MUNICIPAL COUNCIL PALI

Tender Document

for

DESIGN, SUPPLY, INSTALLATION,TESTING, COMMISSIONING AND MAINTENANCE OF GRID CONNECTED Roof top SPV POWER PLANT.

At

Municipal council main office building

NIT No: P.()15/light/2020-21/505 *Dated: 11.06.2020*

Municipal council pali near suraj pole , Pali-306401

Tel:02932-250033
Email ID: cmcpali@yahoo.co.in
aenemcp@gmail.com

MUNICIPAL COUNCIL PALI
(local self government)
Near suraj pole Pali-306401
Phone: 02932-250033

Brief of Schedule of Dates of Tender

Programme & detail of work	Design, Supply, Installation, testing, Commissioning and Maintenance for 5 Years of grid connected SPV Power Plants
Work Area:	Municipal council pali office building
NIT No:	**NIT No: 453** **Dated: 07.03.2020**
Estimated Capacity of Project **{This capacity of work can be increased/decreased as per availability of useful roof area for solar plant installation}**	**80 Kwp**
Estimated Project Cost:	**38.40 lakh**
Earnest Money Deposit	76800/- Rs
Date of start downloading { The tender can be downloaded from web site http://eproc.rajasthan.gov.in }	13.06.2020 from 10.00 Am
Last Date of online submission of Tender	22.06.2020 till 6.0 pm
Date of submission of DD and document(physically)at MCP office	23.06.2020 till 1.00Pm
Date of opening of Technical & financial bid	23.06.2020 4.00Pm onwards

1. The bidder will have to deposit the following documents in Envelope-1 (in Hard copy) **at MCP Head Office on 23.06.2020 up to 13.00 Hrs. This is essential otherwise the bid in electronic form of that bidder will not be opened)**

Envelope-1:(i) the DD/Banker"s Cheque of prescribed cost of tender Rs. 500/- and EMD Rs.76800/- by way of DD/Banker"s Cheque in favour of Commissioner**, Municipal council pali, payable at pali;(no exemption is allowed in EMD)** (ii) Processing Fee of RISL Rs. 500/- by way of DD/Banker"s Cheque in favour of **Managing Director, RajCOMP Info Services Ltd. (RISL), payable at Jaipur.**

2. **List of required Formats/documents to be submitted online duly signed digitally by Authorized Signatory:**

Cover-1: Upload the scanned copy of all the original documents submitted to MCP in Hard Copy (Envelope-1).
Cover-2: All Non-financial information in the Formats as per tender (in .pdf).
Cover-3: Price bid as per Format in .xls format. This format is to be downloaded from http://eproc.rajasthan.gov.in, filled & uploaded back to http://eproc.rajasthan.gov.in. If the prices are quoted anywhere in Cover-I and/or Cover-II (Technical Bid) by any bidder, their offer will be summarily rejected.

3. Cutting / overwriting if any in the figures of the tendered documents is required to be clarified / indicated in words, duly signed, failing which the tender may be rejected.

4. The bidders should provide complete information at the time of submission of bid. If the bidders are asked to furnish some more clarification/confirmation/document, they shall be required to furnish the same within specified time, failing which the case shall be finalized /decided on the basis of available information/documents. The responsibility of ignorance of their bid on account of delay in furnishing of desired information/documents shall be of the bidder. However, if there are any shortcomings in the submission of the information which not materially affects the qualification criterion, then the Bid Evaluation Committee shall have the power to consider the facts on the merit of the case and decide the bid evaluation accordingly.

5. All tender documents should essentially be signed digitally and submitted/uploaded on http://eproc.rajasthan.gov.in in time as per checklist.

6. All the required information shall be furnished strictly in the prescribed formats only. Any information indicated other than the prescribed formats shall not be entertained. The bid shall be evaluated on the basis of information furnished in the prescribed formats only.

7. The Procurer may advise any bidder to furnish the documents in original or copy thereof duly attested by Notary for verification, in physical form on short notice of three days.

8. Correspondence for enquiries and clarifications: All correspondence in respect of the tender and submission of the Tender shall be addressed to:

Commissioner,
Municipal council pali,
Near suraj pole, pali (Raj.),306401
Tel: 02932-250033
Email:(1) cmcpali@yahoo.co.in (2) aenemcp@gmail.com

Contact Person: **Rameshwar lal sharma,**
Executive Engineer(E),
Municipal council pali,
Mob. 9799042229

Jitendra soni,
Assistant Engineer(E)
Municipal council pali,
Mob.9929288686

SECTION – 1 INTRODUCTION & ABREVIATIONS

Background:

Pali Town is situated on the bank of the river Bandi at 25o47' North latitude and 73o20' East longitude at a distance of 300 km from Jaipur and 35 km south east of Jodhpur on the NH- No. 14, Jaipur-Radhanpur. Town is at an average altitude of 212 m above Mean Sea Level. It is the district headquarters and has a population of 230,075 as per census 20011. It is an important industrial town for textiles. Its nearest railhead is at Marwar which is at about 35 km and thus is very well connected to the surrounding towns and cities. Nearest airport is at Jodhpur which is at a distance of 75 KMs. It experiences mild showers during the months of July, August and September and has maximum temperature of 40oC and average daily minimum temperature of 27oC. During the winter average daily maximum temperature is 25oC and minimum is 10oC. The average annual rainfall is 412 mm.

Municipal council pali invited tender for installation of roof top solar pv at main office building of mcp .Above work is to be carried out on „Turn Key Basis" which includes design, supply of SPV systems with all accessories and equipments, installation, testing, commissioning and maintenance services for 5 years with free replacement warranty on spare parts against manufacturing defects for five years.

Mode of Execution of Programme:

The basis of evaluation of the bids shall be the cost/rate quoted in the Price Schedule. To further clarify, installation and commissioning cost and taxes etc. shall be inclusive to the cost of supply of complete system including FIVE years comprehensive maintenance for comparison and evaluation. Proposers are required to quote rate / cost on firm basis and no price variation on any account shall be considered.

The selected Vendor shall supply, install, commission systems and **provide maintenance services for 5 years with free replacement warranty on spare parts against manufacturing defects for five years.** They shall also be required to set up their repair and maintenance centres for providing effective repair/maintenance services to the beneficiaries / users and meet conditions as given in Section 2.

(i) The selected Vendor shall be allowed to install the systems conforming to the MNRE specifications / guidelines .

3. Abbreviations / Terms:

(i)	MCP	Municipal council pali
(ii)	Manufacturers :	Manufacturers of SPV Modules (Meeting technical specification and other parameters specified by MNRE).
(v)	EMD :	Earnest Money Deposit/Bid Security.
(vi)	SD :	Security Deposit.
(vii)	Performance security (PSD):	Security amount as per clause 9.2 (which will be deducted from payment against supply and installation) for warrantee period.
(viii)	Systems	SPV Rooftop Grid Connected Systems.
(ix)	Proposal	Tender / Bid / Quotation.
(x)	Proposer	Tenderer/Bidder/Applicant.
(xi)	Affiliate	A company that either directly or indirectly controls / is controlled by / is under common control with a Bidder and “control” means ownership by one company of at least 26% of the voting rights of the other company.
(xii)	Cost of System	Total Price of System.
(xiii)	Amount payable by MCP	Capital cost excluding subsidy by RRECL Jaipur MNRE
(xiv)	Subsidy	Capital cost support to eligible beneficiary under MNRE, GoI Roof Top Scheme (As per the Sanction received by MNRE).
(xv)	CMC	Maintenance services for 5 years with free replacement warranty on spare parts against manufacturing defects for five years.
(xvi)	Empanelled Vendor	The successful bidder(s) to whom Work order has been awarded.

SECTION – 2

SCOPE OF WORK

Scope of work covers Design, supply, installation, testing, commissioning and maintenance of SPV Grid connected Rooftop Systems at municipal council pali office building conforming to technical specification enumerated in relevant JNNSM guidelines and amended from time to time.

Detailed scope of work is given here under:-

2.1 Work of installation of SPV grid connected Systems shall involve :

(i) Preparation of Detailed Project Report (DPR) detail layout drwaing etc of the proposed Proposal of SPV Power Plant to be installed at mcp main office building.

(ii) Obtaining No objection certificate from concerned DISCOM for grid connectivity.

(iii) Entering into supply and comprehensive maintenance contract (CMC) agreements with MCP and CMC shall be for five years as per Maintenance services for 5 years with free replacement warranty on spare parts against manufacturing defects for five years..

(iv) Design, supply, storage, civil work, erection, testing and commissioning of SPV grid connected Power Plant as per schedule given at the time of allotting targets.

(v) The work covers Design, supply, installation, commissioning and comprehensive maintenance for FIVE years.

(vi) Establishing "After sales service centres" in municipal council pali area to cater the maintenance needs at earliest.

2.2 PROJECT COST

2.2.1 The Project cost shall include all the costs related to above Scope of work. Bidder shall quote for the entire facilities on a "single responsibility" basis such that the total Bid Price cover shall the obligations mentioned in the Bidding Documents in respect of Design, Supply, Erection, Testing and Commissioning including Warranty, Operation & Maintenance for a period of 5 years goods and services including spares required if any, during the O&M period. The Bidder has to take all permits, approvals and licenses, insurance etc., provide training and such other items and services required to complete the scope of work mentioned above.

2.2.2 The price quoted is on lump sum turnkey basis including all taxes & duties applicable and excluding subsidy he will claim from MNRE/RRECL and the bidder is responsible for the total scope of work described as above.

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

2.2.4 The cost shall be inclusive of all duties and taxes, insurance etc. The prices quoted by the firm shall be complete in all respect and no price variation/adjustment shall be payable.

2.2.5 The operation & maintenance of Solar Photo voltaic Power Plant would include warranty against wear, tear, overhauling, machine breakdown, insurance, and replacement of defective modules, invertors/ Power Conditioning Unit(PCU), spares, consumables & other parts for a period of 5 years.

The modules shall be cleaned by the selected Vendor on weekly or as and when required during entire O&M period.

It is the responsibility of the selected Vendor to provide the Remote Monitoring System facility to the Owner(MCP). Necessary hardware arrangements shall be provided by the selected Vendor. Periodic data charges towards data pack and Internet/Wifi connectivity for maintaining Remote Monitoring System shall be the responsibility of MCP. The selected Vendor shall provide rights to MCP to access the performance data of the inverter by sharing the user ID and password, as and when required to monitor the performance.

2.2.6 The **Project cost** shall be specified by the successful **Bidder"s quote @ Rs/kWp (kilo Watt peak) for each project.** The project cost shall be in accordance with all terms, conditions, specifications and other conditions of the Contract as accepted by the RREC and incorporated into the Rate Contract order.

2.2.7 Total quantity of installation(i.e. 80Kw) can be increased or decreased at sanctioned rate as per requirement and availability of space as per report preapered by successful bidder.

2.2.8 The selected Vendor shall be responsible and take an Insurance Policy for transit- cum-storage-cum-erection for all the materials to cover all risks and liabilities for supply of materials on site basis, storage of materials at site, erection, testing and commissioning. **The selected Vendor shall also take appropriate insurance during O&M period, if required on their own cost.**

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

2.3 **Net metering of Power :**

Net metering is the concept which records difference between export of generated energy and import of energy from DISCOM grid during billing cycle. The SPV power consumer shall pay for the net energy in a billing period as per applicable retail supply tariff as determined by regulatory commission, if the supplied energy by the Discom is more than the injected energy by the solar PV sources of the consumer(s).

Rajasthan Electricity Regulatory Commission (RERC) has issued **"Regulation for Net Metering and Grid Connectivity"** on 26thFebruary,2015. **The SPV Power generators/ beneficiaries going for installation of SPV Power Plants under this scheme will also be governed by the rules & regulations of Net Metering scheme as notified by RERC and amended time to time.**

The Empanelled Vendor shall bear the entire cost of metering arrangement provided including its accessories. The fee and other charges such as security deposit payable to office of DISCOM & Electrical inspector will be payable by beneficiary separately. The installation of meters including CTs & PTs, wherever applicable, shall be carried out by the Empanelled Vendor as per the procedures in vogue of the Discom(s) with their permission.

2.4 PLANT PERFORMANCE EVALUATION:

MCP shall monitor the performance of the grid connected SPV Power Plants without battery back up as per feasible subject to availability of proper measuring equipment being in vogue in DISCOM as under :

The successful bidder shall be require to meet minimum guaranteed generation with **Performance Ratio (PR)** at the time of commissioning and related **Capacity Utilization Factor (CUF)** as per the DNI level for the location during the O&M period. Minimum CUF of 15% should be maintained for a period of 5 years for release of performance related security deposit. **For CUF less than 15%, the penalty can be imposed for the loss of energy generation @ APP of DISCOM for that year subject to force majeure conditions.** The PR will be measured at Inverter output level during peak radiation conditions. The PR and CUF will be evaluated considering 100% grid availability.

SECTION – 3
EXPERIENCE AND COMPETENCE

The Bidder shall have Electrical Contractor License of any State across India.

Following are the required for considering responsiveness of the bidders. To substantiate this, necessary documents, certificates shall have to be attached with the proposal

(A) Established Entrepreneur :

(i) The Bidder should be either a body incorporated in India under the Companies Act, 1956 or Companies Act, 2013 including any amendment thereto and engaged in the business of Solar Power/Renewable Energy.

OR

The Bidder should be either a body incorporated in India under the Limited Liability Partnership Act 2008; A subset of Companies Act, 2003 and engaged in the business of Solar Power/Renewable Energy.

A copy of certificate of Incorporation should be furnished along with the bid in support of above.

OR

The Bidder should be a Firm registered under Partnership Act in India.

A copy of certificate of Form-G/Copy of Registered Partnership Deed should be furnished along with the bid in support of above.

OR

The Bidder should be a Firm registered as Sole Proprietor under Shop Act.

A copy of certificate of TIN Number should be furnished along with the bid in support of above.

(ii) **The bidder** should have minimum two years experience of successful installation of Grid connected PV projects as detailed under:

(a) The bidder should have cumulative experience of executing > = **20kWp** Grid connected SPV Power Plants Installations in India during 2017-18 and 2018-19 & up to date of submission of bid.

OR

The bidder should have cumulative experience of executing > = **40kWp** Grid connected SPV Power Plants and/or Off-grid SPV systems installations in India during 2017-18 and 2018-19 & up to date of submission of bid.

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SECTION – 4

FINANCIAL CAPABILITY

Following are required for considering responsiveness regarding financial capability of the bidders:

The bidder has financial capability to take up the proposed work to be supported by Audited balance sheet for any three years from 2016-17, 2017-18, 2018-19 and 2019-20 (in case of 2019-20, provisional balance sheet along with CA certificate for 6 months period should be attached) and there should be **Minimum Average Annual Turnover of last three years should be Rs. 20.00 lakh.**

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SECTION – 5

PRICESCHEDULE

The bidder shall quote their rates / costs for Design, supply, installation, commissioning including FIVE years free comprehensive maintenance including all taxes etc. in online BoQ

The bidder has to execute a Annual Comprehensive maintenance Contract for a period of five years with the beneficiary(MCP). Maintenance services for 5 years with free replacement warranty on spare parts against manufacturing defects for five years.

Note:

i) If the prices are quoted anywhere in Cover-I and/or Cover-II (Technical Bid) by any bidder, their offer will be summarily rejected.

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SECTION-6

PART - A

PRE-REQUISITES AND PROPOSAL EVALUATION

1. Pre-requisites:

Following are the pre-requisites for the bidder to be considered responsive to this tender:

(A) Established Entrepreneur:

(i) The Bidder should be either a body incorporated in India under the Companies Act, 1956 or Companies Act, 2013 including any amendment thereto and engaged in the business of Solar Power/Renewable Energy.

OR

The Bidder should be either a body incorporated in India under the Limited Liability Partnership Act 2008; A subset of Companies Act, 2003 and engaged in the business of Solar Power/Renewable Energy.
A copy of certificate of Incorporation should be furnished along with the bid in support of above.

OR

The Bidder should be a Firm registered under Partnership Act in India.
A copy of certificate of Form-G/Copy of Registered Partnership Deed should be furnished along with the bid in support of above.

OR

The Bidder should be a Firm registered as Sole Proprietor under Shop Act.
A copy of certificate of TIN Number should be furnished along with the bid in support of above.

(ii) The bidder has financial capability to take up the proposed work to be supported by Audited balance sheet for any three years from 2016-17, 2017-18, 2018-19 and 2019-20 (in case of 2019-20, provisional balance sheet along with CA certificate should be attached) and there should be **Minimum Average Annual Turnover of Rs. 20 lakh in last three years.**

Please refer Section-4 of this Bid.

(iii) The bidder should have minimum two years experience of successful installation of Grid connected PV projects.

(a) The bidder should have cumulative experience of executing > = **20kWp** Grid

	connected SPV Power Plants Installations in India during 2017-18 and 2018-19& up to date of submission of bid. **OR** The bidder should have cumulative experience of executing > = **40kWp** Grid connected SPV Power Plants and/or Off-grid SPV systems installations in India during 2017-18 and 2018-19 & up to date of submission of bid + (b) The details of projects executed during period mentioned above should be listed in Annexure-3(A). A certificate issued by the SNA/ Govt. Organisation/SECI/ Project Owner towards the satisfactory installation and functioning of the power plants to be furnished by the bidder.
(iv)	**Details of „After Sales & Service Centre" existing and proposed to be set up in the State of Rajasthan. Refer Annexure 3(B) & 3(C).**
(v)	The bidder should have valid GST and PAN registration certificate. Registration document (s) to be provided by the bidder where it is presently operational/Company is registered **(Copy to be furnished in support).**
(vi)	The Bidder shall have Electrical Contractor License of any State across India.

Note:

(i) The bidder must fill up above information clearly in enclosed sheet and attach all required documents (self attested) in support as at a glance Techno- Commercial qualification details.

(ii) If supporting documents (self attested) are not attached for each eligible criteria above, the bid shall be rejected without further reference.

2. <u>Submission</u> :

(a) First the **Cover-1** containing scanned copies of DD"s of (1) Tender Cost, (2) RISL e-proc charges, (3) EMD (**No Exemption in EMD allowed**) shall be opened and checked for confirming the eligibility for opening Cover-2 (Technical bid).

(b) Then **Cover-2** (Technical bid) shall be opened of those bidders who confirms as per 2(a).

(c) The evaluation of techno- commercial bid will be done &price bids **(Cover-3)** through e-procurement only of those bidders will be opened, who are found technically eligible and qualified.

(d) The basis of evaluation shall be the cost/rate quoted in the Price Schedule. 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.

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PART – B
PROPOSAL EVALUATION
Check list for evaluation

The bidder shall declare himself as empaneled vendor of RREC and then submit the details of their credentials as under :

Envelope 1

S. No.	Details required	Details of Attachment
1	**Cost of Tender:** Cheque: in favour of Commissioner **Municipal council pali payable at Pali**	DD/ Banker"s Date: Amount :
2	**e-proc Charges:** in favour of **Managing Director, RISL, payable at Jaipur.**	DD/ Banker"s Cheque: Date: Amount :
3	**EMD** **Commissioner Municipal council pali payable at Pali ;**	DD/ Banker"s Cheque certificate in favour of

Technical Bid: The bidder should upload (in Cover-II online) duly signed complete bid document, required certificates and information as instructed

S. No.	Details required;	Details of Attachment	Page No. Of self attested attached document
1.	Detail of firm		
2.	Technical experience detail		
3.	Financial turn over detail		
4.	**Details of „After Sales & Service Centre" existing and proposed to be set up in the State of Rajasthan. Refer Annexure 3(B) & 3(C).**		
	The bidder should have **valid GST and PAN registration certificate.** Registration document (s) to be provided by the bidder where it is presently operational/Company is registered.		

(ii)	The Bidder shall have Electrical Contractor License of any State across India.		
6.	**Duly signed Bid Documents** (on Each and every page in confirmation of acceptance of Terms and Condition of Bid)		
7.	**Authorisation Certificate** (If bid is submitting by any authorised person/firm/agent on behalf of original bidder.)		
8.	**Others** Certificates (if required) in support of clarification of technical requirements.		

Note:-

1. **The information in the above table should be filled properly.**
2. **If any document submitted in support of above parameters found false, the tender will be disqualified and EMD and security Deposit shall be forfeited and bidder shall be blacklisted.**
3. **Cutting should be verified by the signature with seal on every attempt and overwriting not allowed.**
4. **Hard Copies of the documents (except envelope-1) will not be accepted.**

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SECTION – 7

COMPLETION PERIOD

The Bidder shall complete the design, engineering, manufacture, supply, storage, civil work, erection, installation, testing & commissioning of each project **within 3 months** period from the date of issue of sanction letter/work order.

The extension of time period for implementation of the programme is solely on the discretion of the tendering authority.

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SECTION – 8

INSTRUCTIONS TO TENDERERS

8.1 Bidders are required to furnish all information and documents as called for in this Document in English Language. Any printed literature furnished by the proposer may be in another language, provided that this literature is accompanied by an English translation, in which case, for the purpose of interpretation of the document, the English version will govern.

8.2 The Proposal received after the closing date and time shall not be considered.

8.3 Intending bidders are required to carefully go through the instructions included in the document and furnish complete information, necessary documents and schedules.

8.4 Any applicant wishing to undertake visit to area to become familiar with site conditions may do so. For any guidance in this respect, applicant may contact Executive/Assistant Engineer (Electrical) , Municipal council pali.

8.5 All costs towards site visit and submission of documents etc. shall be borne by the applicants themselves.

8.6 Applicants are informed that MCP is neither under any obligation to select any applicant, nor to give any reason for either qualifying or disqualifying any applicant. MCP is also not under any obligation to proceed with the programme or any part thereof.

8.7 At any time prior to opening of price proposals, MCP either at their own initiative or in response to clarifications requested by a prospective tenderer may modify tender by issuing an amendment. Such amendment(s) shall be up loaded on e-proc site.

8.8 The proposals as submitted shall invariably indicate that proposal is firm and that proposals shall remain valid and open for a period of not less than six months from the date of opening.

8.9 After opening of proposals and till final selection of successful bidders(s) no correspondence of any type will be entertained, unless called for by MCP. Any type of uncalled for clarifications on prices and or rebates shall not be accepted.

8.10 Any deviation from any clause of this document must be properly spelt out in a deviation statement to be submitted along with the proposal, giving details of page number and clause number and detailing the deviation. MCP reserves the right to accept or reject any deviation or modify the relevant clause of the document to the extent required by the deviation. Deviation statements in the prescribed Performa (Annexure-5) must be attached with the proposal.

8.11 MCP will review the proposals to determine whether the proposals are substantially responsive to the requirement of this document. Proposals considered non-responsive are liable for rejection.

8.12 MCP shall take up detailed evaluation of the responsive proposals only.

8.13 MCP attaches great importance to maintenance of the systems as it is felt that without proper maintenance after installation of system, consumers may be deprived of the benefits of electricity. To achieve this objective successful bidder shall establish after- sales service network in the area of installation of systems. This may consist of service centre at a convenient place to be reached by a beneficiary. It shall have spares for the system and repair facility.

8.14 Successful Vendor shall provide a guarantee card and operation and maintenance manual in English or Hindi script to beneficiary(MCP). Beneficiaries shall also be educated through brochures about do"s & don"t on the system. The details of after sales service centres along with telephone numbers & contact persons of firm & details of its offices, address, telephone numbers provided to MCP

8.15 It may be carefully noted that maintenance of SPV Systems includes maintenance of all items including all accessories. Complete SPV systems shall bear a warranty for a minimum period of 5 years and solar modules shall have warranty for minimum 10 years against manufacturing defects and performance.

Bidders shall have at least one no. of service centre within the municipal limit and shall have adequately trained staff available at service centres for repair and maintenance of Solar PV Systems. It shall be the responsibility of successful bidder to give required service as and when required to the beneficiary. Bidders will ensure that necessary spares are always available with their service centres to provide necessary after sales service to the customers during the warranty period.

8.19 The bidder must quote the prices strictly in the manner as indicated in the price schedule, failing which proposal is liable for rejection.

8.20 The bidder should sign the proposal form on each page and also at the specified location. Each and every paper enclosed must be given a page no. like 1,2,3,..... etc. & a bid summery must be enclosed along with covering letter on letter Head of firm.

8.21 Successful bidder will be required to enter into an agreement with submission of required Security deposit amount in the prescribed format within scheduled timeline as described in work order/LOA. In the vent of failure of bidder the full earnest money deposited can be stand forfeited.

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SECTION – 9

TERMS & CONDITIONS

THE WORK OF SUPPLY & INSTALLATION COMMISSIONING & COMPREHENSIVE MAINTENANCE FOR FIVE YEARS OF GRID CONNECTED SPV SYSTEMS

9.1 Intending bidder shall have to deposit Tender Cost, e-proc. Charges earnest money in the form of Demand Draft / Bankers cheque without which tender will not be considered. (Amount and to whom /in favour of are mentioned.)

9.2 (i) The Earnest Money will be refunded to the unsuccessful Bidders only after finalisation of the proposals and agreements with successful bidders and in case of successful Bidders it may be adjusted if deposited in cash or released after submission of required SD.

(ii) Security Deposit:- The successful bidder shall be required to furnish security deposit @ 5% against order value at the time of Award of Contract and Signing of Agreement.

(iii) The earnest money of successful bidder may be adjusted towards required 5% security deposit against order value at the time of execution of agreement, in case of cash deposited EMD. Balance amount of security deposit amount, if any after adjusting EMD should be deposited in the form of DD/Bank guarantee(valid for 66 months) at the time of execution of agreement. Further it should be revised according to further allocation of work/targets also. The Security Deposit shall be released to the successful Bidder(s) after Completion of o&M period i.e. 5 years from work order.

9.3 At any time or at the end of agreement cost of damaged items not got repaired as per norms and laps of services during warranty period reported as default will be deducted from performance security on risk and cost basis.

9.4 Acceptance of the proposal(s) will rest with the Commissioner, MCP, Pali who does not bind himself to accept the lowest offer and may reject any proposal without assigning any reasons thereof.

9.5 No foreign exchange will be provided by the MCP.

9.6 The rates quoted for supply of SPV systems must be firm and fixed, FOR site(s) as per prescribed format.

9.7 The Successful Vendor shall ensure timely attending to faults; it should be attended by the successful Vendor within 48 hours of lodging. **In case the successful Vendor is failed to provide proper maintenance of the systems within 48 hours days period from lodging, on further delay in attending and rectifying the fault penalty @Rs.20/- per day per kW will be charged by MCP from maintenance amount released every year as per payment terms condition. This penalty will be in addition to clause: 2.4 of Tender document.**

Successful Vendor will maintain a complaints & rectification dairy in two copies, one copy will remain with Successful Vendor and other copy will remain with MCP. This will be verified by Exen/Aen & other MCP officers during visits and copy of the same will be provided by the vendor to MCP at the time of final payment claim.

9.8 An agreement in the format shall be entered into within scheduled timeline as described in work order/LOA with required SD under clause 9.2(ii).

9.9 In the event of breach of any of the conditions of the contract at any time on the part of the Empanelled Vendor the contract may be terminated summarily by Managing Director, RREC, Jaipur without compensation to the contractor.

9.10 The price quoted for the systems must be including installation charges and comprehensive maintenance for 5 years charges as per maintenance and warranty clause and shall remain fixed and firm during the period of contract.

9.11 (a) Complete literature and specifications of the material offered must accompany the tender.

9.12 (b) All type tests certificates as mentioned in the MNRE guidelines for Grid connected Roof top SPV scheme and amended time to time should be furnished.

9.13 Warranty Clause:-

(i) The systems offered shall be warranted (including consumables)by the Empanelled Vendor for use and services for a period of five years from the date of commissioning and solar modules shall have warranty for minimum 10 years. Free replacement warranty on spare parts against manufacturing defects for five years.

(ii) Comprehensive Maintenance Services for 5 years should be provided by the selected Vendor. Quarterly Report for maintenance and Servicing as per Annexure-15 should be prepared and submitted to electric section of MCP.

9.14 (i) The time specified for delivery and completion of work in the contract tender shall be deemed to be the essence of the contract and the successful Bidder/Empanelled Vendor shall arrange to complete work within the period on receipt of order from MCP.

9.15 If the successful bidder(s) fail to complete the work in the period specified in the authorisation letter / contract, the MCP may at its discretion to allow an extension in time of completion, subject to recovery from the Vendor an agreed liquidated damages as per agreement clause.

1. The maximum amount of agreed liquidated damages shall be 10% of project cost amount.
2. If the Empanelled Vendor requires an extension of time in completion of contractual supply on account of occurrence of any hindrance, he shall apply in writing to the purchasing authority for the same immediately on occurrence of the hindrance but not after the stipulated date of completion of supply.
3. Delivery period may be extended with or without liquidated damages if the delay in supply of goods is on account of hindrances beyond the control of the bidder.

9.16 Bidder will have to submit GST registration certificate number and GST clearance certificate from the competent authority.

9.17 The bidder shall sign on each page at the end in token of acceptance of all the terms and it would be attached /uploaded with the proposal along with the declaration. He should also sign at the bottom of each of the pages of his tender.

9.18 If a bidder imposes conditions, which are in addition to/or in contravention with the conditions mentioned herein, his tender is liable to be summarily rejected. In any case none of such conditions will be deemed to have been accepted unless specifically mentioned in the letter of authorization issued by MCP.

9.19 If any question is raised or issue arises between the user (beneficiary) of the SPV Off-grid/grid connected SPV Systems and the Empaneled Vendor and matter is taken to a consumer court, then all jurisdiction will be subjected to pali.

9.20 (i) To ensure the quality of the system, successful vendor has to deposit Pre-Dispatch Inspection report of the material proposed to be used from MNRE/RREC at MCP office.

9.21 After qualifying and deciding L-1 offer, if the successful bidder did not take up the work as per work order issued to the firm. MCP will forfeit the deposited amount of the successful bidder with MCP and take action for debarring and blacklisting of the firm.

9.22 Legal proceedings, if any, arising out of the tender contract shall have to be lodged in courts situated in Pali, Rajasthan only.

9.23 If any dispute arises out of the contract with regard to the interpretation / meaning and the breach of the terms of the contract, the matter shall be referred to by the parties to Commissioner, MCP, Pali whose decision shall be final and binding.

9.24 Payment will be released as per following criteria :- (i) 75% after SITC of complete set up as per tender terms and condition. (ii) 5% after successful completion of first year o&m from date of installation.(iii) 5% after successful completion of second year o&m from date of installation(iv) 5% after successful completion of third year from date of installation.(v) 5% after successful completion of fourth year o&m from date of installation.(vi) 5% after successful completion of fifth year o&m from date of installation.

Commissioner
Municipal Council Pali

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

SIGNATURE OF AUTHORISED
SIGNATORY WITH SEAL

SECTION–10

STEPS To TAKE UP THE WORK :

Although the procedure of taking up work to complete as per requirement has already described in the document, in order to provide guidelines at a glance further, the steps to take up work under this programme are summarised as under :

1. The successful bidder shall submit agreement with required formalities as per clause 9.2(ii) within 15 days, subsequently work order shall be issued to the successful bidders.

2. The successful bidder will prepare detailed project report as per site condition and take NOC from jodhpur discom for grid connectivity and install complete set up as per MNRE guidelines for installation of SPV Power Plant for captive consumption.

3. The successful bidder shall complete the work of civil work, erection, testing & commissioning of Power Plant and get joint verification report.

4. The successful bidder will provide maintenance services up to the period of FIVE years from date of commissioning of Power Plant.

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SIGNATORY WITH SEAL

Annexure-1

Brief details of the bidder :

The brief details of the bidder should be filled in by the bidder as under :

S.No.	Particulars required	Details
1.	Name of Firm	
2	Office Address of Registered Office	
5	Registration Number :	
6	Date of Registration :	
7	Registered Address with Tel. Number	
8	Legal Status /Type of Company Attach Proof of Company Registration along with a copy of the Partnership Deed/ Article of Association and Memorandum	Proprietorship/ Partnership/ Private Limited/ Public Limited/LLP (Please tick appropriately and submit the documentary proof)
9	Address of Manufacturing unit with Tel. Number	
10	Details of Product(s) being manufactured at their own:	
11	Name of Directors of Company (at least Two directors with DIN No., email IDs & contact Numbers)	(1) (2)
12	GSTIN Number: PAN Number:	
13	Year from which firm is in business in Renewable Energy Technology	
14	Major Area (Name of States) of working remained till date	
15	Technical Officers/Engineers and other officers/officials are working in the company	(1) Technical Persons (Nos.). ....., (2) Other officers/officials (Nos. .....,
16	Branch offices/Dealers network is available in Rajasthan or not	
17	The person(s) authorised by the company for work of Roof Top SPV Power Plants in Rajasthan	

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Annexure-2

TECHNICAL SPECIFICATIONS FOR GRID CONNECTED SPV SYSTEMS

The proposed projects shall be commissioned as per the technical specifications given below. Any shortcomings will lead to cancelation of work order and forfit of EMD.

1. DEFINITION

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

- Solar PV modules consisting of required number of **Crystalline** PV modules.
- Grid interactive Power Conditioning Unit with Remote Monitoring System.
- Mounting structures.
- Junction Boxes.
- Earthing and lightening protections.
- IR/UV protected PVC Cables, pipes and accessories.
- Solar Meter and Bi-directional Energy Mater

a. SOLAR PHOTOVOLTAIC MODULES:

1.1.1 **The PV modules used should be made in India using only domestic manufactured Solar cells as per MNRE requirement. The empanelled Vendor shall require to submit the self declaration regarding SPV Modules and Solar Cells used under the Scheme are „Made in India‟ from the manufacturer of SPV Modules, supplied under the Scheme before commissioning of the System.**

1.1.2 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 IEC61730 Part-2- 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 through out their lifetime, they must qualify to IEC 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** watts peak 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, preferably having anodized aluminum.
f) The bidder 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 module shall have tolerance of +/- 5 W.
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.

h) Plants installed must have the solar modules tested with relevant dust standards (Applicable standard would be IEC 60068-2-68).

1.1.3 Modules deployed must use a RF identification tag. The following information must be mentioned in the RFID used on each modules (This should be inside the laminate only and must be able to withstand harsh environmental conditions).

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, Im, Vm 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

1.1.4 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 conditions to take maximum insolation. However to accommodate more capacity the angle inclination may be reduced until the plant meets the specified performance ratio requirements.
b) The Mounting structure shall be so designed to withstand the speed for the wind zone of the location where a PV system is proposed to be installed in Rajasthan. 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 MCP. 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 **60kg/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 JBs shall be such that input & output termination can be made through suitable cable glands.
b) Copper bus bars/terminal blocks housed in the junction box with suitable termination threads Conforming to IP65 standard and IEC 62208 Hinged door with EPDM rubber gasket to prevent water entry. Single /double compression cable glands. Provision of earthings. It should be placed at **5 feet** height or above for ease of accessibility.

c) Each Junction Box shall have High quality Suitable capacity Metal Oxide Varistors (MOVs) / SPDs, suitable Reverse Blocking Diodes. The Junction Boxes shall have suitable arrangement monitoring and disconnection foreach 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 while in grid tied mode.
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 of45 degree Celsius, 80 percent humidity and dusty weather.
f) All indoor panels will have protection of IP54 or better. All outdoor panels will have protection of IP65 or better.
g) Should conform to Indian Electricity Act and rules (till last amendment).
h) All the 415 AC or 230 volts devices / equipment like bus support insulators, circuit breakers, SPDs, VTs etc., mounted inside the switchgear shall be suitable for continuous operation and satisfactory performance under the following supply conditions
Variation in supply voltage : +/- 10 % Variation
in supply frequency : +/- 5 Hz

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(In case single phase inverters are offered, suitable arrangement for balancing the phases must be made.)
- Output frequency : 50 Hz
- Grid Frequency Synchronization range : +/-5 Hz
- Ambient temperature considered : -20o C to 50o C
- Humidity : 95 % Non-condensing
- Protection of Enclosure : IP-20(Minimum) for indoor.
  : IP-65(Minimum) for outdoor.
- Grid Frequency Tolerance range : +/-5 Hz
- Grid Voltage tolerance : - 20% & + 15 %
- No-load losses : Less than 1% of rated power
- Inverter efficiency(Min.): >93% (In case of 10kW or above with in-built galvanic isolation)
  >97% (In case of 10 kW or above without inbuilt galvanic isolation)
- 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(10kW and/or above) but In case of less than 10kW single phase inverter can be used.
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) Anti-islanding (Protection against Islanding of grid): The PCU shall have anti islanding protection in conformity to IEEE 1547/UL 1741/ IEC 62116 or equivalent BIS standard.
f) Successful Bidders shall be responsible for limiting dc injection into the grid and load as per the CEA/state regulations.
g) The PCU/ inverter generated harmonics, flicker, DC injection limits, Voltage Range, Frequency Range and Anti-Islanding measures at the point of connection to the utility

services should follow the latest CEA (Technical Standards for Connectivity Distribution Generation Resources) Guidelines.
h) 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.
i) 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.
j) The PCU/ inverters should be tested from the MNRE approved test centres /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

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 50kW].**
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 instantaneous 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 **[This will be provided with SPV Power Plants of PV capacity more than 50kW].**

xvi. Ambient / Solar PV module back surface temperature shall be also monitored on continuous basis **[This will be provided with SPV Power Plants of PV capacity more than 50kW].**

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 **[This will be provided with SPV Power Plants of PV capacity more than 50kW].**

xviii. Remote Monitoring and data acquisition through Remote Monitoring System software at the owner /RREC 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 selected/successful Vendor. Provision for interfacing these data on RREC 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 borned 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 MCP 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. Decisions of appropriate authority like DISCOM, RERC 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 NFC17-102:2011 standard. The protection against induced high-voltages shall be provided by the use of metal oxide varistors (MOVs) and suitable earthing such that induced transients find an alternate route to earth.

12.2. SURGE PROTECTION

Internal surge protection shall consist of three SPD type-II 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 lighting arrester/masts should also be earthed inside the array field. Earth Resistance shall be tested in presence of the representative of Department/RREC 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.

12.4. GRID ISLANDING:

i. In the event of a power failure on the electric grid, it is required that any independent power-producing inverters attached to the grid turn off in a short period of time. This prevents the DC-to-AC inverters from continuing to feed power into small sections of the grid, known as "islands." Powered islands present a risk to workers who may expect the area to be unpowered, and they may also damage grid-tied equipment. The Rooftop PV system shall be equipped with islanding protection. In addition to disconnection from the grid (due to islanding protection) disconnection due to under and over voltage conditions shall also be provided.
ii. A manual disconnect 4pole isolation switch beside automatic disconnection to grid would have to be provided at utility end to isolate the grid connection by the utility personnel to carry out any maintenance. This switch shall be locked by the utility personnel.

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: –10oC to +80oC.
iii. Voltage rating 660/1000V
iv. Excellent resistance to heat, cold, water, oil, abrasion, UV radiation
v. Flexible
vi. Sizes of cables between array interconnections, array to junction boxes, junction boxes to Inverter etc. shall be so selected to keep the voltage drop(power loss) of the entire solar system to the minimum (2%).
vii. For the DC cabling, XLPE or, XLPO insulated and sheathed, UV-stabilized single core multi-stranded flexible copper cables shall be used; Multi-core cables shall not be used.
viii. For the AC cabling, PVC or, XLPE insulated and PVC sheathed single or, multi- core multi-stranded flexible copper/Aluminium cables shall be used; Outdoor AC cables shall have a UV-stabilized outer sheath.
ix. The cables (as per IS) should be insulated with a special grade PVC compound formulated for outdoor use. Outer sheath of cables shall be electron beam cross-linked XLPO type and black in colour.
x. The DC cables from the SPV module array shall run through a UV-stabilized PVC conduit pipe of adequate diameter with a minimum wall thickness of 1.5mm.
xi. Cables and wires used for the interconnection of solar PV modules shall be provided with solar PV connectors (MC4) and couplers
xii. All cables and conduit pipes shall be clamped to the rooftop, walls and ceilings with thermo-plastic clamps at intervals not exceeding 50 cm; the minimum DC cable size shall be 4.0 mm2 copper; the minimum AC cable size shall be 4.0 mm2 copper. In three phase systems, the size of the neutral wire size shall be equal or half to the size of the phase wires.
xiii. Cable Routing/ Marking: All cable/wires are to be routed in a GI cable tray and suitably tagged and marked with proper manner by good quality ferule or by other means so that the cable easily identified. In addition, cable drum no. / Batch no. to be embossed/printed at every one meter.
xiv. Cable Jacket should also be electron beam cross-linked XLPO, flame retardant, UV

resistant and black in colour.

xv. All cables and connectors for use for installation of solar field must be of solar grade which can withstand harsh environment conditions including High temperatures, UV radiation, rain, humidity, dirt, salt, burial and attack by moss and microbes for 25 years and voltages as per latest IEC standards. DC cables used from solar modules to array junction box shall be solar grade copper (Cu) with XLPO insulation and rated for 1.1kVas per relevant standards only.

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

xvii. Multi Strand, Annealed high conductivity copper conductor PVC type A pressure extruded insulation or XLPE insulation. Overall PVC/XLPE insulation for UV protection Armoured cable for underground laying. All cable trays including covers to be provided. All cables conform to latest edition of IEC/ equivalent BIS Standards as specified below: BoS item / component Standard Description Standard Number Cables General Test and Measuring Methods, PVC/XLPE insulated cables for working Voltage up to and including 1100 V, UV resistant for outdoor installation IS /IEC 69947.

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

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

14. CONNECTIVITY

The maximum capacity for interconnection with the grid at a specific voltage level shall be as specified in the RERC 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 point.

ii. Utilities may have voltage levels other than above, DISCOMS may be consulted before finalization of the voltage level and specification be 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 borned 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 RREC.

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 Empanelled Vendor end. A minimum set of spares shall be maintained in the plant itself or can be maintained at Empanelled Vendor 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.

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 to beneficiaries(MCP). 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.

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 MCP for approval.
ii. MCP 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 submit 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

The Contractor shall furnish the following drawings /documents with each Power Plant.
i. O&M Manual/ User Manual
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 ANNUALENERGY REQUIREMENT

The Solar PV system on the rooftop of the selected buildings will be installed for PV capacity permissible by Discom as per regulation issued by RERC.

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.

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

Quality certification and standards for Grid-Connected Rooftop Solar PV Systems are essential for the successful mass-scale implementation of this technology. It is also imperative to put in place an efficient and rigorous monitoring mechanism, adherence to these standards. Hence, all components of Grid-Connected Rooftop Solar PV System/ Plant must conform to the relevant standards and certifications given below:

Solar PV Modules/ Panels	
IEC 61215/ IS 14286	Design Qualification and Type Approval for Crystalline Silicon Terrestrial Photovoltaic (PV) Modules
IEC 61701	Salt Mist Corrosion Testing of Photovoltaic (PV) Modules
IEC 61853- Part 1/ IS 16170: Part 1	Photovoltaic (PV) module performance testing and energy rating –:Irradiance and temperature performance measurements, and power rating
IEC 62716	Photovoltaic (PV) Modules – Ammonia (NH3) Corrosion Testing(As per the site condition like dairies, toilets)
IEC 61730-1,2	Photovoltaic (PV) Module Safety Qualification – Part 1: Requirements for Construction, Part 2: Requirements for Testing
Solar PV Inverters	
IEC 62109-1, IEC 62109-2	Safety of power converters for use in photovoltaic power systems –

	Part 1: General requirements, and Safety of power converters for use in photovoltaic power systems Part 2: Particular requirements for inverters. Safety compliance (Protection degree IP 65 for outdoor mounting, IP 54 for indoor mounting)
IEC/IS 61683(as applicable)	Photovoltaic Systems – Power conditioners: Procedure for Measuring Efficiency (10%, 25%, 50%, 75% & 90-100% Loading Conditions)
IEC 62116/ UL 1741/IEEE 1547 (as applicable)	Utility-interconnected Photovoltaic Inverters - Test Procedure of Islanding Prevention Measures
IEC 60255-27	Measuring relays and protection equipment – Part 27: Product safety requirements
IEC 60068-2 / IEC 62093 (as applicable)	Environmental Testing of PV System – Power Conditioners and Inverters
Fuses	
IS/IEC 60947 (Part 1, & 3), EN 50521	General safety requirements for connectors, switches, circuit breakers(AC/DC): a) Low-voltage Switchgear and Control-gear, Part 1: General rules b) Low-Voltage Switchgear and Control-gear, Part 2: Circuit Breakers c) Low-voltage switchgear and Control-gear, Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units d) EN 50521: Connectors for photovoltaic systems – Safety requirements and tests
IEC 60269-6	Low-voltage fuses - Part 6: Supplementary requirements for fuse-links for the protection of solar photovoltaic energy systems
Surge Arrestors	
BFC 17-102:2011	Lightening Protection Standard
IEC 60364-5-53/ IS 15086-5 (SPD)	Electrical installations of buildings - Part 5-53: Selection and erection of electrical equipment - Isolation, switching and Control
IEC 61643-11:2011	Low-voltage surge protective devices - Part 11: Surge protective devices connected to low-voltage power systems - Requirements and test methods
Cables	
IEC 60227/IS 694, IEC 60502/IS 1554 (Part 1 & 2)/IEC69947 (as applicable)	General test and measuring method for PVC (Polyvinyl chloride)insulated cables (for working voltages up to and including 1100 V, and UV resistant for outdoor installation)
BS EN 50618	Electric cables for photovoltaic systems (BT(DE/NOT)258), mainly for DC Cables
Earthing/ Lightning	
IEC 62561 Series (Chemical earthing) (as applicable)	IEC 62561-1 Lightning protection system components (LPSC) - Part 1: Requirements for connection components

	IEC 62561-2 Lightning protection system components (LPSC) - Part 2: Requirements for conductors and earth electrodes IEC 62561-7 Lightning protection system components (LPSC) - Part 7: Requirements for earthing enhancing compounds
Junction Boxes	
IEC 60529	Junction boxes and solar panel terminal boxes shall be of the thermoplastic type with IP 65 protection for outdoor use, and IP 54 protection for indoor use
Energy Meter	
IS 16444 or as specified by the DISCOMs	A.C. Static direct connected watt-hour Smart Meter Class 1 and 2 - Specification (with Import & Export/Net energy measurements)
Solar PV Roof Mounting Structure	
IS 2062/IS 4759	Material for the structure mounting

Note- Equivalent standards may be used for different system components of the plants.

Annexure-3(A)

A. SCHEDULE OF EXPERIENCE (Supply & Installation)
(Refer Section-6)

(Please attach certificates in support from the concerned nodal agency /Govt. Organisation/ MNRE authorised Agency /Project owner for work executed)

S. No.	Details of SPV systems installed during 2017-18, 2018-19 and till date of submission of Bid	Year	Deptt./Agency /Beneficiary for which work carried out	Total kW size of work.	Cost of works in {Amt in Lakhs}	Attachment at Page No. Of Techno-Commercial bid
1.						
2.						
3.						
4.						
			TOTAL :			

{Please refer Section-6 : Prerequisite, to be eligible in this tender}

SIGNATURE & SEAL OF PROPOSER

Annexure-3(B) & 3 (C)

DETAILS OF AFTER SALE SERVICE CENTRES (EXISTING/PROPOSED)

B. Details of after sale service centres existing in the state of Rajasthan

S. No.	Name of Dealer/centre	Village	Tehsil	District	Name of contact Person & Phone Number

SIGNATURE & SEAL OF TENDERER

A. Details of after sale service centres located/proposed near by.

S.No.	Name of Dealer/centre	Village	Tehsil	District

Note: This is for information purpose only, final details of After Sales Service Centres can be given later on.

SIGNATURE & SEAL OF TENDERER

Annexure-4

PRICE BID

(Refer Section-5: To be filled online in .xls format only)

Bidder shall quote rates / costs in the format given below for Design, supply, erection/ installation, commissioning & maintenance of grid connected SPV Power Plants as per guidelines and specifications/standards specified in MNRE grid connected guidelines (Annexure-18) and amended time to time complete with all accessories, auxiliaries and components F.O.R. site including installation, commissioning and Five Years comprehensive maintenance, excluding the subsidy to be claimed by vendor from RRECL Jaipur(if applicable and provided)

NIT No: **Dated :.**

Signature of theTenderer/
AuthorisedSignatory

Note:

(i) This information should be filled on-line on e-procurement site in Cover-III (.xls format) only as per procedure. If Project Cost is submitted in Cover-I and/or Cover- II (Technical Bid) by any Bidder, their offer will be summarily rejected.

(ii) Vendor has to quote rates for per Kwp for total approx.80Kwp capacity(which can be increased or decreased as per site condition and report prepared by successful bidder before installation as per work of scope condition)excluding the subsidy that vendor will claim from RRECL and/or MNRE.

Annexure-5

DEVIATION STATEMENT

Details of Deviations from the Tender are as under:-

S.No.	**Page No. of Documents**	**Clause No.**	**Details of deviations**

Note: MCP is at liberty to accept or not to accept any deviation. No tender will be accepted with deviation without prior approval from competent authority of MCP.

SIGNATURE OF AUTHORISEDSIGNATORY WITH SEAL

Annexure- 6

MUNICIPAL COUNCIL PALI

Near Suraj pole pali.

T E N D E R F O R M

1 Subject — Tender for Design, Supply, Installation, testing, Commissioning and Maintenance for 5 Years of grid connected SPV Power Plants at MCP office building.

2 Name and full postal address, Contact Number and Email of the firm submitting the proposal

3 To be Addressed to — **Commissioner, Municipal Council pali, Near suraj pole, Pali.**

4 Reference (NIT No): — **NIT No: Light/SPV Rooftop Prg./2019-20/ Dated:**

5. The fee as per tender has been submitted/deposited as under :

S.No.	Details	Amount	CR No./DD No.
1.	**Cost of Tender:** in favour of **Commissioner,Municipal council pali payable at Pali**		
2.	**e-proc Charges:** in favour of **Managing Director, RISL, payable at Jaipur.**		
3.	**EMD**in favour **Commissioner,Municipal council pali payable at Pali**	Rs.	

6. We agree to abide by all the conditions as mentioned in Tender notice No .....Dated …….. issued by the Commissioner, MCP, pali and (all the pages of which have been signed by us in token of acceptance of the terms mentioned therein).

7. The Costs/Rates for the supply of material installation, commissioning & maintenance thereof are given in the schedule of prices attached herewith.

SIGNATURE OF TENDERER WITH SEAL.

Annexure-7

FORMAT OF INSTALLATION CERTIFICATE

GSTIN No:	M/s..... Address:	Phone No: Fax No: E-mail :

Date of Installation :

Name of Beneficiary : - MUNICIPAL COUNCIL PALI

Address of Place of Installation :- Main office building

Name of City : PALI Tel.No: 02932-250033 ./Mobile No:

Email Id: cmcpali@yahoo.co.in.

Adhaar No.....,K.No. in Electricity Bill..... ,
Location of Project .....(Latitude, Longitude in decimal)

Certified that .....kW PV Capacity SPV Roof Top Grid connected Power Plant in reference to MCP order No:.....Dated:..... and further sanction letter No: ..... Dated:..... has been installed and commissioned at the place mentioned and taken over the system by beneficiary in good working condition: The details of material supplied and installed are as under :

S.No.	Item:	Make & capacity of each	Quantity	Serial Numbers.
1.	SPV Module of..... Wp each:			
2.	Invertor/ PCU			
3.	Module Stand			
4.	Cable			
5.	Lighting Arrestor			
6.	Surge Protection device			
7.	Other items.....			

Signature of Beneficiary:

Signature of Firm"s authorised Person . With seal.

Note:GSTIN No. should be printed or stamped properly.

Annexure-7(A)

Joint Inspection Report

Certified that.....kWp Solar Power Plant under Rooftop Scheme of MCP in reference to MCP work order .....Dated ..... has been installed and commissioned at the place of beneficiary i.e. Sh./Smt./Miss. …… The details of material supplied and installed are as under :

S.No.		Details		
1.	Solar Structure			
2.	Solar Module a) Capacity b) Make c) Nos.			
3.	DCDB			
4.	ACDB			
5.	Solar Inverter	I	II	III
	a) Capacity b) Make c) Nos. d) Reading			
6.	Solar Meter & Net Energy Meter	**Solar Meter** a) Capacity b) Make c) No. d) Reading	**Net Meter** a) Capacity b) Make c) No. Reading	
7.	Earthing			
8.	LA			
9.	Certificate of Electrical Inspector	Attached		
10.	**Remote Monitoring System Provided**	YES		
11	Instruction Manual, Guarantee Card & Invoice of System Provided to beneficiary	YES / NO		

The above system has been inspected by us jointly on dated …… and the same was found working satisfactorily and taken over in good condition by beneficiary.

Signature of MCP Representative	**Signature of Firm's Representative**	**Discom Representative Jodhpur Discom**

Name
Designation
Address
Contact No.
Email id

Annexure-7(B)

Declaration by the Bidder regarding Qualifications

Declaration by the Bidder

In relation to my/our Bid submitted to….....for procurement of…… in response to their Notice Inviting Bids No…….. Dated ……. I/we hereby declare under Section-7 of Rajasthan Transparency in Public Procurement Act, 2012, that:

1. I/we possess the necessary professional, technical, financial and managerial resources and competence required by the Bidding Document issued by the Procuring Entity;
2. I/we have fulfilled my/our obligation to pay such of the taxes payable to the Union and the State Government or any local authority as specified in the Bidding Document;
3. I/we are not insolvent, in receivership, bankrupt or being wound up, not have my/our affairs administered by a court or a judicial officer, not have my/our business activities suspended and not the subject of legal proceedings for any of the foregoing reasons;
4. I/we do not have, and our directors and officers not have, been convicted of any criminal offence related to my/our professional conduct or the making of false statements or misrepresentations as to my/our qualifications to enter into a procurement contract within a period of three years preceding the commencement of this procurement process, or not have been otherwise disqualified pursuant to debarment proceedings;
5. I/we do not have a conflict of interest as specified in the Act, Rules and the Bidding Document, which materially affects fair competition;

SIGNATURE OF AUTHORISED
SIGNATORY WITH SEAL

Date:

Name :

Designation:

Address:

Annexure-8

Declaration of material proposed for supply under this programme by the Bidder

S.No.	Detail of Products/material proposed for supply for different models:	Make	Tested from { Enclose the test certificate}

SIGNATURE OF AUTHORISED
SIGNATORY WITH SEAL

Annexure-9

Joint MONTHLY MAINTENANCE & SERVICING REPORT

1. DETAILS OF SOLAR PHOTOVOLTAIC SYSTEM INSTALLED

1. Supplied by :
2. Date of installation:
3. Servicing period : From ……. to ……..

2. BENEFICIARY PROFILE

1. Name and address of Beneficiary:- Municipal council pali

3. TECHNICAL DETAILS

1. Module Capacity, make and serial numbers :-
2. Inverter Capacity, make and serial no.

4. CHECK OF THE PRODUCT

1. Correct inclination and orientation of SPV panel :
2. Cleaning of dust from SPV panel :
3. Interconnection of modules, charge controller etc.:
4. Fuse of charge controller:
5. Working of inverter

5. DIFFICULTIES IN OPERATION/ PROBLEM FACED BY BENEFICIARY(MCP):

6. DIAGNOSIS DETAILS/ REPAIR ACTION:

7. DATE ON WHICH SYSTEM WAS LAST ATTENDED:

8. GENERATION DATA AND CUF DURING THE PERIOD

7. REMARKS:

MCP Name & Signature
Date:

Firm‟s Name & Signature of Authorised Person
(with rubber stamp)

Price Schedule

To be filled online in prescribed Boq format

Name Of Work :–SITC of grid connected Roof top solar PV with Net metering at mcp office building including 5 year comprehensive maintenance.					
S.No	Particulars	Qty	unit	Rate per	Total
1	Design, Supply, Installation, testing, Commissioning and Maintenance for 5 Years of grid connected SPV Power Plants at municipal council pali main office building as per tender documents& terms and condition,including all taxes and excluding subsidy(if applicable for govt. buildings) provided by MNRE/RREC.	80	Kwp		