode. The box shall have hinged, weather proof lid with captive screws and cable gland entry points or may be of sealed type and IP-65 rated.
- iv. I-V curves at STC should be provided by bidder.

1.3 Modules deployed must use a RF identification tag. The following information must be mentioned in the RFID used on each modules. This should be installed the laminate only.

- a) Name of the manufacturer of the PV module
- b) Name of the manufacturer of Solar Cells.
- c) Month & year of the manufacture (separate for solar cells and modules)
- d) Country of origin (separately for solar cells and module)
- e) I-V curve for the module Wattage, I_m , V_m and FF for the module
- f) Unique Serial No and Model No of the module
- g) Date and year of obtaining IEC PV module qualification certificate.
- h) Name of the test lab issuing IEC certificate.
- i) Other relevant information on traceability of solar cells and module as per ISO 9001 and ISO 14001

1.4. Warranties:

a) Material Warranty:

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

b) Performance Warranty:

- i. The predicted electrical degradation of power generated not exceeding 20% of the minimum rated power over the 25 year period and not more than 10% after ten years period of the full rated original output.

2. 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 condition 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 in Uttar Pradesh. 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 REC. 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 IS4759.
- d) Structural material shall be corrosion resistant and electrolytically compatible with the materials used in the module frame, its fasteners, nuts and bolts. Aluminium structures also can be used which can withstand the wind speed of respective wind zone. Necessary 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 total load of the structure (when installed with PV modules) on the terrace should be less than 60 kg/m².
- h) The minimum clearance of the structure from the roof level should be 300 mm.

3. 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 JB's 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.

4. 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.

5. 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.

b) All switches and the circuit breakers, connectors should conform to IEC60947, 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

Variation in supply voltage :	+/- 10 %
Variation in supply frequency :	+/- 3 Hz

6. 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.

7. PCU/ Inverter:

As SPV array produce direct current electricity, it is necessary to convert this direct current into alternating current and adjust the voltage levels to match the grid voltage. Conversion shall be achieved using an electronic Inverter and the associated control and protection devices. All these components of the system are termed the "Power Conditioning Unit (PCU)". In addition, the PCU shall also house MPPT (Maximum

Power Point Tracker), an interface between Solar PV array & the Inverter, to the power conditioning unit/inverter should also be DG set interactive. If necessary. Inverter output should be compatible with the grid frequency. Typical technical features of the inverter shall be as follows:

Switching devices	IGBT/MOSFET
Control	Microprocessor /DSP
Nominal AC output voltage and frequency	415V, 3 Phase, 50 Hz
Output frequency	50 Hz
Grid Frequency Synchronization range	+ 3 Hz or more
Ambient temperature considered	-20° C to 50° C
Humidity	95 % Non-condensing
Protection of Enclosure	IP-20(Minimum) for indoor
Grid Frequency Tolerance range	+ 3 or more
Grid Voltage tolerance	- 20% & + 15 %
No-load losses	Less than 1% of rated power
Inverter efficiency(minimum)	>93% (In case of 10kW or above)
Inverter efficiency (minimum)	> 90% (In case of less than 10 kW)
THD	< 3%
PF	> 0.9

- a) Three phase PCU/ inverter shall be used with each power plant system.
- b) PCU/inverter shall be capable of complete automatic operation including wake-up, synchronization & shutdown.
- c) The output of power factor of PCU inverter is suitable for all voltage ranges or sink of reactive power; inverter should have internal protection arrangement against any sustainable fault in feeder line and against the lightning on feeder.
- d) Built-in meter and data logger to monitor plant performance through external computer shall be provided.
- e) The power conditioning units / inverters should comply with applicable IEC/equivalent BIS standard for efficiency measurements and environmental tests as per standard codes IEC 61683/IS 61683 and IEC 60068-2(1,2,14,30) /Equivalent BIS Std.
- f) The charge controller (if any) / MPPT units environmental testing should qualify IEC 60068-2(1, 2, 14, 30)/Equivalent BIS std. The junction boxes/enclosures should be IP 65(for outdoor)/ IP 54 (indoor) and as per IEC 529specifications.
- g) The PCU/ inverters should be tested from the MNRE approved test centers /NABL /BIS /IEC accredited testing- calibration laboratories. In case of imported power conditioning units, these should be approved by international test houses.

8. 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 of grid 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.

9. DATA ACQUISITION SYSTEM / PLANT MONITORING

DISPLAY PARAMETER'S

- i. Data Acquisition System shall be provided for each of the solar PV plant.
- 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 [This will be provided with SPV Power Plants of PV capacity more than 50 kW].
- iv. Temperature: Temperature probes for recording the Solar panel temperature and/or ambient temperature to be provided complete with read out integrated with the data logging system [This will be provided with SPV Power Plants of PV capacity more than 50 kW].
- 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. Solar Meter: Energy Meters to log the actual value of Energy generated by the PV system be provided. Energy meter if required with CT/PT should be of 0.5 accuracy class/as per Discoms guidelines.
- viii. Computerized DC Array monitoring and AC output monitoring shall be provided as part of the inverter and/or string/array combiner box or separately.
- ix. Array DC Voltage, Current and Power, Inverter AC Output Voltage and Current (all three phases and lines), AC Power (Active, Reactive and Apparent), Power Factor and AC Energy (All three 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 Internet monitoring and download of 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. The data of the solar radiation and temperature monitoring system should also be available on Remote Monitoring server.
- 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 /REC PDCL 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 supplier. Provision for interfacing these data on REC PDCL server and portal in future shall be kept.

10. TRANSFORMER “IF REQUIRED” & METERING:

- a) Dry/oil type relevant kVA, 11kV/415V, 50 Hz Step up along with all protections, switchgears, Vacuum circuit breakers, cables etc. along with required civil work. (If the transformer is required, the cost of the same will be borne by beneficiary and will not be the part of project cost).
- b) The bi-directional electronic energy meter (0.5 S class) shall be installed for the measurement of import/Export of energy.
- c) The bidder must take approval/NOC from the Concerned DISCOM for the connectivity, technical feasibility, and synchronization of SPV plant with distribution network and submit the same to REC PDCL before commissioning of SPV plant.
- d) Reverse power relay shall be provided by bidder (if necessary), as per the local DISCOM requirement.

11. 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 REC PDCL. Decisions of appropriate authority like DISCOM, UPNEDA may be followed.

12. PROTECTIONS

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

12.1. LIGHTNING PROTECTION

The SPV power plants shall be provided with lightning & over voltage protection. The main aim in this protection shall be to reduce the overvoltage 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 IEC62305 standard. The protection against induced high-voltages shall be provided by the use of metal oxide varistors (MOVs) and suitable Earthing such that induced transients find an alternate route to earth.

12.2. SURGE PROTECTION

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

12.3. EARTHING PROTECTION

- i. Each array structure of the PV yard should be grounded/ earthed properly as per IS:3043-1987. In addition the lightning arrester/masts should also be earthed inside the array field. Earth Resistance shall be tested in presence of the representative of Department/REC PDCL as and when required after Earthing by calibrated earth tester. PCU, ACDB and DCDB should also be earthed properly.
- ii. 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.

13. CABLES

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

- i. Shall meet IEC 60227/IS 694, IEC 60502/IS1554 standards
- ii. Temp. Range: -10° to $+80^{\circ}\text{C}$.
- iii. Voltage rating 660/1000V
- iv. Excellent resistance to heat, cold, water, oil, abrasion, UV radiation
- v. Flexible
- vi. Sizes of cables between array interconnections, array to junction boxes, junction boxes to Inverter etc. shall be so selected to keep the voltage drop(power loss) of the entire solar system to the minimum. The cables (as per IS) should be insulated with an special grade PVC compound formulated for outdoor use.
- vii. 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.
- viii. The Cable should be so selected that it should be compatible up to the life of the solar PV panels i.e. 25years.

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

x. Multi Strand, Annealed high conductivity copper conductor PVC type 'A' pressure extruded insulation or XLPE insulation. Overall PVC/XLPE insulation for UV protection Armored 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.

xi. The size of each type of DC cable selected shall be based on minimum voltage drop however; the maximum drop shall be limited to 1%.

xii. The size of each type of AC cable selected shall be based on minimum voltage drop however; the maximum drop shall be limited to 2 %.

14. CONNECTIVITY

The maximum capacity for interconnection with the grid at a specific voltage level shall be as specified in the PERC regulation for Grid connectivity and norms of DISCOM and amended from time to time.

i. The maximum permissible capacity for rooftop shall be 1 MW for a single Net Metering/Gross Metering point.

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

iii. 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. If the transformer is required, the cost of the same will be borne by beneficiary separately and will not be the part of project cost.

15. TOOLS & TACKLES AND SPARES:

i. 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 REC PDCL.

ii. 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 or can be maintained at supplier end. A minimum set of spares shall be maintained in the plant itself or can be maintained at supplier end for the entire period of warranty and Operation& Maintenance which upon its use shall be replenished.

16. 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 REC PDCL.

17. 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.

18. DRAWINGS & MANUALS:

- i. Two sets of Engineering, electrical drawings and Installation and O&M manuals are to be supplied. Bidders shall provide complete technical datasheets 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.
- ii. Approved ISI and reputed makes for equipment be used.
- iii. For complete electro-mechanical works, bidders shall supply complete design, details and drawings for approval to REC PDCL before progressing with the installation work.

19. PLANNING AND DESIGNING:

- i. The bidder should carry out Shadow Analysis at the site and accordingly design strings & arrays layout considering optimal usage of space, material and labor. The bidder should submit the array layout drawings along with Shadow Analysis Report to REC PDCL for approval.
- ii. REC PDCL 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.
- iii. The bidder shall submit preliminary drawing for approval & based on any modification or recommendation, if any. The bidder submits three sets and soft copy in CD of final drawing for formal approval to proceed with construction work.

20. 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

21. 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 the annual energy requirements of PV capacity.

22. 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.

Note: The Technical Standards for Grid Connected SPV Rooftop Plants are revised/updated time to time by Ministry of New and Renewable Energy, New Delhi, the same will also be applicable on issuance of revised / updated standards by MNRE.

23. Cleanup:

Upon completion of the Work, the Contractor shall remove from the vicinity of the Work all plant, buildings rubbish, unused materials, concrete forms and other like materials belonging to him or under his direction during construction to the satisfaction of RECPDCL Kishori Raman Girls Inter College, Mathura Representative and in the event of his failure to do so, the same may be removed by the RECPDCL at the expense of the Contractor within 15 days from the date of commissioning. The cost on account of clean up shall be included in the quoted rate and no additional extra claim shall be entertained.

ANNEXURE- 2

Letter for Submission of Bid

(To be submitted on Company's letterhead duly signed)

To,

Addl. Chief Executive Officer
REC Power Distribution Company Limited,
A-10, 4th Floor, Kribhco Bhawan,
Sector-1 Noida – 201301
Uttar Pradesh.

Sub.: Engagement of Service Agency

Dear Sir,

1. We wish to apply for Bid against RECPDCL's Tender no: **RECPDCL/CSR/Solar/e-Tender/2020-21/426 Dated: 14.07.2020** for "Design, Supply, Installation, Commissioning, & Maintenance for 5 years of Grid Connected Rooftop Solar PV power plant of capacity 15 kw at Kishori Raman Girls Inter College, Mathura, Uttar Pradesh-281001 as per the requirements of RECPDCL.

Further, I hereby certify that-

2. I have read the provisions of all clauses and confirm that notwithstanding anything stated elsewhere to the contrary, the stipulation of all clauses of Tender are acceptable to me and I have not taken any deviation to any clause.
3. I further confirm that any deviation to any clause of Tender found anywhere in my Bid, shall stand unconditionally withdrawn, without any cost implication whatsoever to the RECPDCL.
4. Our bid shall remain valid for period of 180 days from the last date of bid submission.
5. I have enclosed the following mandatory documents along with this letter:
 - (a) GST Registration copy
 - (b) Service Tax Registration Certificate copy
 - (c) Income tax (IT) Permanent Account number (PAN) card copy

Date:

Place:

Signature:

Full Name:

Designation:

Address:

Note:

In absence of above declaration/certification, the Bid is liable to be rejected and shall not be taken into account for evaluation.

ANNEXURE- 3
Bidder's General Details

(To be submitted on Company's letterhead duly signed)

Design, Supply, Installation, Commissioning & Maintenance for 5 years of Grid Connected Rooftop Solar PV Power Plant of capacity 15 kwp at Kishori Raman Girls Inter College, Mathura, Uttar Pradesh-281001

GENERAL DETAILS

1. Name of Company : _____
2. Name : _____
3. Regd. Address :
 - a) Address of Office : _____

 - b) Contact Person's
 - i. Name & Design.: _____
 - ii. Address : _____

 - iii. Tel No. Landline Mobile: _____
 - iv. Email ID : _____
4. Type of Firm (Please tick): Private Ltd. / Public Ltd./ LLP
5. PAN No. : _____
6. Service Tax Reg. Certificate No.: _____
7. E.M.D. Details : Rs. _____
DD No. _____
Name & Address of Bank: _____

Signature.....

Full Name.....

Designation.....

Address.....

ANNEXURE- 4

BID BANK GUARANTEE (EARNEST MONEY) FORMAT

This deed of Guarantee made this day of 2020 by
.....

..... (Name of the Bank) having one its branch at
..... acting through its Manager (hereinafter
called the "Bank") which expression shall wherever the context so requires includes its successors and permitted
assigns in favour of REC Power Distribution Company Ltd., registered under the Companies Act, 1956, having its
office at A-10, 4th Floor, Kribhco Bhawan, Sector-1 Noida - 201301 (hereinafter called "RECPDCL") which
expression shall include its successors and assigns.

WHEREAS RECPDCL has invited tender vide their Tender Notice No:
.....

..... Dated to be opened on
..... AND WHEREAS M/s
.....

..... (Name of Tenderer) having
its office at
..... (hereinafter called the
"Tenderer"), has/have in response to aforesaid tender notice offered to supply/ do the job **Design, Supply,
Installation, Commissioning & Maintenance for 5 years of Grid Connected Rooftop Solar PV Power Plant of
capacity 15 kWp at Kishori Raman Girls Inter College, Mathura, Uttar Pradesh-281001** as contained in the
tender.

AND WHEREAS the Tender is required to furnish to RECPDCL a Bank Guarantee for a sum of ₹ /-
(Rupees..... only) as Earnest Money for participation in the Tender aforesaid.

AND WHEREAS, we

.....
..... (Name of Bank) have at the request of the tender agree to give RECPDCL this
as hereinafter contained.

NOW, THEREFORE, in consideration of the promises we, the undersigned, hereby covenant that, the aforesaid
Tender shall remain open for acceptance by RECPDCL during the period of validity as mentioned in the Tender or
any extension thereof as RECPDCL and the Tender may subsequently agree and if the Tender for any reason back
out, whether expressly or impliedly, from his said Tender during the period of its validity or any extension thereof as
aforesaid or fail to furnish Bank Guarantee for performance as per terms of the aforesaid Tender, we hereby
undertake to pay RECPDCL, New Delhi on demand without demur to the extent of ₹ /-(Rupees
..... only).

We further agree as follows:-

1. That RECPDCL may without affecting this guarantee extend the period of validity of the said Tender or grant other
indulgence to or negotiate further with the Tender in regard to the conditions contained in the said tender or thereby
modify these conditions or add thereto any further conditions as may be mutually agreed to in between RECPDCL
and the Tender AND the said Bank shall not be released from its liability under these presents by an exercise by
RECPDCL of its liberty with reference to the matters aforesaid or by reason of time being given to the Tender or any

other forbearance, act or omission on the part of the RECPDCL or any indulgence by RECPDCL to the said Tender or any other matter or thing whatsoever.

2. The Bank hereby waive all rights at any time in consistent with the terms of this Guarantee and the obligations of the Bank in terms thereof shall not be otherwise affected or suspended by reason of any dispute or dispute having been raised by the Tender (whether or not pending before any arbitrator, tribunal or court) or any denial of liability by the Tender stopping or preventing or purporting to stop or prevent any payment by the Bank to RECPDCL in terms thereof.

3. We the said Bank, lastly undertake not to revoke this Guarantee during its currency except with the previous consent of RECPDCL in writhing and agree that any charges in the constitution, winding up, dissolution or insolvency of the Tender, the said Bank shall not be discharged from their liability.

NOTWITHSTADING anything contained above, the liability of the Bank in respect of this Guarantee is restricted to the said sum of ₹ /-(Rupees only).and this Guarantee shall remain in force till unless a claim under this guarantee is filed with the bank within 30 (thirty) days from this date or the extended date, as the case may be i.e. up to all rights under Guarantee shall lapse and the Bank be discharged from all liabilities hereunder.

In witness whereof the Bank has subscribed and set its name and seal here under.

Note: - The date shall be thirty (30) days after the last date for which the bid is valid.

ANNEXURE- 5**Financial Bid***(To be submitted through Online Only)***Design, Supply, Installation, Commissioning, & Maintenance for 5 years of Grid Connected Rooftop Solar PV Power Plant of capacity 15 kWp at Kishori Raman Girls Inter College, Kotwali Road, Choubey Para, Mathura, Uttar Pradesh – 281001**

We confirm the following are the technical specifications of Items that will be used for Installation & Commissioning.

REC POWER DISTRIBUTION COMPANY LIMITED						
Tender Inviting Authority: Addl. C.E.O.						
Name of Work: NIT for Design, Supply, Installation, Commissioning & Maintenance for 5 years of Grid Connected Rooftop Solar PV Power Plant of capacity 15 Kw at Kishori Raman Girls Inter College, Mathura, Uttar Pradesh – 281001						
NIB No.: RECPDCL/CSR/Solar/e-Tender/2020-21/426 Dated: 14.07.2020						
Bidder Name:						
Sl. No.	Item Description	Make & Rating	Per Wp Rate excluding GST	GST (%)	GST Amt. (Rs)	Per Wp Rate including GST
1	2	3	4	5	6	7
1	Solar PV Module					
2	Grid Connected Inverter					
3	Remaining BOQ					
4	O&M Cost for 5 Years					
TOTAL Per Wp Rate including GST						

(AUTHORIZED SIGNATORY)

NAME:

SEAL:

Note:

(1) Above mentioned items are major components only. Any items not specifically mentioned above but are required to finish the work will be arranged by the Supplier.

(2) As Kishori Raman Girls Inter College, Mathura, Uttar Pradesh-281001 Solar project is a prestigious project, It is anticipated that bidders will put superior high quality Solar Equipment's / components in this Solar Project.

Some of the preferred Make of Solar Equipment / Components are as specified below:

Solar PV Crystalline Modules: Insolation Energy (INA) / Tata Power Solar / Waaree or equivalent

Inverters: Delta Electronics / Power one or equivalent reputed make.

Cables: Poly Cab / KEI Cables or equivalent reputed make

LT Switchgear: ABB/ Hanger or equivalent reputed make

If bidders found quoted any low quality (Inferior) Solar Equipment's / components, RECPDCL reserve its right to ask the bidder to change the Equipment / Components of above mentioned quality/Make. RECPDCL reserves to take final decision at its sole discretion.

ANNEXURE- 6

ACCEPTANCE FORM FOR PARTICIPATION IN REVERSE AUCTION EVENT

(To be submitted on Company's letter head)

In a bid to make our entire procurement process more fair and transparent, RECPDCL intends to use the reverse auctions as an integral part of the entire tendering process.

The following terms and conditions are accepted by the bidder on participation in the bid event:

1. RECPDCL shall provide the user id and password to the authorized representative of the bidder. *(Authorization Letter in lieu of the same shall be submitted along with the signed and stamped Acceptance Form).*
2. RECPDCL decision to award the work would be final and binding on the supplier.
3. The bidder agrees to non-disclosure of trade information regarding the purchase, identity of RECPDCL, bid process, bid technology, bid documentation and bid details to any other party.
4. The bidder is advised to fully make aware themselves of auto bid process and ensure their participation in the event of reverse auction and failing to which RECPDCL will not be liable in any way.
5. In case of bidding through Internet medium, bidders are further advised to ensure availability of the infrastructure as required at their end to participate in the auction event. Inability to bid due to telephone line glitch, internet response issues, software or hardware hangs; power failure or any other reason shall not be the responsibility of RECPDCL.
6. In case of intranet medium, RECPDCL shall provide the infrastructure to bidders. Further, RECPDCL has sole discretion to extend or restart the auction event in case of any glitches in infrastructure observed which has restricted the bidders to submit the bids to ensure fair & transparent competitive bidding. In case an auction event is restarted, the best bid as already available in the system shall become the basis for determining start price of the new auction.
7. In case the bidder fails to participate in the auction event due any reason whatsoever, it shall be presumed that the bidder has no further discounts to offer and the initial bid as submitted by the bidder as a part of the tender shall be considered as the bidder's final no regret offer. Any offline price bids received from a bidder in lieu of non-participation in the auction event shall be out rightly rejected by RECPDCL.
8. The bidder shall be prepared with competitive price quotes on the day of the bidding event.
9. The prices as quoted by the bidder during the auction event shall be inclusive of all the applicable taxes, duties and levies and shall be FOR at site.
10. The prices submitted by a bidder during the auction event shall be binding on the bidder.
11. No requests for time extension of the auction event shall be considered by RECPDCL.
12. The original price bids of the bidders shall be reduced on pro-rata basis against each line item based on the final all inclusive prices offered during conclusion of the auction event for arriving at Contract amount.

(Signature & Seal of the Bidder)

ANNEXURE-7

UNDERTAKING TOWARDS NOT BEING BLACK-LISTED

(For Individual Company - to be submitted on Company's letterhead duly signed)

I, _____ Authorized Signatory of M/s _____ hereby give undertaking that we, as a company are not black-listed by any Central/ State Government/ Semi-Government Organization/ Public Sector Undertaking/ Private Institution in India.

Further, if information furnished above stands false at any stage of empanelment, we shall be completely liable for actions taken by RECPDCL as per terms & conditions of the tender including disqualification from empanelment with RECPDCL and exclusion from future contracts/assignments.

(Signature of Authorized Signatory)

Name*:

Designation*:

Seal:

* Please provide the name and designation of each signatory.

ANNEXURE- 8

ADVANCE BANK GUARANTEE (ABG) FORMAT

**M/s REC Power Distribution Company Ltd.,
A-10, 4th Floor, Kribhco Bhawan, Sector-1 Noida – 201301**

OUR LETTER OF GUARANTEE NO.:

In consideration of REC Power Distribution Company Ltd., having its office at
(hereinafter referred to as "RECPDCL" which expression shall unless repugnant to the content or meaning thereof include all its successors, administrators and executors) and having issued NIT/Work Order No.dated with/on M/s (Hereinafter referred to as "The Agency" which expression unless repugnant to the content or meaning thereof, shall include all the successors, administrators, and executors).

WHEREAS the Agency having unequivocally accepted to perform the services as per terms and conditions given in the NIT/Work Order No. dated and RECPDCL having agreed that the Agency shall furnish to RECPDCL an Advance Bank Guarantee for the advance taken, to the extent of 10% (ten Percent) (or the Percentage as per the individual case) of the value of the NIT/Work Order i.e. for

We,("The Bank") which shall include OUR successors, administrators and executors herewith establish an irrevocable Letter of Guarantee No.in your favour for account of.....(The Agency) in cover of performance guarantee in accordance with the terms and conditions of the NIT/Work Order.

Hereby, we undertake to pay up to but not exceeding (say only) upon receipt by us of your first written demand accompanied by your declaration stating that the amount claimed is due by reason of the Agency having failed to perform the NIT/Work Order and despite any contestation on the part of above named agency.

This letter of Guarantee will expire on including 90 day of claim period and any claims made hereunder must be received by us on or before expiry date after which date this Letter of Guarantee will become of no effect whatsoever whether returned to us or not.

Authorized Signatory
Chief Manager/ Manager
Seal of Bank

Note: The date shall be 90 days after the date of completion of contract.

ANNEXURE-9
Comprehensive Maintenance Contract (CMC) Format
(on India Non Judicial Stamp paper duly Notarized)

**COMPREHENSIVE MAINTENANCE CONTRACT (CMC) FOR MAINTENANCE OF15 KWp
GRID CONNECTED ROOFTOP SOLAR PV POWER PLANT SUPPLIED & INSTALLED BY
M/s..... (Name of Contractor / Supplier) AT KISHORI RAMAN GIRLS INTER
COLLEGE, MATHURA, UTTAR PRADESH – 281001 FOR FIVE (5) YEARS**

This Comprehensive Maintenance Contract (CMC) is executed between the REC Power Distribution Company Limited, A-10, 4th Floor, Kribhco Bhawan, Sector-1 Noida – 201301 represented by its hereinafter called as 1st Party and M/s hereinafter called as 2nd Party, for maintenance of Grid Connected Rooftop Solar PV Power Plant of capacity kWp for a period of five years with effect from, supplied and installed at Kishori Raman Girls Inter College, Mathura, Uttar Pradesh-281001 vide Work Order No..... dt.

The 2nd party will maintain the Solar PV power plant as per the terms and conditions mentioned hereunder.

1. It has been envisaged in the Work Order No., dated Under Clause No. _____ that the SPV power plant shall be warranted against any manufacturing defect and bad-workmanship at least for a period of five years and PV modules used in solar power plants/ systems must be warranted for their output peak watt capacity, which should not be less than 90% at the end of 10 years and 80% at the end of 25 years.

The systems have been commissioned and handed over to the 1st party through its _____, posted at Uttar Pradesh on _____. The 2nd party is fully responsible for their trouble-free performance of all the components during the warrantee period.

2. PV Modules: As stipulated in the ---- paragraph of the said Work Order under the Clause No. ----, the PV modules are covered under warranty for a period of 25 years from the date of use, it is natural that these are to be covered under Warranty up to _____. Similarly the balance of system (BOS) are covered under warrantee for a period of at least 5 years from the date of use so these are to be covered under warrantee up to -----.

The 2nd party is fully responsible for any defect noticed within the above warranty period and is liable for rectification/replacement of the defective components/systems free of cost.

3. The 2nd party should conduct at least one training program for the users/technical personnel and field functionaries of RECPDCL, on day-to-day repair and maintenance of the system.

4. PBG 10% of contract value shall be kept as fees towards Performance Bank Guarantee for a period of five years of maintenance. After expiry of the maintenance period of 5 years, which remains valid up to _____, the above security deposit towards PBG shall be returned to the 2nd party thereafter only.

If the maintenance of the SPV power plant is found to be unsatisfactory by the 2nd party, the 1st party will have the liberty to encash the PBG deposited/furnished amount, in full or part as may be decided by the 1st party.

5. The CMC includes repair/replacement of all spares and consumables.

6. The 2nd party shall undertake Preventive/Routine Maintenance work of the of SPV power plant. This shall be done at least once in every six month and shall include activities such as cleaning and checking the health of the SPV system, cleaning of module surface, tightening of all electrical connections, changing of tilt angle of module mounting structure if necessary, and any other activity that may be required for proper functioning of the SPV power plant as a whole. The 2nd party shall forward "Half-Yearly Solar PV Power Plant Status report" to the 1st party in the prescribed format attached herewith (**Annexure -12**) on every succeeding six months.

7. Whenever a complaint is lodged by the user (Kishori Raman Girls Inter College, Mathura, Uttar Pradesh-281001), the 2nd party shall attend within 5-days period of time and in any case the breakdown shall be corrected within a

period not exceeding 7-days from the date of complaint. The 2nd party shall furnish the status report after completion of repair and rectification of problem which shall invariably bear the signature of the concerned Authority, Kishori Raman Girls Inter College-Mathura, Uttar Pradesh-281001.

8. For carrying out the CMC effectively, the 2nd party shall establish at least one service center deployed within the State (Uttar Pradesh). The 2nd party shall maintain the following facilities at the service center for ensuring highest level of services to the end user.

- (a) Adequate trained manpower specifically trained by the 2nd party for carrying out the service activities.
- (b) Adequate provisions for record keeping, which shall inter-alia, include the following.
- (c) Adequate spares for ensuring least down time of a individual component.
- (d) The service center shall send summary service reports to 1st party on half yearly basis. These reports shall include the following information:

Module Cleaning Activity and update details:

Number of complaint received during the period of reporting:

Number of complaints attended during period of reporting:

Major cause of failure, as observed:

Major replacement made during the reporting period:

- (e) The records maintained at the service center shall be available for scrutiny of authorized representatives of the 1st Party.

- (f) The date of CMC, maintenance period shall begin on the date of actual commissioning of the SPV systems.

9. Separate bills/Invoices in triplicate towards CMC cost are to be submitted by the 2nd party to 1st party for effecting payment, after end of the year from the date of maintenance of the systems as per price quoted in the Work Order.

10. Certificate in support of successful maintenance of the system (s) shall be obtained from the user as explained above, which should be countersigned by the _____, as a token of verification of maintenance done.

11. It will be the liberties of the 1st party to cross check the systems maintained by the 2nd party. Random verification of the maintenance may be carried out by the 1st party wherever necessary.

12. The 2nd party may continue to maintain the power plant after expiry of the maintenance period of five year, provided the beneficiaries/1st party desires.

13. For adjudication of any dispute between the two parties arising on execution of this CMC, the matter shall first be brought to the notice of Chief Executive Officer/Chairman, RECPDCL

14. In case, there will be no amicable settlement of the issue, the matter can be referred to the Court of Law having jurisdiction in New Delhi only.

The Comprehensive Maintenance Contract is signed jointly between the two parties today i.e. on dated. _____ day of 2020.

For and on behalf of

M/s

(2nd party)

Seal:

Witness:

1

(Name & Sign)

2

(Name & Sign)

For and on behalf of RECPDCL

(1st Party)

Seal:

Witness:

1

(Name & Sign)

2

(Name & Sign)

ANNEXURE- 10
PERFORMANCE BANK GUARANTEE (PBG) FORMAT

M/s REC Power Distribution Company Ltd.,
A-10, 4th Floor, Krihco Bhawan, Sector-1 Noida – 201301

OUR LETTER OF GUARANTEE NO.:

In consideration of REC Power Distribution Company Ltd., having its office at
(Hereinafter referred to as "RECPDCL" which expression shall unless repugnant to the content or meaning thereof include all its successors, administrators and executors) and having issued NIT/Work Order No.dated with/on M/s (Hereinafter referred to as "The Agency" which expression unless repugnant to the content or meaning thereof, shall include all the successors, administrators, and executors).

WHEREAS the Agency having unequivocally accepted to perform the services as per terms and conditions given in the NIT/Work Order No. dated And RECPDCL having agreed that the Agency shall furnish to RECPDCL a Performance Guarantee for the faithful performance of the entire contract, to the extent of% (..... Percent) (or the Percentage as per the individual case) of the value of the NIT/Work Order i.e. for

We,("The Bank") which shall include OUR successors, administrators and executors herewith establish an irrevocable Letter of Guarantee No.in your favour for account of..... (The Agency) in cover of performance guarantee in accordance with the terms and conditions of the NIT/Work Order.

Hereby, we undertake to pay up to but not exceeding (say only) upon receipt by us of your first written demand accompanied by your declaration stating that the amount claimed is due by reason of the Agency having failed to perform the NIT/Work Order and despite any contestation on the part of above named agency.

This letter of Guarantee will expire on including 90 day of claim period and any claims made hereunder must be received by us on or before expiry date after which date this Letter of Guarantee will become of no effect whatsoever whether returned to us or not.

Authorized Signatory
Chief Manager/ Manager
Seal of Bank

Note: The date shall be 90 days after the date of completion of contract.

ANNEXURE- 11
Joint Commissioning cum handing over Certificate

Date:

This is to certify that M/s have installed and commissionedkWp Grid Connected Rooftop Solar PV Power plant at Kishori Raman Girls Inter College, Mathura, Uttar Pradesh – 281001 and completed the same as on ----- successfully. Now the power plant is running satisfactorily.

1. Place of installation.....
2. Address.....
3. City/District.....
4. Contact person's Name.....
5. Phone no.....
6. Mobile no.....
7. Fax no.....
8. E Mail ID.....
9. Type of Solar PV Plant.....
10. Solar PV Power Plant Details:

(a) Solar PV modules:

Type of PV Modules (Crystalline):

Make:

Model:

Quantity:

Serial. Numbers: (Pl. inserts extra papers if necessary)

Year of Manufacturing:

Test Report from MNRE authorized test Centre:

OEM's Test Data sheet along with I-V curve of installed Modules Serial number wise:

RF ID Tag Serial Numbers:

(b) Inverter:

Type of Inverter (String Inverter / Central Inverter):

Make:

Model:

Quantity:

Serial Numbers:

Year of Manufacturing:

Test Report from MNRE authorized test Centre:

OEM's Test Data sheet of installed Inverters Serial number wise:

(c) Cables:

Make:

OEM's Test Data sheet of laid down Cables:

Length of Cables laid down: (Pl. specify separately sq. mm wise)

(d) Array Junction Box:

Make:

Model:
Quantity:
Serial Numbers of installed Array Junction Boxes:
Year of Manufacturing:
OEM's Test Data sheet of installed AJBs:

(e) Fire Extinguishers:

Type of Fire Extinguisher:
Make:
Model:
Quantity:
Serial Number:
Year of Manufacturing:
OEM's Test Data of installed Fire Extinguishers:

(f) Energy Meter:

Make:
Model:
Quantity:
Serial Numbers:
Year of Manufacturing:
OEM's test reports of installed Energy Meters:
Are all Energy Meters Tamper Proof made (Yes / No):

11. Training (General / Technical / Safety):

Date of Training Imparted:
No. of persons trained:
Name & Designation of persons trained:

12. Chief Electrical Inspector's Inspection reports:

All Test Reports of Electrical Inspector:

13. Installation Manuals, User Manuals, Operational Manuals, Maintenance Manuals, Catalogs, Safety Keys etc hand over:

PV Modules
Inverters:
Module Mounting Structures:
AJBs:
ACDBs:
Cables:
Earthing Kits:
Lightning Arresters:
Fire Extinguishers:
Energy Meters:

14. Connector Strip Diagrams, Inverter wise String Diagrams, their cascading:

15. Cables Layout Diagrams (AC & DC separately):

16. Warranty / Guarantee Documents of the composite system:

PV Modules
Inverters:
Module Mounting Structures:
AJBs:
ACDBs:
Cables:
Earthing Kits:
Lightning Arresters:
Fire Extinguishers:
Energy Meters:

17. Service Centre Details:

Name:
Address:
Contact Person:
Phone no:
FAX no:
Mobile no:
E Mail ID:

18. Installed Power Plant Performance details:

(attach daily Power Generation reports, Performance reports, Performance Acceptability Test PAT reports, Performance Ratio PR reports, Plant Load Factor PLF reports etc.)

19. Signed Comprehensive Maintenance Contract (CMC) Document:

Signature with Seal

M/s -----
(Contractor / Supplier)

Signature with Seal

(Authorized Signatory
RECPDCL

Grid Connected Rooftop Solar PV power plant of capacity 15 kWp has been handed over Kishori Raman Girls Inter College, Mathura, Uttar Pradesh-281001 on

(Authorized Signatory)
Kishori Raman Girls Inter College
Mathura, Uttar Pradesh-281001

ANNEXURE-12
Half-Yearly Solar PV Power Plant Status report
(To be furnished in duplicate by the 2nd party on Half-Yearly basis)

Date:

(A) PARTICULARS

1. Name of the Client / User.....
2. (a) Place of installation (Village)
- (b) Gram Panchayat.....
3. Block.....
4. District.....
5. Date of visit.....
6. Name & address of the staff (visiting the installation).....

(B) OBSERVATIONS (To be filled-in by the visiting staff to the installation)

7. Visual damage of all Components / Equipment / Items in PV Power Plant:
 (i) Have you seen any? Pl. mention if any.....
8. Damage of the module:
 (i) Sl. No. & Make of the damaged module.....
9. Cleaning status of PV Modules.....
10. Looseness of PV Modules (Pl. mention, if any).....
11. Tightness of Nuts, bolts, of Module Mounting Structures.....
12. Any cables found lying on the ground, or inside conductors of cables found exposed or in open.....
13. Tightening of the all electrical connections.....
14. Open Circuit voltages at AJB / MJB boxes (Matching with earlier commissioned time vales).....
15. Grounding / Earthing of all systems.....
16. Staff Training (General, Technical, Maintenance and Safety) Records and cross questioning the trained staff.....
17. Verification of Daily Power Generation, PLF, PR ratio.....
18. Verification of Maintenance Records.....
19. Verification of Repairing Records.....
20. Checking of Spares and Consumables availability.....
21. Any Safety Issue / Concern of PV Power Plant:
22. Suggestions given to the user.....
23. Status of the entire PV Power Plant system.....
24. Remarks of the User.....

Signature of the User / Representative

Name.....

Designation.....

Signature of the Visiting staff

Name.....

Designation.....

ANNEXURE-13

Name of Agencies for Participation

Note: To participate in this tender, below mentioned bidders have to submit relevant document as asked in this tender document.

Sl. No.	Agencies, who are empanelled with RECPDCL
1	Fourth Partner Energy Private Limited
2	Premier Solar Systems Pvt Ltd
3	Rays Power Experts Private Limited
4	Central Electronics Limited
5	KEC International Limited
6	Lumino Industries Limited
7	Larsen & Toubro
8	Vikram Solar Pvt Ltd
9	Gautam Solar Private Limited
10	Waaree Energies Limited
11	Mittal Machines Pvt Ltd
12	Tritronics (India) Pvt Ltd
13	Solex Energy Ltd
14	Kosol Energie Pvt Ltd
15	Ritika Systems Private Ltd
16	Unecops Technologies Ltd
17	Novus Green Energy Systems Pvt Ltd
18	Sirius Solar Energy Systems Pvt Ltd
19	Aditi Solar Private Limited
20	Kirti Solar Limited
21	Enrich Energy Private Limited
22	Abhishek Solar Industries Private Ltd
23	Cygni Energy Private Limited
24	Fujiyama Power Systems Pvt Ltd
25	Medors Renewable Energy Pvt Ltd & Fronius India Pvt Ltd JV

26	Ganesh Electricals & GEIE Solar Product India Private Limited JV
27	Kirti Solar Limited
28	Enrich Energy Private Limited
29	Abhishek Solar Industries Private Ltd
30	Rajasthan Electronics & Instruments Ltd
31	Bharti Waters Pvt Ltd
32	Nichi Manufacturing Pvt Ltd
33	JJ PV Solar Pvt Ltd
34	Gensol Engineering Private Limited

ANNEXURE-14

FINAL CLAIM CERTIFICATE

(To be submitted by Bidder on Rs. 100 stamp with Notarized)

I, (Name of Director) of M/s (Name of Bidder) hereby state that we have completed work for 15 KWp Rooftop Solar PV Power Plant at **Kishori Raman Girls Inter College, Kotwali Road, Choubey Para, Mathura, Uttar Pradesh – 281001** in all respect. We have submitted our final bill No..... datedand except for this bill and PBG we have no further claim whatsoever of any description, on any account whatsoever from RECPDCL, against aforesaid job executed by us.

Dated:

(Seal & Signature)

E-BIDDING HELP MANUAL TO BIDDER

Helpdesk Nos.

Phone : 011-49424365

Other Contact Numbers:

1.

Shri Krishna (www.tenderwizard.com) 8800900127

Step 1

Registration Process



Website address: www.tenderwizard.com/REC

- Click on “**TenderFreeView**” to see (view and download) all the tender notifications and corrigendum’s.
- Click on “**Register Me**” Hyperlink and get your User Id and Password.
- (Certain special chars like ~ ` ' # \$ % & * ! () ; \ / ? " : < > + - { } [] are not allowed in the company id or any key attributes).
- Once you fill all the details asked by “**Register Me**” form and obtain your password, contact the Office of RECPDCL to enable your User ID.
- After this, vendor can key in their User Id and Password and get successful entry in to the application.

STEP 2

Participation

Vendor should login with his USER ID and PASSWORD

- After Successful entry into the application click on hyperlink “**UnApplied**”.
- By clicking on hyperlink “**UnApplied**” you can see the latest tenders which are floated and other details relevant to tender.
- On this screen (**UnApplied**) you will find various gif’s on the left hand side. Click on  “**Edit form**” gif and see all the documents attached. Please download these documents and go through them.
- Once you have gone through the entire tender document and you wish to participate in the tender click on  “**Request Tender Form**” gif. And Then click on “Submit”.
- Now once you have requested for tender documents click on “**In Progress**” stage. You can see the status as “**REQUESTED**”.

Note: - will send you forms (Electronic Financial bid & Technical bid sheets) .

- You will get two excel files “**Technical Sheet.xls**” and “**Cost Sheet.xls**” along with other documents. Firstly, you need to download this document by clicking on hyperlink “[Click here to Download Empty Document.](#)” Then Save the file with the same file name

Note:-

- 1) You should not change the file name of any Excel file.
- 2) You should only key in the values in blue cells only.

STEP 3

Submission

Vendor should prepare the scanned copy of DD (EMD)

- **EMD Submission:** Click on “[Click here to enter EMD Details and Attach Scanned Copy of EMD](#)”. Fill all the fields provided in that sheet and press on “**Scan**” button to attach the scanned copy of the EMD.
- Vendor should fill values in blue cells only, provided in these sheets. These can be uploaded by clicking on “[Click here to Upload filled File](#)”.

Reminder:

Technical Sheet and **Cost Sheet** should be uploaded by using “[Click here to Upload filled File](#) “. All other supporting documents could be uploaded using “[Click here to Attach General Documents](#)” link provided below.

- Please don’t change the name of the file as system will not accept any other file name.

Steps for uploading the additional documents (supporting documents) to your account.

1. In the left hand menu click on General Document, general document page will appear
2. Click on upload new file Button for uploading new document, upload sheet will appear
3. Select the file to be uploaded, enter the description and attachment name.
4. Click on Upload file
5. Repeat step 2 and 3 for uploading new files

To change the description and attachment name for the uploaded file use Update existing file button

Note: This is for altering the description and attachment name only.

Attachment of general document to a particular tender

Go to tender Documents screen of that particular tender

1. Go to [Click here to Attach General Documents](#) –Additional documents can be optionally Uploaded General Document Summary sheet will appear.
2. In General Document Summary screen select the file you want to attach and make necessary changes for Tender Stage and click Attach file button.
3. If you need to attach any new files for the tender follow Steps for uploading the Additional documents.

Other details could be scanned and uploaded but ensure that it is smaller in size (i.e. < 1MB for Fast Uploading of Document). (only.doc, .jpg,.gif,.xls, .bmp, .pdf.)

- The server time will be displayed at the right hand side of the page please follow this time, and all the actions i.e;(Requesting, Submitting, Opening etc..) takes place according to this time only.

NOTE :

✓ You will see all the red colored links changing to black color, when you have uploaded.

A) **Technical Sheet**

B) **Cost Sheet or price bid**

C) **EMD details**

- i) Once you fill the above documents only then you will able to submit the tender by clicking on the **“Submit the Tender Form”** button before the tender closing date and time.


STEP 4

Acknowledgement

Once you submit the tender you will get the submitted token number, submitted date and submitted time. Take the print of that sheet then click on “OK”. Then the status will change to submitted.

STEP 5

OPENING

- After the tender is opened at the stipulated date and time, the award details can be accessed in the **OPENED/AWARDED** stage.
- To view the opened tenders click on the **“Opened/Awarded”** link then click on edit form  to view your competitors bid sheets who participated with you and who are not disqualified.

Note:

- If you do not get the submitted status and token number, contact tendering authority well in advance. L is not responsible for tender’s not eived or submitted properly. Vendors are requested to undergo training and get their doubts clarified well in advance.
- If any queries please contact L Office and if required, personal training would be given. Please feel free to contact if you have any clarifications regarding E-Tendering.
