



जिल्हा परिषद, रत्नागिरी.  
भारतरत्न डॉ.बाबासाहेब आंबेडकर भवन,  
माळनाका रत्नागिरी ४१५ ६१२.



जाहिरात

विषय - जिल्हा वार्षिक योजना सन २०२१-२२ अंतर्गत अपारंपारिक ऊर्जा विकास कार्यक्रमांतर्गत सौर उपकरणे  
आस्थापित करणेकामी निविदा/दरपत्रक मागविणेबाबत.

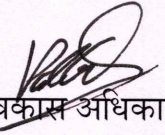
निविदा कालावधी दिनांक - १९/०९/२०२२ ते २५/०९/२०२२

निविदा उघडणचे दिनांक - २६/०९/२०२२

कृषि विभाग, जिल्हा परिषद, रत्नागिरी मार्फत प्रसिध्द करणेत आलेल्या कामांची यादी खालील  
प्रमाणे.

अ.क्र.	कामाचे नाव	प्रकल्प क्षमता	
१	फलोत्पादन रोपवाटिका पोमेंडी (मुख्य विहिर ) सौर पारेषण संलग्न विद्युत संच बसविणे.	२ K. W.	
२	प्राथमिक आरोग्य केंद्र दाभोळ पारेषण सलग्न सौर विद्युत संच आस्थापित करणे. (कार्यालयीन इमारत)	४ K. W.	
३	प्राथमिक आरोग्य केंद्र केळशी पारेषण विरहित सौर विद्युत संच आस्थापित करणे.	९ K. W.	
४	तालुका फळरोपवाटिका, हातखंबा झरेवाडी सौर पारेषण विरहित सौर पंप बसविणे. (शेततळे न.२)	२ H.P.	
५	ग्रामपंचायत नाचणे, ता.जि.रत्नागिरी च्या आवारातील शासकिय इमारतीकरीता पारेषण सौर विद्युत संच आस्थापित करणे. सौर पारेषण संलग्न विद्युत संच बसविणे.	२० K. W.	
६	ग्रा.पं.शिरगांव ता. जि. रत्नागिरी येथील इमारतीकरीता पारेषण संलग्न सौर विद्युत संच आस्थापित करणे.	५ कि.वॅट	
७	तालुका फळरोपवाटिका, हातखंबा झरेवाडी सौर पारेषण विरहित सौर पंप बसविणे. (शेततळे न.१)	२ H.P.	
८	फलोत्पादन रोपवाटिका पोमेंडी (शेततळे ) सौर पारेषण संलग्न विद्युत संच बसविणे.	६ K. W.	
९	प्राथमिक आरोग्य केंद्र पिसई पारेषण सलग्न सौर विद्युत संच आस्थापित करणे.	५ K. W.	
१०	प्राथमिक आरोग्य केंद्र दाभोळ पारेषण सलग्न सौर विद्युत संच आस्थापित करणे. (हॉस्पिटल इमारत)	१ K. W.	
११	श्री.स्वामी विवेकानंद विद्यार्थी वस्तीगृह झाडगाव, ता.जि.रत्नागिरी येथील इमारतीकरीता पारेषण संलग्न सौर विद्युत संच आस्थापित करणे.	४ कि.वॅट	
१२	तालुका फळरोपवाटिका, हातखंबा झरेवाडी सौर पारेषण विरहित सौर पंप बसविणे. (बोअरवेल नं.२)	३ H.P.	
१३	तालुका फळरोपटिका, हातखंबा झरेवाडी सौर पारेषण संलग्न विद्युत संच बसविणे. (बोअरवेल नं.१)	६ K. W.	
१४	तालुका फळरोपटिका, हातखंबा झरेवाडी सौर पारेषण संलग्न विद्युत संच बसविणे. (कार्यालय )	१ K. W.	
१५	तालुका फळरोपवाटिका, हातखंबा झरेवाडी सौर पारेषण संलग्न विद्युत संच बसविणे. (मुख्य विहिर )	४ K. W.	
१६	वेळवी नळपाणी योजना ग्रामपंचायत वेळवी सौर पारेषण संलग्न विद्युत संच बसविणे.	१२ K. W.	
१७	सायटेवाडी नळपाणी योजना ग्रामपंचायत कार्यालय ताडील सौर पारेषण संलग्न विद्युत संच बसविणे.	५ K. W.	
१८	कलानगर नळपाणी योजना ग्रामपंचायत वेळवी सौर पारेषण संलग्न विद्युत संच बसविणे.	१० K. W.	
१९	जिल्हा परिषद प्राथमिक शाळा आदर्श वसाहत कारवंचवाडी नं.२ ता.जि.रत्नागिरी येथील इमारतीकरीता पारेषण संलग्न सौर विद्युत	१ कि.वॅट	

	संच आस्थापित करणे.		
२०	जिल्हा परिषद प्राथमिक शाळा केळये, ता.जि.रत्नागिरी येथील इमारतीकरीता पारेषण संलग्न सौर विद्युत संच आस्थापित करणे.	१ कि.वॅट	
२१	जिल्हा परिषद प्राथमिक शाळा पानवल ता.जि.रत्नागिरी येथील इमारतीकरीता पारेषण संलग्न सौर विद्युत संच आस्थापित करणे.	१ कि.वॅट.	
२२	जिल्हा परिषद प्राथमिक शाळा उत्कर्ष, कुंवारबांव ता.जि.रत्नागिरी येथील इमारतीकरीता पारेषण संलग्न सौर विद्युत संच आस्थापित करणे.	१ कि.वॅट	
२३	जिल्हा परिषद शाळा, लांजा नं.५ ता. लांजा, जि.रत्नागिरी येथील इमारतीकरीता पारेषण संलग्न सौर विद्युत संच आस्थापित करणे.	२ कि.वॅट	
२४	जिल्हा परिषद, बांधकाम उपविभाग, राजापूर (कार्यालय) सौर पारेषण संलग्न विद्युत संच अग्नीरोधकासह आस्थापित करणे.	२ K. W.	
२५	जिल्हा परिषद, प्राथमिक शाळा नं. १, टेंभ्ये ता. जि.रत्नागिरी येथील इमारतीकरीता पारेषण विरहीत सौर विद्युत संच (६ तास बॅक अप) आस्थापित करणे.	१ कि.वॅट	
२६	जिल्हा परिषद, प्राथमिक शाळा नं. २, टेंभ्ये ता. जि.रत्नागिरी येथील इमारतीकरीता पारेषण विरहीत सौर विद्युत संच (६ तास बॅक अप) आस्थापित करणे.	१ कि.वॅट	
२७	जिल्हा परिषद, प्राथमिक शाळा, आसगे ता. लांजा जि.रत्नागिरी येथील इमारतीकरीता पारेषण संलग्न सौर विद्युत संच आस्थापित करणे.	१ कि.वॅट	
२८	जिल्हा परिषद, प्राथमिक शाळा, गवाणे ता. लांजा जि.रत्नागिरी येथील इमारतीकरीता पारेषण संलग्न सौर विद्युत संच आस्थापित करणे.	१ कि.वॅट	
२९	जिल्हा परिषद, प्राथमिक शाळा, पुणस ता. लांजा जि.रत्नागिरी येथील इमारतीकरीता पारेषण संलग्न सौर विद्युत संच आस्थापित करणे.	१ कि.वॅट	

  
 कृषि विकास अधिकारी  
 जिल्हा परिषद, रत्नागिरी

## SECTION-I

### BID INVITATION

#### Brief Description of Tender Process

- The Agriculture Development Officer , Zilla Parishad Ratnagiri, invites eligible bidder to submit a Bid in accordance with the provisions of this Tender Document. In this Tender Document, the term "Bidder", which expression shall, unless repugnant to the context, include all parties who have submitted tender in response to this Tender Document within the stipulated time frame for submission.
- The Bidders shall submit the bids in two parts by following tendering process described in tender document. First part comprises of the technical bid and the second part comprises of the financial bid in accordance with this Tender Document.
- In terms of the Tender Document, a Bidder will be required to deposit **non- refundable Tender document fee** and **refundable Earnest Money Deposit (EMD)** along with this bid.
- we will open the technical bid of the Bidder, by tendering process. The financial bid will be opened of those bidders which will be qualified in the technical bid.

#### Bidding Information

1	Tender Reference No	No.RZP/KRUSHI/C-4/1908/2022 Date - 17/09/2022
2	Tender can be Submitted	Between - 19/09/2021 9.45 am to 25 /09/2021 6.15 pm
3	Estimated Cost 01 kWp <b>Off Grid</b> SPV Power Plant	<b>97,868/-</b> (The above estimated costs are inclusive of total system cost and its installation commissioning, transportation, insurance, five year CMC, and applicable fees and taxes.)
4	Tender document fee	Rs. <b>1,600/- (Rs One Thousand only)</b> Non-refundable & Non Transferable; to be submitted online
5	Earnest Money Deposit (EMD)	Rs. <b>8,000/- (Rs. Eight Thousand Only)</b> Non Transferable; to be submitted online
6	Date & Time of Pre Bid Meeting	All participants are requested to send their queries, if any, on or before - 00.00 Hrs <a href="mailto:adortn@rediffmail.com">adortn@rediffmail.com</a> Pre bid meeting - , Hrs at Agriculture Development Officer chamber, Zilla Parishad Ratnagiri
7	Last date & Time for submission of Bids	25/09/2022
8	Date & Time of opening of Technical Bid	26/09/2022 At 11.00 am
9	Security Deposit	<b>2,936/-</b>
10	Address for Submission and Venue for Tender opening	Dr.Babasaheb Ambedkar Bhavan 1 st floar, Agriculture Department, Zilla PArishad Ratnagiri 415612 Telephone no. -02352-224627, 223068. Email Id - adortn@rediffmail.com

- The date & time of opening of Price Bid will be announced later
- If any technical difficulties arise while filling up tender, please contact Agriculture Development Officer Zilla Parishad Ratnagiri
- It is compulsory to pay tender document fee, EMD by Challan to Account of CAFo ZP Ratnagiri Account No. 1612101020013
- Eligible bidders can submit the Bid to Office Of Agriculture Development Officer, Zilla Parishad Ratnagiri

sign/-

Agriculture Development Officer  
Zilla Parishad Ratnagiri

प्रत-

1. जिल्हा परिषद, रत्नागिरी नोटीस बोर्ड.
2. जिल्हा परिषद, रत्नागिरी वेबसाईड



## SECTION-II

### INFORMATION AND INSTRUCTION TO BIDDERS

The Agriculture Development Officer, Zilla Parishad Ratnagiri, invites tender from eligible bidders for "works" include Design, Manufacture, Supply, Installation, Testing and Commissioning with five years Comprehensive Maintenance of **Off Grid Solar Photo Voltaic (SPV) Power Plant at Zilla Parishad, Primary School No. 1, Tembhe Tal & Dist.Ratnagiri. Installation of non-transmission connected solar power system (6 hours back up) for buildings in Tal & Dist.Ratnagiri. Total 01 kwp** (Herein after referred to as the contract of works) and as described in the tender document on 'Turnkey Contracts ' under Tender No: No.RZP/KRUSHI/C-4/1908/2022. DATE- 17/09/2022

#### 1. Scope of Works

- Design, Manufacture, Supply, Installation, Testing and Commissioning with five years comprehensive maintenance of **Total 01 kwp** on 'Turnkey Contract' as described in the tender document.
- Free replacement of defective components of systems within Comprehensive Maintenance period (CMC) of 5 years after commissioning of the projects for efficient running of the system.
- Detailed planning for smooth execution of project.
- Selected Bidder shall be bound to operate and maintain the system as per the rules, regulations and modalities as prescribed by MNRE and MEDA for the effective functioning of the project.
- **Time Period** : The successful Bidder will be required to **complete the work within 60 Days from the date of issue of work order.**
- Bidder shall complete and cover all works described in the tender. However if any item of work is not mentioned in tender but required for completing the project. The same shall be deemed to be included in bidder's scope.
- Bidder shall obtain the statutory permissions from statutory bodies wherever required for execution of works.
- Partial bids or bids which do not cover the entire scope of the project will be treated as incomplete and not responsive to the terms and conditions of tender are liable to be rejected.

#### 2. Eligibility

The bidder shall provide sufficient documentary evidence to satisfy the following conditions:

- I. The bidder Shall manufacture/supply the material On is own or with joint venture** (module & inverter) only as per the standards mention in tender document . **They should provide** IEC certificate of SPV Module & Inverter and test report from authorized test centre of MNRE, GoI.
- II. Shall have experience for single installation for cumulative capacity of 20 kWp** in which at least one project shall be of 10 kW capacity **Off grid** SPV system; installed, commissioned & working successfully for at least one year. Satisfactory completion certificate along with contact details of concern authority at installation (Beneficiary/Client) should be submitted. Representative of **ADO Z P Ratnagiri** may visit such installation. Bidders to arrange necessary permissions.
- III. Overall Average Annual Turnover of the Company/Firm/ Corporation in the last two financial years should be at least Rs 10 Lac. (Rupees Ten Lac only)** (This must be the individual Company's turnover and not that of any group of Companies. A summarized sheet of turnover for last two years with average turnover certified by registered CA should be compulsorily enclosed)

#### 3. Standards / Certificates

- The material/ equipments /components supplied and works executed under this contract shall be confirmed to the standards mentioned in the technical specification & Annexure- A. Where no standards are mentioned, the latest version of Indian Standard Institution or Bureau of Indian Specification shall be considered.
- The Bidder shall submit all the valid test certificates and reports of the system components following the latest MNRE Guidelines and the same components shall be supplied for which the test reports/ certificates are submitted.

#### 4. Instructions

- Bidder shall submit his information, experience certificates, test reports and other such relevant document's specified in the list of other important documents .The bidder should visit the site &

perform technical survey along with concern persons of Office of ADO ZP Ratnagiri & BDO Panchayat Samiti Dapoli, and submit the details of the survey of site as per the **Format - H** during for filling of tender.

- The technical proposals confirming to eligibility criteria and found satisfactory will be taken up for detailed technical evaluation.

A technical evaluation committee shall evaluate the Bids submitted by bidders for detailed scrutiny. During evaluation of the technical bids, ADO ZP Ratnagiri may at its discretion ask the bidders for clarification of their bid.

- In case bidder does not fulfill the technical bid the financial bid shall not be opened & he shall be disqualified from further bidding process.

- Price Proposals of bidders qualifying above conditions shall be subsequently opened. The time and date of the opening of the Price bid shall be intimated on web site by ADO ZP Ratnagiri.

- The price bid will be opened in presence of the all technically qualified bidders.

- Bids submitted without EMD will be rejected

- **The Bidder shall submit copies of**

1. **GST registration Certificate**

2. **PAN Card.**

3. **Income Tax Returns of previous three assessment years.**

**For any Clarification/online support please contact at mail id [adortn@rediffmail.com](mailto:adortn@rediffmail.com) ,**

- Agriculture Development Officer, Z P Ratnagiri reserves the right

- To reject or accept any or all tenders without assigning any reasons thereof.

- The work order is not transferable. Subletting is not allowed.

- ADO ZP Ratnagiri will not entertain any claim at any stage of successful bidder on the plea that the bidder was not having sufficiently acquainted himself to all the site conditions

## **5. Cost of Bidding**

The bidder shall bear all costs associated with the preparation and submission of bid and ADO ZP Ratnagiri will in no case be responsible or liable for these costs, regardless of the conduct or outcome of the bidding process.

## **6. Documents Comprising to the tender**

**The tender prepared by the Bidder shall be submitted offline to the Agriculture Department, Zilla Parishad Ratnagiri in Two Pocket viz. Technical Bid and Financial Bid comprising the following components.**

### **Part I - Technical Proposal:**

Bidder shall submit relevant certificates to fulfill the eligibility criteria prescribed in the tender document along with following documents/information.

- 1 Copy of receipt for tender fee

- 2 Copy of receipt for EMD / Valid exemption certificate issued by competent Govt. authority

- 3 Duly stamped and signed tender document (Tender Document)

- 4 **Firm registration certificate with ROC.**

- 5 Copy of PAN

- 6 Copy of GST registration

- 7 Self Certification of No Barr/non failure/blacklisted (Refer Format - B)

- 8 Banker's details of bidder (Refer Format - C)

- 9 Bidder's Information Sheet (Refer Format - D)

- 10 Details of set-up for after sales service (Refer Format - E)

- 11 Financial credentials of bidder (Refer Format- F), along with scanned copy of IT returns for last two financial years.

- 12 Experience for installation and commissioning of SPV power plants/ list of projects. (Refer Format - G). Along with scanned copies of work .

- 13 Site visit report (Refer Format - H) for each site.

- 14 Details of proposed / offered system (Refer Format - I)

- 15 Details for out-put / power generation – assumed & assured from proposed / offered system (Refer Format - J)

Standards as per guidelines issued by MNRE. And details of Guaranty & Warranty.

The Bidder is expected to verify all instructions, forms, terms and specifications in the Tender Document. Failure to furnish all information required in the tender document will be at the Bidder's risk and may result in rejection of the bid.

## **Part II - Financial bid**

### **Financial Bid shall contain:**

- The bidder should quote the price as against total tender estimate as shown in the tender document. The price quoted in the bid will be inclusive of all taxes, duties, insurance and all incidental charges for successful design, supply, installation, commissioning along with comprehensive maintenance for five years of Solar PV Power Plant.
- Prices shall be quoted in Indian Rupees only.
- **In no circumstances, escalation in the prices will be entertained.**
- Financial Bid uploaded with an adjustable price quotation will be treated as non responsive and will be rejected.
- Any Bid not in accordance with above clauses of this Section will be rejected.

### **7. EARNEST MONEY DEPOSIT (EMD), SECURITY DEPOSIT (SD) & FORFEITING OF EMD : A) EARNEST MONEY DEPOSIT:**

- **The Earnest Money Deposit of Rs. 8,000/- should be paid by challan. Tender without Earnest Money Deposit will be out rightly rejected. No interest shall be payable on the amount of Earnest Money. EMD shall be returned to unsuccessful Bidders after acceptance of work order by successful Bidder and EMD of successful Bidder shall be returned after submission of security deposit.**
- Bidders having exemption under MSME shall necessarily submit self attested copy of valid exemption certificate; otherwise tender shall be out rightly rejected. In above event, L1 Bidder is to submit original copy(s) of such certificate/registration for review / verification, before issuing the LOA. In absence of original certificate /registration, strict actions will be taken against such Bidder and EMD amount will be recovered.

### **B) FORFEITING OF EMD:**

The EMD submitted by the Bidder shall be forfeited if:

1. The Bidder withdraws his tender before finalization of work order.
2. The Bidder does not accept work order.
3. The Bidder violates any of the terms and conditions of the tender.
4. The Bidder fails to deposit requisite Security deposit.
5. The Bidder fails / refuses to execute the contract. In this case, Tenderer shall have full right to claim damages thereof in addition to the forfeiture of EMD.

### **C) SECURITY DEPOSIT:**

1. The Bidder shall furnish security deposit at 3% of the total contract value Before issue of work order by way of demand draft from nationalized bank in favour of tenderer payable at Ratnagiri Or by Bank Guarantee of Nationalised Bank.
2. Failure to comply with the terms of security deposit shall result into cancellation of work order without any further reference to the Bidder and the EMD shall be forfeited.
3. The security deposit shall be liable to be forfeited wholly or partly at the sole discretion of the ADO ZP Ratnagiri, if the Bidder either fails to execute the work of above projects or fails to fulfill the contractual obligations or fails to settle in full his dues to ADO ZP Ratnagiri.
4. In case of premature termination of the contract, the security deposit will be forfeited and the ADO ZP Ratnagiri will be at liberty to recover the losses suffered by it & if additional cost is to be paid, the same shall be recovered from the Bidder.
5. The ADO ZP Ratnagiri is empowered to re-cover from the security deposit for any sum due or any other sum that may be fixed by the ADO ZP Ratnagiri as being the amount or loss or losses or damages suffered by it due to delay in performance and /or non -performance and / or partial performance of any of the conditions of the contract and/or non -performance of guarantee obligations.
6. The security deposit shall be released to the Bidder only after contract is completed to the satisfaction of the ADO ZP Ratnagiri.

## **8. PRICE VARIATION & ADDITIONAL SECURITY DEPOSIT (ASD):**

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

In event bidder offers price less than 80% of estimated cost indicated in this tender document; in such case, the tender evaluation committee will assess the authenticity of rate quoted by the bidder and ensure that the quality of work will not get compromised & take decision accordingly. If the committee takes decision to select such bidder from received offer then, bidder must pay additional security deposit (ASD) amount of 10% of difference amount (i.e. estimated cost - offered price) during submission of bid. However if tender evaluation committee disagree with the rate quoted in this context, the tender will be rejected & committee will select the L2 bidder for this work.

## **9. JURISDICTION:**

In case of any dispute, in the documentation and during implementation, commissioning, completion and CMC period, all the matter will be resolve under Ratnagiri Jurisdiction only.

## **10. Period of Validity of Bid**

- Bids shall remain valid for 120 days after the date of opening of Financial Bid.
- In exceptional circumstances, ADO ZP Ratnagiri may solicit the Bidder's consent to extend the period of validity. The request and the responses thereto shall be made in writing . The EMD provided shall also be suitably extended. However Bidder granting the request will not be required nor permitted to modify its bid.

## **11. Mode of submission of bids**

- The Bids shall be submitted to **Agriculture Department by offline mode.**
- ADO ZP Ratnagiri may at its discretion ask the Bidder to submit the hard copy of any of the document/information submitted on **tender** platform.

## **12. Deadline for Submission of Bids**

- Bids must be submitted by the bidder through **Offline Process** not later than the time and date specified in the invitation for Bids.
- The ADO ZP Ratnagiri may, at the discretion, extend this deadline for submission of bids by issuing an addendum, in which case all rights and obligations of Tenderer and Bidders previously subject to the deadline will thereafter be subject to the deadline as extended

## **13. Clarification of Bids**

During evaluation of Bids, tenderer may, at its discretion, ask the Bidder for a clarification of its bid. The request for clarification and the response shall be in writing and no change in prices or substances of the Bid shall be sought, offered or permitted.

## **14. Preliminary Examination**

- tenderer will examine the Bids to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed, and whether the bids are generally in order.
- Arithmetical errors will be rectified on the following basis. If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected. If there is a discrepancy between words and figures, the lower of the two will prevail. If the Bidder does not accept the correction of errors, its bid will be rejected.
- The Bidder is required to carefully examine the Technical Specification, terms and Conditions of Contract, and other details relating to supplies as given in the Bid Document
- The Bidder shall be deemed to have examined the bid document and have obtained information on all matters whatsoever that might affect to execute the project activity and to have satisfied himself



as to the adequacy of his bid. The bidder shall be deemed to have known the scope, nature and magnitude of the supplies and the requirements of material and labour involved etc. and as to all supplies he has to complete in accordance with the Bid document

- Bidder is advised to submit the bid on the basis of conditions stipulated in the Bid Document.
- Bidder's standard terms and conditions if any will not be considered. The cancellation / alteration / amendment / modification in Bid documents shall not be accepted by tenderer
- Bid not submitted as per the instructions to bidders is liable to be rejected. Bid shall confirm in all respects with requirements and conditions referred in this bid document.

### **15. Acceptance or Rejection of Bids**

- tenderer reserves the right to accept or reject any bid or all the bids and to annul the bidding process and reject all bids at any time prior to award of contract, without thereby incurring any liability or any obligation to inform the affected bidder or bidders in this matter.
- Any Bid with incomplete information is liable for rejection.
- For each category of pre - qualification criteria, the documentary evidence is to be produced duly attested by the authorized representative of the bidder and serially numbered. If the documentary proof is not submitted for any/all criteria the Bid is liable for rejection.
- If any information given by the bidder is found to be false/ fictitious, the Bidder will be debarred for 3 years from participating in any other tenders of Tenderer and will be black listed.

### **16. Criteria for Bids evaluation Step 1:**

#### **Test of Responsiveness**

- Prior to evaluation of Bids, Tenderer shall determine whether each Bid is responsive to the requirements of the tender document. A Bid shall be considered responsive only if all documents as outlined in the tender document for two stage bid process are submitted as per the pre-defined format.
- Tenderer reserves the right to reject any Bid which is non -responsive and no request for alteration, modification, substitution or withdrawal shall be entertained by the tenderer in respect of such Bid.

#### **Step 2: Bid Evaluation**

Bid evaluation will be carried out considering the information furnished by Bidders as per the Tender documents. Based on technical/ qualifying criteria preferred bidders will be short listed.

#### **Technical Evaluation**

- Only Technical Proposals conforming to eligibility criteria and found to be responsive will be taken up for detailed technical evaluation. A technical/ tender committee shall evaluate the Bids submitted by bidders for a detailed scrutiny. During evaluation of Bids, tenderer, may, at its discretion, ask the bidders for clarification of their Proposals.

#### **Financial Evaluation**

The price bids of the eligible bidders will then be evaluated in the manner provided below;

- At the outset, the price bids of all the Bidders who are technically qualified in technical evaluation shall be opened in the presence of the Bidders Representatives. Presence of the Bidders Representatives is essential. No claim / further clarification will be entertained, to the Bidder in case the Representative of bidder fails to attend this meeting.
- The bidder's names, the Bid Prices, total amount of each bid and other details as Tenderer may consider appropriate, will be announced and recorded by Tenderer at the opening. The bidder's authorized representatives will be required to sign this record.
- Bidder that has quoted the lowest price (inclusive of all the taxes/duties) without breach of any technical specification as per terms and condition of tender shall be declared as the preferred Bidder.
- The work orders shall be issued to the successful bidder who ever qualifies in the complete process as mentioned above.

### **17. Award Criteria and Award of Contract**

Tenderer will award the contract to the successful bidder whose bid has been determined to be substantially responsive and has been determined as the lowest evaluated bid as per the criteria mentioned above, and submission of Performance Bank Guarantee of 3% of total project cost from any Nationalized Bank valid for period of 5 years. provided further that the bidder is determined to be qualified to perform the contract satisfactorily

### **18. Corrupt or Fraudulent Practices**

Tenderer requires that Bidders shall observe the highest standard of ethics during the execution of contracts. In pursuance of this policy, Tenderer Defines, for the purposes of this provision, the terms set forth as follows:

- “corrupt practice” means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution; and
- “fraudulent practice” means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Government, and includes collusive practice among Bidders (prior to or after tender submission) designed to establish tender prices at artificial non-competitive levels and to deprive the Government of the benefits of free and open competition;
- will reject a proposal for award if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question;
- will declare a firm ineligible for a period of 3 years , if it at any time it determines that the firm has engaged in corrupt or fraudulent practices in competing for awarded work at Government financed contract , or in executing, a contract.

### **19. Terms of Payment:**

a. 100% of the total cost will be released after supply, installation & successful commissioning of the systems duly certified by Bidder, Officer of MEDA & authorized person of Beneficiary along with submission of Insurance policy (cover theft/burglary/ fire/damage) documents effective from date of commissioning for CMC period.

**\*(Payment will be made after receiving of remaining grant from DPC)**

### **Deduction:-**

- i. The TDS at the source will be deducted as per the Govt. rule and regulations.
- ii. Tenderer will issue necessary certificates of TDS deduction
- iii. 'C' / 'D' form will not issued by Tenderer.

**SECTION - III**  
**GENERAL CONDITIONS OF CONTRACT (GCC)**

**1) General Terms and Conditions:**

The following are the General Terms and Conditions of Contract for Supply , installation and commissioning of SPV Power Plant, as per the specifications given in the document.

- a) Bidder shall be responsible for any damage occurred, if any, to other installations of the existing office building / establishment/area at site during the course of work.
- b) The Bidder should provide appropriate tools and equipment's to the workmen and ensure that those are in proper working condition and the workmen use the appropriate tools and take precaution " PLEASE NOTE THAT ANY ACCIDENT TO THE WORK MEN / PUBLIC / ANIMALS / PROPERTY BOTH MOVABLE AND IMMOVABLE SHALL BE ENTIRE AND SOLE RESPONSIBILITY OF THE BIDDER AND ANY PROCEEDING ARISING OUT OF THE SAME SHALL BE AT THE BIDDER'S RISK AND COST, Tenderer OR ITS EMPLOYEES WILL NOT BE RESPONSIBLE FOR ANY SUCH INCIDENT "
- c) Bidder should provide necessary manufacture's test certificates for materials being used for the work. Power curve of all the panels erected by manufacturers shall be provided to the Tenderer.
- d) The selected Bidder is bound to work on the guidelines provided by Tenderer from time to time. Guidelines if issued in future by Tenderer, the changes proposed will also be applicable without augmentation in project cost.
- e) The Bidder shall carry out the work strictly according to the specifications as per given in Section-IV and complete the work within stipulated time.
- f) It is the responsibility of Bidder to submit the reports for systems installed & commissioned and certificates for undertaking the responsibility of maintenance of the systems to Tenderer with a copy to Beneficiary. Bidder shall also impart training to the user for regular Operation & Maintenance of the system and certificate in this respect should be submitted.
- g) Bidders should give Guarantee against any manufacturing defects from the date of commissioning up to CMC period. or any manufacturing defects, bidder shall replace defective parts at free of cost during the CMC period and shall keep the system functional.
- h) Tenderer will do inspection as and when necessary, during the execution of work and thereafter subsequent to installation and commissioning of the work for the purpose of issuing final completion certificate.
- i) In the event of any discrepancy observed in specifications, the specifications given by Tenderer will be final. In the event of dispute arising any time, related to this work and document, decision of the Agriculture Development Officer shall be final.
- j) Tenderer at its discretion may visit supplier's factory for testing / inspection at any time during the period of supply and installation of the systems.
- k) Tenderer will not pay any interest on any amount, due to the Bidders
- l) During the inspection, if any deviations in Technical Specifications are observed, Tenderer reserves right to test any solar module / system at any authorized test centre of MNRE/MEDA. Bidder shall provide the facilities for getting the sample tested & the supplier shall bear the cost for the same.
- m) If the supplier fails to complete the work or partially completes it then, Tenderer reserve right to cancel the work order and get it done from other supplier and any loss due to this shall be recovered either from any amount due to the supplier or from his Security Deposit.
- n) At the time of inspection of MEDA, manufacturer or supplier has to submit the I.V. curves and test reports of supplied PV modules to respective officer.
- o) The Wiring must be carried out in casing -capping / conduit which are suitable as per site condition
- p) It will be responsibility of the Bidder to ensure the satisfactory performance of the system.
- q) The Bidder shall provide the display board of size 3ft x 3ft that gives detailed information of system along with the contact details of manufacturer. This will help the beneficiary during 5 years CMC period.
- r) The Bidder shall comply with the provision of contract labour (Regulation and Abolition) Act 1970, minimum wages Act 1948, payment of the wages Act 1963 Workmen's Compensation Act 1961, the contract labour (Regulation and Abolition) Act 1979 and all other related Acts and any modification thereof or any law relating there to and rules made there under from time to time.
- s) If previous performance of any Bidder is found unsatisfactory or has failed to show progress /execute the system/ project that bidder will be outrightly disqualified.

t) If any information / confirmation on any point of these tender conditions are required Bidder may contact / write to Tenderer at [adortn@rediffmail.com](mailto:adortn@rediffmail.com) giving tender reference no. etc.

u) In the event of any dispute arising during installation & commissioning of the systems related to the work and documents, decision of Tenderer shall be final.

v) Once the Bidder submit his offer and subsequently if not interested to work, in such case Tenderer will forfeit his EMD amount.

w) At the time of placing work order and during the implementation, Tenderer can revise the technical terms and conditions if revised by MNRE, which will be binding on the Bidder.

x) Tenderer reserves the right to select L2 Bidder i.e. second lowest Bidder to complete the work, if L1 i.e. lowest Bidder fails to fulfill tender conditions, subject to L2 bidder accept the work at received L1 price.

y) It is binding on the successful Bidder to submit original certificates, documents required by Tenderer.

z) To ensure timely completion of project & to seek prompt operation maintenance service during CMC period bidder having existing office set-up in Ratnagiri shall be preferred while awarding the contract.

## **2) Communications**

- Wherever provision is made for giving or issuing of any notice, instruction, consent, approval, certificate or determination by any person, unless otherwise specified such communication shall be in writing and shall not be unreasonably withheld or delayed.

- Project review coordination meetings between the Beneficiary, Tenderer's Representative and Contractor shall be conducted on a regular basis or as and when required by the Tenderer, at locations decided by the Tenderer, for Contractor's progress and plans for completing the works, to deal with matters affecting the progress of the Works, and to decide on responsibility for actions required to be taken. Decisions taken and instructions issued during the coordination meetings, as recorded in the Minutes, shall have the same force and effect as if they were written communications issued in this accordance.

## **3) Manner of Execution**

Execution of work shall be carried out in the approved manner as outlined in the technical specifications or where not outlined, in accordance with relevant MNRE / MEDA / BIS / Indian Standard Specifications, to the reasonable satisfaction of The Employer.

- The Contractor/Agency should successfully complete the project within timeframe set out by the employer.

- Tenderer shall not be responsible for any loss or damage of any material when installing SPV power plants.

- Undertake necessary activities during the warranty period as set out in this Contract.

- It is the responsibility of successful bidder to make the insurance (cover theft/burglary/fire/damage) of SPV system from the date of commissioning for the CMC period.

## **4) Application**

These General Conditions shall apply to the extent that they are not superseded by provisions in other parts of the contract

## **5) Standards**

The design, engineering, manufacture, supply, installation, testing and performance of the equipment shall be in accordance with latest appropriate IEC/ Indian Standards and as detailed in the Technical specifications Section as per the MNRE / MEDA requirements of the bid document and Annexure - A. The goods supplied under this contract shall conform to the Standards mentioned where appropriate Standards and Codes are not available, other suitable standards and codes as approved by the authoritative Indian Standards shall be used.

## **6) Inspection:**

- Successful bidder to submit the design engineering documents, Calculations & Drawings within weeks time after issue of work order for review & approve by Tenderer

- The projects will be inspected for quality at any time during commissioning or after the completion of the project by Tenderer.

- Bidder shall inform Tenderer in writing when any portion of the work is ready for inspection (site wise) giving sufficient notice to enable Tenderer to depute officials to inspect the same without affecting the further progress of the work. The work shall not be considered in accordance with the terms of the contract until the competent person from / for MEDA certifies in writing to that effect.
- The cost of Inspection shall be borne by Bidder only.
- Bidder has to strictly follow the specifications given in the work order while carrying out the execution of work. During inspection if it is found that Bidder has deviated from the specifications, Bidder has to do the alteration / modification / reconstructions as per the given specifications at his own cost & risk.

## **7) Transportation**

Where the Contractor/Agency is required under the contract to transport the goods to specified locations defined as Project sites, transport to such places including insurance, shall be arranged by the Contractor / Agency, and the contract price shall include transportation costs.

## **8) Assignment**

The Contractor / Agency shall not assign, in whole or in part to any third party, its obligations to perform under the contract, except with Tenderer 's prior written consent.

## **9) Sub-contracts**

Subcontract is strictly prohibited (Turnkey i.e. E.P.C. as well as C.M.C.)

## **10) Termination for Default**

Tenderer without prejudice to any other remedy for breach of contract, by written notice of default sent to the Contractor/ Agency, terminate the contract in whole or part:

- If the Contractor / Agency fails to deliver any or all the goods within the period(s) or within any extension thereof granted by the Tenderer.
- If the Contractor / Agency, in the judgment of Tenderer has engaged in corrupt or fraudulent practices in competing for or in executing the contract.
- In the event Tenderer terminates the contract in whole or in part, Tenderer may procure, upon such terms and in such manner as it deems. Appropriate goods or services similar to those un delivered and the Contractor / Agency shall be liable to Tenderer for any excess costs for such similar goods or services. However, the Contractor / Agency shall continue the performance of the contract to the extent not terminated.

## **11) Applicable Law**

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

## **12) Notices**

Any notice given by one party to the other pursuant to this contract shall be sent to other party in writing or by email and confirmed in writing to the other party's address specified . A notice shall be effective when delivered or on the notice's effective date, whichever is later.

## **13) Packing**

- The Bidder shall provide such packing of the goods as is required to prevent their damage or deterioration during transit to their final destination as indicated in the contract.
- The packing shall be sufficient to withstand, without limitation, rough handling and exposure to extreme temperatures during transit and open storage.
- Packing case size and weights shall take into consideration, where appropriate, the remoteness of the goods final destination and the absence of heavy handlings facilities at all points in transit.
- The packing, marking and documentation within and outside the item shall comply strictly with such special requirements as shall be provided for in the contract including additional requirements, if any and in any subsequent instructions ordered by the Tenderer.

## **14) Spares & tools-tackles:**

The bidder shall provide / supply its own necessary tools -tackles for erection & testing and required for CMC, along with sufficient quantity for consumable items / spares for replacement, if any.

## **15) Danger plates:**

The bidder shall provide four Danger Notice Plates at PV yard and one Danger Notice Plate at inverter of 200 mm X 150 mm made of mild steel sheet, minimum 2 mm thick and vitreous enamelled white on both sides and with inscription in signal red colour on front side as required. The inscription shall be in English and Marathi language.

**16) Control Room:**

Installation of Inverters and net meter shall be done at safe weatherproof location at each site for SPV power plants

**17) Insurance:**

- The Bidder shall be responsible and take an Insurance Policy for transit -cum-storage-cum-erection for all the materials to cover all risks and liabilities for supply of materials on site basis, storage of materials at site, erection, testing and commissioning. The bidder shall also take appropriate insurance (cover theft/burglary/fire/damage) during O&M / CMC period for 100% of offered price.
- The Bidder shall also take insurance for Third Party Liability covering loss of human life, engineers and workmen and also covering the risks of damage to the third party/ material/ equipment/ properties during execution of the Contract. Before commencement of the work, the Bidder will ensure that all its employees and representatives are covered by suitable insurance against any damage, loss, injury or death arising out of the execution of the work or in carrying out the Contract. Liquidation, Death, Bankruptcy etc., shall be the responsibility of bidder. The bidder shall provide insurance coverage ex-factory until commissioning and acceptance for replacement or repair of any part of the consignment due to damage or loss.

**18) Warranties and Guarantees:**

The Bidder shall warrant that the goods supplied under this contract are new, unused, of the most recent or latest technology and incorporate all recent improvements in design and materials. The bidder shall provide warrantee covering the rectification of any and all defects in the design of equipment, materials and workmanship including spare parts for a period of 5 years from the date of commissioning of project. The successful bidder has to transfer all the Guarantees/ Warrantees of the different components to the Owner of the project. The responsibility of operation of Warrantee and Guarantee clauses and Claims/ Settlement of issues arising out of said clauses shall be joint responsibility of the Successful bidder and the owner of the project and MEDA will not be responsible in any way for any claims whatsoever on account of the above.

**SECTION-IV BRIEF INFORMATION ABOUT SITE**

<b>Sr.No</b>	<b>Name Of Site</b>	<b>SPV Capacity kWp</b>	<b>Estimated Price</b>
1	Zilla Parishad, Primary School No. 1, Tembhe T. Installation of non-transmission connected solar power system (6 hours back up) for buildings in Dist.Ratnagiri.	01 kwp	97,868/-
	<b>Total</b>	01 kwp	97,868/-

The above Estimated costs are inclusive of total system cost and its installation, commissioning, transportation ,insurance, five year CMC and applicable fees and taxes.

## **TECHNICAL SPECIFICATIONS**

### **TECHNICAL SPECIFICATION OF SPVPOWERPLANT:**

#### **1. PVMODULES:**

a. The PV modules must conform to the latest edition of any of the following/equivalent BIS Standards for PV module design qualification and type approval:

- Crystalline Silicon Terrestrial PV Modules IEC61215/IS14286

b. In addition, the modules must conform to IEC61730 Part1-requirements for construction & Part2- requirements for testing, for safety qualification.

c. Identification and Traceability:

Each PV module must use a RF identification tag (RFID) , which must contain the following information:

Name of the manufacturer of PV Module

- (i) Name of the Manufacturer of Solar cells
- (ii) Month and year of the manufacture (separately for solar cell and module)
- (iii) Country of origin (separately for solar cells and module)
- (iv) I-V curve for the module
- (v) Peak Wattage,  $I_m$ ,  $V_m$  and FF for the module
- (vi) Unique Serial No and Model No of the module
- (vii) Date and year of obtaining IEC PV module qualification certificate
- (viii) Name of the test lab issuing IEC certificate
- (ix) Other relevant information on trace ability of solar cells and module as per ISO9000 series.

It may be noted that from 1st April 2013 onwards; RFID shall be mandatory placed inside the module laminate

## **2. BATTERY BANK:**

The batteries shall be solar photovoltaic batteries off loaded electrolyte, low maintenance, lead Acid and made of hard rubber container. VRLA/GEL batteries as per the relevant BIS standards & MNRE specification can be used.

Storage batteries should conform IEC 61427/IS1651/IS13369 as per specifications.

The batteries shall use 2V and battery capacity is to be designed at C/10 rate with end cell cut off voltage of 1.85 V per cell.

Battery terminal shall be provided with covers.

Batteries shall be provided with micro porous vent plugs with floats.

Charging instructions shall be provided along with the batteries.

Suitable carrying handle shall be provided.

A suitable battery rack with interconnections & end connector shall be provided to suitably house the batteries in the bank. The features and dimensions of the battery rack shall be provided along with the bid document.

The batteries shall be suitable for recharging by means of solar modules via incremental/open circuit regulators.

Bidder shall mention the design cycle life of batteries at 80%, 10% and 20% depth of discharge at 27deg.C.

The batteries shall be designed for operating in ambient temperature of site in the state of Maharashtra.

The self discharge of batteries shall be less than 3 % per month at 20 deg. C and less than 6% per month at 30deg.C

The charge efficiency shall be more than 90% up to 70% state of charge.

The topping up frequency shall be 12-18 months.

The batteries shall consist of individual cells, which can be carried separately with ease while transporting.

Offered batteries shall comply to the following:



10%ofDOD:7200cycles

50%ofDOD:3000cycles

80%ofDOD:1200cycles

The Battery Bank shall be designed to provide 1 day autonomy. Bidder to provide battery sizing details along with their offer. The distance between two batteries may be kept 6 inches & vice versa.

There will be battery bank comprising of capacity as per follows:-

Capacity	Battery Bank	
	V	Ah
9	48	1150
	96	600

The battery protection panel shall be made of CRCA sheet having two incoming and two outgoing terminals. There shall be 2 Nos. HRC fuses of suitable rating with fuseholder/base as required. 2 poles MCB/MCCB can also be used for isolation purpose in stead off uses, if required.

Container	Poly propylene Co-polymer/hard rubbers with carrying handle.
Cover	Protective cover of polypropylenes against dirt & possible short circuit.
Terminals	Made of lead alloys suitable for bolted connection. The terminals should be greased with petroleum gel.
Electrolyte	Battery grade Sulphuric acid
Self Discharge	Less than 3% per month at 30 degree C
Life expectancy	1500 cycle duty at 27 degree C at 80% depth of discharge 3000 cycle duty at 50% discharge.
Voltage	2 Volt
Approval	Batteries shall have to be approved by ERTL or CPRI or SEC or any MNRE approved test centres

Service Life	Should perform satisfactory for a minimum period of 5year under operating conditions as mentioned.
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Each battery bank will contain suitable wooden rack, hydrometer, thermometer, cell tester and connecting leads etc.

### 3. BALANCE OF SYSTEM (BoS) ITEMS/ COMPONENTS:

#### Details of Power Conditioning Units:

- a.
- b. **General:**

As SPV array produce direct current electricity, it is necessary to convert this direct current into alternating current and adjust the voltage levels before power in g equipment designed for nominal mains AC supply. 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" OR simply PCU. In addition, the PCU shall also house MPPT (Maximum Power Point Tracker), an interface between Solar PV array & the Inverter, to maximize Solar PV array energy input into the System. PCU should conform IEC61683, IEC60068 as per specifications.

PCU refers to combination of charge controller, inverter and AC charger and shall be supplied as integrated unit or separate units.

Power Conditioning Unit (Solar Charge Controller + Inverter)	
Switching device	MOSFET/IGBT
Type	MPPT based PWM charge to charge 96V battery bank
Input voltage from PV array	96 VDC for 9kWp unit. (The voltage variation shall be as per change in array output)
Protections	Short circuit protection Input under voltage / Deep discharge of battery Input surge voltage protection Over current

	<p>Battery reverse polarity protection</p> <p>Solar array reverse blocking diode(provided in array junction box)</p> <p>DC rated fuse at input and AC rated fuse at output with suitable contactor/solid-state switches for safe start-up &amp; shut down of system</p> <p>Load surge current</p> <p>Over temperature</p> <p>Under / Over output voltage</p> <p>Under/Over frequency</p> <p>Automatic/manual isolation at input &amp; output</p> <p>Suitable protection for solid-state switching devices</p>
Di electric strength	1.1 kV between input/output and ground with EMI protections removed
Cooling	Solar natural and Force daircooling with temperature sensitive fan operation
Ambient operation (max)	50°C
Relative humidity	95%maximum
Assembly & mounting	As per normal industry practice
Finish	Epoxy powder coating
Cable entry	From rear 200 mm above ground level
Load test at factory	Minimum 6 hours at full load
Features	<p>Stand- alone and hybrid mode of operation.</p> <p>High quality with high efficiency and reliability</p> <p>Micro process or based intelligent controller</p>

	<p>Self monitoring capability.</p> <p>Integral design with MPPT solar charge controller and inverter</p> <p>Highly reliable &amp; efficient solid- state switching devices</p> <p>Rated for continuous operation at full load</p> <p>High over-load capability of 200% surge for 10 seconds</p> <p>Inverter output powerfactorof0.8lag</p> <p>Automatic re-start facility after over load triggered shutdown</p>
Efficiency	90%atratedloadandnormaloperatingconditions85%(min)at25%loadandnominal input voltage with UPF load
%THD	Sine-wave output with 3% THD at full load UPF and nominal input voltage
Output voltage	415(+12.5-20%)VAC
Output frequency	50Hz±0.5Hz
%Regulation	5% against input voltage and load variation
Indications	As many as possible with relevance
AC charger input	240 VAC,50Hz from AC mains grid
Enclosure	IP22 (For indoor application)
Weight / Dimension	The details of the inverter will be provided in the specification/user manual
Battery type	Tubular lead acid/VRLAGEL type

**c. Remote Monitoring Facilities:**

Provision for Online as well as Offline remote monitoring of the installed power plants must be made in the controllers or the inverters through an integral as well as externally fitted arrangement. It should be possible to ascertain the daily power generated by the SPV power plant, Number of days the plant was under operation and breakdown /repairs.

There should be the provision for auto generated email of monthly energy generation (from SPV power plant) in prescribed format with consultation of MEDA.

**d. Maximum Power Point Tracker (MPPT)**

Maximum power point tracker shall be integrated into the PCU to maximize energy drawn from the Solar PV array. The MPPT should be microprocessor /micro-controller based to minimize power losses. The details of working mechanism of MPPT shall be mentioned.

The efficiency of the Charge controller (MPPT based with data logger) shall not be less than 94% and shall be suitably designed to meet array capacity.

MPPT must conform IEC 62093, IEC 60068 as per specifications.

**e. Inverter**

Inverters shall be of very high quality having high efficiency and shall be completely compatible with the charge controller and distribution panel.

Inverter should conform IEC61683, IEC60068 as per specifications.

The inverter shall be designed for continuous, reliable power supply as per specifications. The inverter shall have high conversion efficiency from 25 percent load to the full rated load. The efficiency of the inverter shall be more than 90% at full load and more than 88% at partial load (50%-75%). The supplier shall specify the conversion efficiency in the offer.

The inverter shall be designed for extreme temperatures.

The Inverter shall have internal protection arrangement against any sustained fault in the feeder.

The dimension, weight, foundation details etc. of the inverter shall be clearly indicated in the detailed technical specification.

Each solid-state electronic device shall have to be protected to ensure long life of the inverter as well as smooth functioning of the inverter.

Supplier shall indicate tripping voltage & start up voltage for the inverters & this should be perfectly matched with there commendation of battery manufacturers.

The PCU shall be mounted on a suitable reinforced concrete pad inside control room not susceptible to inundation by water. All cable entry to and from the PCU shall be fully sheathed to prevent access of rodents, termites or other insects into the PCU from bottom/top of the PCU inform of a detachable gland plate.

For the Monitoring of Unit generated provision of Ah meters at input side shall be accomplished with Energy meter and voltmeters at suitable place and included in the technical specification clearly.

Provision for the Equalizing Charging of battery periodically shall be made and state clearly in the technical details.

The bidder shall furnish details of proper operation, maintenance and trouble shooting details to MEDA.

The bidder shall intimate MEDA prior to dispatch of the inverter for inspection. Shop tests on the inverter shall be conducted in the presence of the authorized representative of MEDA in order to verify the capacity and proper working of all control and protection arrangement.

The inverter will be highly efficient. The inverter should conform IEC 61683/IEC 60068 and should be based on PWM technology and using IGBT. Inverters would display its own parameters and also the parameters of battery bank connected to the inverter. The inverter's capacity should be minimum 9KVA and 12 KVA for 9KW and 12 KW SPV power plants. The inverters should be designed to be completely compatible with the charge controllers and distribution panels and are of integrated design.

Salient features of the Inverters shall be as follows:

Nominal Capacity	9KV Aminimum (for9kWpcapacity) 12 KVA minimum (for 12 kwp capacity)
Input/Voltage	96VDCNominal(for 9kWpcapacity) 120VDCNominal(for 12kWpcapacity)  The voltage variation shall be as per change in array output.

Regulation	From minimum to maximum voltage 1%
Output frequency	50Hz+/-0.5Hz
Overload Capacity	200%for 30 Second.
Efficiency	80% at 50% of load and More than 92% at full load 0.8 PF
Short Circuit Protection	Circuit Breaker and Electronics protection against sustained fault.
Low Battery Voltage	Automatic Shut Down
Total Harmonic Distortion	Less than 3%
Over Voltage	Automatic Shut Down
AC over Current/Load Protection	Automatic Shut Down
Protection	Over Voltage both at Input & Output Over Current both at Input & Output Over Frequency Surge voltage inducted at output due to external source.
Protection Degree	IP65
Instrumentation & Indication	Input & Output voltage, Input & Output Current, Frequency, Power output, different status of inverter, kind of fault by audio signal.

## **MAIN FEATURES & OPERATING MODE:**

- i. The PCU shall operate on hybrid mode.
- ii. In case of grid failure: Stored power from batteries shall be used to feed the dedicated load less than 20kW.
- iii. Grid power shall be the last priority to feed the load. During such time, the PCU shall feed the load directly through grid and shall also charge the batteries.

### **Load Side Monitoring:**

(Meter 1 M-1) Dual Source RS 485 complied Energy meter should be provided in Solar AC distribution board to remotely monitor the Solar Energy Supplied to load and or Exported to Grid.

(Meter2M-2) Bidirectional Energy Meter so there should be provision to monitor Energy supplied to load from grid in absence of solar Energy

## **f. Junction Boxes**

The junction boxes shall be dust, vermin and waterproof and made of FRP /Thermo Plastic. The terminals shall be connected to copper bus bar arrangement of proper sizes. The junction boxes shall have suitable cable entry points fitted with cable glands of appropriate sizes for both incoming and outgoing cables. Suitable markings shall be provided on the bus bar for easy identification and cable ferrules shall be fitted at the cable termination points for identification. Each main junction box shall be fitted with appropriate rating blocking diode. The junction boxes shall be of reputed make and should be as per IP 65 (for outdoor), IP 21(for indoor)& as per IEC62208.

The junction boxes shall have suitable arrangement for the Following:

Combine groups of modules into independent charging sub-arrays that shall be wired to the controller.

Provide arrangement for disconnection for each of the groups.



Provide a test point for each sub-group for quick fault location.

To provide group array isolation.

The rating of the JB's shall be suitable with adequate safety factor to inter connect the Solar PV array.

**g. Charge Controller Unit:**

The Charge Controller shall be dual input type; however the input is fed from a SPV panel only for battery charging. An selector switch shall be provided for choosing between those modes. The charge controller shall be preferably PWM type employing IGBT switching elements.

Charge controller should conform IEC 62093 / IEC 60068 as per specification.

The charging sequence from SPV array or external AC source shall be as follows:

Salient features of the Charge Controller shall be as follows:

Switching elements IGBT

Type of Charger

PWM

Input:

From PV 9KWp, 96V/600Ah nominal DC from Solar PV array

12KWp, 120V/650 Ah nominal DC from Solar PV array

Output Voltage: Suitable for charging 96 V/600 Ah nominal battery bank from 9KWp SPV array. And 120V/650 Ah nominal battery bank from 12KWp SPV array

Protections: Short Circuit, Deep Discharge, Input Surge Voltage, Over Current(load), Battery Reverse Polarity, Solar array reverse polarity.

Indication: String 'ON', Main 'ON', Charging 'ON', 80% Charged, 100% Charged, Charger Overload, Battery On Trickle.

Battery disconnected / Fault Battery Reverse Polarity, Low Solar Power, System Fault and Charger over Temperature and Input Over/Under Voltage(for AC).

MIMIC Diagram: To indicate power flow and operation of the charge controller/ battery charger; shall have provision for visual indications of existing power input/output through MIMIC diagram.

Bidder may design Power Conditioning Unit (PCU), which consists of a solar charge controller & inverter as per design mentioned above. In addition, it should have a Grid Charger.

It provides the facility to charge the battery bank through Solar only. The PCU continuously monitors the state of Battery Voltage, Solar Power output and the loads. Due to sustained usage of power, when the Battery Voltage falls below a preset level, the PCU will automatically transfer the load to the grid power.

#### **h. Cables & Wirings:**

All cables shall be supplied conforming to IEC 60227/ IS 694 & IEC 60502/ IS1554. Voltage rating: 1,100VAC, 1,500VDC

For the DC cabling, Solar Cables, XLPE or XLPO insulated and sheathed, UV stabilised single core flexible copper cables shall be used. Multi-core cables shall not be used.

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

The DC cables from the SPV module array shall run through a UV stabilised PVC conduit pipe of adequate diameter with a minimum wall thickness of 1.5mm.

Cable and wires used for the inter connection of solar PV modules shall be provided with solar PV connectors (MC4) and couplers.

All cables and conduit pipes shall be clamped to the rooftop, walls and ceilings with thermo-plastic clamps at intervals not exceeding 50 cm. The minimum DC cable size shall be 4.0 mm<sup>2</sup> copper. The minimum AC cable size shall be 4.0 mm<sup>2</sup> copper. In three phase systems, the size of the neutral wire size shall be equal to the size of the phase wires. The following colour coding shall be used for cable wires:

- DC positive: red (the outer PVC sheath can be black with a red line marking)
- DC negative: black
- AC single phase: Phase: red; neutral :black

– AC three phase: Phases: red, yellow, blue; neutral: black

– Earth wires: green

Cables and conduits that have to pass through walls or ceilings shall be taken through a PVC pipe sleeve.

Cable conductors shall be terminated with tinned copper end - ferrules to prevent fraying and breaking of individual wire strands. The termination of the DC and AC cables at the Solar Grid Inverter shall be done as per instruction so the manufacturer, which in most cases will include the use of special connectors.

All wiring in the control room shall be carried out with minimum four sq. mm. PVC insulated copper conduct or in surface/recessed steel conduct in control room & solar hut. All wiring shall be done with an appropriate size Cu conductor as earth wire. All wirings whether it is indoors or outdoors are to be casing capping system. As and when required flexible pipe maybe used.

Buried underground cables shall be armoured. Unarmored buried under ground cables shall be enclosed with suitable conduits. Unless, otherwise, specified, all other inter connecting cables shall be armoured.

Conductor size of cables and wires shall be selected based on efficient design criteria such that the overall electrical energy loss in any section of cable or wire is shall be less than 2% under the designed operating conditions. Conductor size of less than 6sq.mm shall not be accepted.

Cable/wire connections shall be soldered, crimp-on type or split bolt type. Wire nut connections shall not be used.

All cables shall be adequately supported. Outside of the terminals/ panels /enclosures shall be protected by conduits. Cables shall be provided with dry type compression glands where vertheyenter junction boxes/panels/enclosures.

The wiring must be carried out in casing capping only.

**i. Distribution System:**

Single line diagram of the ACD is tribution line shall be attached along with general point wiring diagram of sample room with the Technical details.

Details of cable used for the distribution and transmission purpose along with the current carrying capacity and make shall be enclosed.

Supply installation of Energy meter from reputed company. The energy meter shall be tested by State Electricity Board (SEB) and sealed by SEB. Testing certificate shall be submitted.

**j. Earthing and lightning protection:**

Earthing is essential for the protection of the equipment & manpower. Two main grounds used in the power equipments are:

- System earth
- Equipment earth

System earth is earth which is used to ground one leg of the circuit. For example in AC circuits the Neutral is earthed while in DC supply + ve is earthed.

In case of equipment earth all the non-current carrying metal parts are bonded together and connected to earth to prevent shock to the man power & also the protection of the equipment in case of any accidental contact.

To prevent the damage due to lightning the one terminal of the lightning protection arrangement is also earthed. The provision for lightning & surge protection of the SPV power source is required to be made.

In case the SPV Array cannot be installed close to the equipment to be powered & a separate earth has been provided for SPV System, it shall be ensured that all the earths are bonded together to prevent the development of potential difference between any two earths.

Earth resistance shall not be more than 1 ohm. It shall be ensured that all the earths are bonded together to make them at the same potential.

The earthing conductor shall be rated for the maximum short circuit current. & shall be 1.56 times the short circuit current. The area of cross-section shall not be less than 1.6sq m min any case.

The array structure of the PV modules shall be grounded properly using adequate numbers of earthing pits. All metal casing/shielding of the plant shall be thoroughly grounded to ensure safety of the power plant.

The Earthing for array and distribution system & Power plant equipment shall be made with GI pipe, 4.5 m long 10 mm diameter including accessories and providing masonry enclosures with cast iron cover plate having locking arrangement, watering pipe using charcoal or coke and salt as required as per provisions of IS:3043. Necessary provision shall be made for bolted isolating joints of each Earthing pit for periodic checking of earth resistance.

Each array structure of the SPV yard shall be grounded properly. The array structures and the lightning conductors are to be connected to earth through 25mm X 5mm GI strip.

The inverters and battery charger and all equipment inside the control room and battery room to be connected to earth through 25 mm X 5mm tinned copper strip including supplying of material and soldering. As earth bus is provided inside the control room with 25mm X 5mm tinned copper strip.

In compliance to Rule 61 of Indian Electricity Rules, 2004 (as amended up to date), all non-current carrying metal parts shall be earthed with two separate and distinct earth continuity conductors to an efficient earth electrode.

Lightning: The SPV Power Plant shall be provided with lightning & over voltage protection. The main aim in this protection shall be to reduce the over voltage to a tolerable value before it reaches the PV or other sub system components. The source of over voltage can be lightning, at atmosphere disturbances etc.

Metal oxide varistors shall be provided inside the Array Junction Boxes. In addition, suitable MOV's also shall be provided in the Inverter to protect the inverter from over voltage.

**k. Lightning & Over Voltage Protection System:**

The SPV power plant should be provided with Lightning and over voltage protection. Connected with proper earth pits. The main aim of over voltage protection is to reduce the over voltage to a tolerable level before it reaches the

PV or other sub-system components. The source of over voltage can be lightning or other atmospheric disturbance.

The lightning Conductors shall be made of 25 mm diameter 1000 mm long GI spike as per provisions of IS 3070. Necessary concrete foundation for holding the lightning conduct or in position to be made after giving due consideration to maximum wind speed and maintenance requirement at site in future. The lightning conductor shall be earthed through 20 mm X 3 mm thick GI flat earth pits/earth bus made with 25mmX5mmGI flats.

#### **4. MAIN FEATURES & OPERATING MODE**

PCU should give preference to the solar power as the first input to load and extra energy produced by solar is used to charge the battery bank. The second preference is given to the battery. In the absence of both solar and battery the power from grid will be fed to the load.

The PCU always gives preference to the solar power and will use Grid power only when the solar power/battery charger is insufficient to meet the load requirement.

#### **5. MODULE MOUNTING STRUCTURE**

Hot dip galvanized iron mounting structures may be used for mounting the modules / panels / arrays. These mounting structures must be suitable to mount the SPV modules / panels / arrays on the roof top, on the ground or on the poles / masts, at an angle of tilt with the horizontal in accordance with the latitude of the place of installation.

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 (wind speed of 150 km/ hour). It may be ensured that the design has been certified by a recognized Lab/Institution in this regard.

The mounting structure steel shall be as per latest IS2062:1992 and galvanization of the mounting structure shall be in compliance of latest IS4759 with thickness of 80 microns as per IS 5905. All fasteners shall be of Stainless steel- SS304.

The foundation for Module Mounting structures shall be 1:2:4 PCC Construction. There shall be minimum necessary clearance between ground level and bottom edge of SPV modules.

#### **6. ORIENTATION AND TILT OF PV MODULE**

Modules alignment should be due south and tilt angle shall be 26 - 30 degrees with horizontal.

#### **7. DC DISTRIBUTION BOARD (DCDB)**

A DCDB shall be provided in between PCU and Solar Array. It shall have MCCB of Suitable rating for connection and disconnection of array section. It shall have meters for measuring Array voltage and Array current.

#### **8. AC DISTRIBUTION LINE**

The generated electricity from these Power Plants will be utilized for illumination of Streets/Indoor Lighting, Fans, Computers, Internet modem, Printer within allowable practice limit. Necessary electric cable / connection shall be supplied /made by the bidder for illumination of existing streetlights/indoor lights.

#### **9. OPERATION MANUAL**

An Operation, Instruction and Maintenance Manual, in English and the local language, should be provided with the Solar PV Power Plant and detail of Wiring and Connection Diagrams will also be provided with the manual.

#### **10. COMPREHENSIVE MAINTENANCE CONTRACT (CMC)**

- The complete Solar PV Power Plant must be guaranteed against any manufacturing/ design/ installation defects for a minimum period of 5 years.
- PV modules used in Solar PV Power Plant must be guaranteed for their output peak watt capacity, which should not be less than 90% at the end of 12 years and 80% at the end of 25 years.

- During the CMC period, MNRE / MEDA / users will have all the rights to crosscheck the performance of the Solar PV Power Plant. MEDA may carry out the frequent inspections of the Solar PV Power Plant installed and randomly pick up its components to get them tested at Govt. / MNRE approved any test centre. If during such tests any part is not found as per the specified technical parameters ,MEDA will take the necessary action. The decision of MEDA in this regard will be final and binding on the bidder.

### 11. TEST REPORTS

Test certificates from MNRE approved test centres only will be considered valid.

### 12. OTHER FEATURES

- The supplier must fulfil all the technical & other requirements as per provisions under JNNSM, MNRE, GoI.
- A strip containing the following details should be laminated inside the module to be clearly visible from the front side:
  - a. Name of the Manufacturer or distinctive Logo
  - b. Model or Type No.
  - c. Serial No.
  - d. Year of make.

Sr. No.	Particulars		Specifications
			9 kW SPV Plant
1	Solar PV Modules		
	a	Capacity	5000Wp/ 1200 Wp
	b	Make	Any MNRE approved OR IEC61215(revised)
	c	Module	250/275/300/330Wp OR Equivalent
	d	No.of SPV Modules	Depends on Module wattage



Sr. No.	Particulars	Specifications
		9 kW
2	Solar Charge Controller	As per the requirement
3	ModuleMountingStructure	As per the available places at site
4	Power Conditioning Unit  (As per design specification given in tender which includes charge controller, inverter & Grid charger. The out put power should be of 3 phase)	1No.
	Inverter	minimum 9KVA
5	Battery  No. of batteries depends on Ah of the Battery capacity (2 Volt battery must be used)	600Ah/96V and 650 Ah/ 120 V
6	Cabling with casing capping	As required at site
7	Transmission ,Distribution & point wiring	As required at site
8	Monitoring, Control & protection device	1Set
9	Metering at generation side	1No.  (at DC side of Inverter)
10	Metering at consumption side	1No.(Towards Load)
11	Spares	Set of required fuses, screws, & terminals etc as required.

Annexure- B  
Sample / Standard Format for PERFORMANCE BANK GUARANTEE

To,  
Agriculture Development Officer  
Zilla Parishad Ratnagiri

WHEREAS [name and address of Contractor]  
(hereinafter called "the Contractor") has undertaken, in pursuance of Work Order  
No. \_\_\_\_\_ Tender No. **No.RZP/Krush/C-4/ /2022** for  
works \_ \_\_\_\_\_, dated \_\_\_\_\_ 2022 to design, manufacture, supply, installation,  
testing and commissioning with five years comprehensive maintenance contract of **Off  
Grid Solar Photo Voltaic (SPV) Power Plant 01 kWp at Zilla Parishad, Primary School  
No. 1, Tembhe Installation of non-transmission connected solar power system (6  
hours back up) for buildings in Tal & Dist. Ratnagiri. Maharashtra.** (hereinafter  
referred to as the contract of works) and as described in the Bidding Data in Maharashtra  
State for works under single point responsibility "Turnkey Contracts" basis (hereinafter  
called "the Contract"); AND WHEREAS it has been stipulated by you in the said Contract  
that the Contractor shall furnish you with a Bank Guarantee by a recognized bank for the  
sum specified therein as security for compliance with his obligation in accordance with the  
Contract; AND WHEREAS we have agreed to give the Contractor such a Bank Guarantee;  
NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on  
behalf of the Contractor, up to a total of \_\_\_\_\_ [amount of Guarantee]  
\_\_\_\_\_ [in words], and we undertake to pay you, through our branch office at  
\_\_\_\_\_ upon your first written demand and without cavil or argument, any sum or  
sums within the limits of \_\_\_\_\_ [amount of Guarantee] as aforesaid  
without your needing to prove or to show grounds or reasons for your demand for the sum  
specified therein. We hereby waive the necessity of your demanding the said debt from the  
Contractor before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of  
the Contract or of the Works to be performed there under or of any of the Contract  
documents which may be made between you and the Contractor shall in any way release us  
from any liability under this guarantee, and we hereby waive notice of any such change,  
addition or modification.

This guarantee shall be valid until the date of completion of the defects liability period, 5  
yrs. From date of commissioning with a claim period of further one month

Yours truly,	
Signature and seal of the	
Guarantor:	
Name of Bank/Financial	
Institution:	
Address:	
Dat	

DECLARATION  
(On company's letter head)

To,  
Agriculture Development Officer  
Zilla Parishad Ratnagiri

Reference: tender no \_\_\_\_\_

Sir/Madam,

1. We have carefully read and understood all the terms and conditions of the tender and hereby convey our acceptance to the same.
2. The information / documents furnished along with our offer are true and authentic to the best of my knowledge and belief, We are well aware of the fact that furnishing of any false information/ fabricated document would lead to rejection of our tender at any stage besides liabilities towards prosecution under appropriate law.
3. We have apprised our self fully about the job to be done during the course of the period of agreement and also acknowledge bearing consequences to of non - performance or deficiencies in the services on our part.
4. We have no objection, if enquiries are made about the work listed by us.
5. We have not been barred or blacklisted by any Government Agency / Department / PSU or any such competent Government authority, organization where we have worked. Further, if any of the partners/directors of the organization /firm is blacklisted or having any criminal case against them, our bid shall not be considered. At any later point of time, if this information is found to be false, Agriculture Development Officer, Zilla Parishad Ratnagiri , may terminate the assigned contract immediately.
6. We have not been found guilty by a court of law in India for fraud, dishonesty or moral turpitude.
7. We agree that the decision of Agriculture Development Officer Z. P. Ratnagiri, Maharashtra Energy Development Agency in selection of Bidders will be final and binding to us.

For (Company Name)  
Name of signing authority / Designation / Place / Date

**DETAILS OF BANKER**

Sr.No	Particulars	
1	Name of Bank	
2	Name of Branch / IFSC Code	
3	Account Name	
4	Account No	
5	Type of Account	

For  
(Company Name)

Name of signing authority / Designation / Place / Date

**BIDDER'S INFORMATION**

Sr.NO	Particulars	
1	Name of firm	
2	Details Mailing Address of firm	
3	Firm Status (PSU / Incorporate / Ltd. / Pvt. Ltd. / LLP / Partnership / Proprietary)	
4	Contact Person Name & Designation	
5	Contact No.	
6	E-mail Address for correspondence	
7	Firm Website Address	
8	Firm Registration No / ROC Establish Year of firm	
9	PAN No	
10	GST No.	
11	Validity for MNRE Rating (Certificate)	
12	Turnover (in ₹ ) 2019-20, 2020-21 & 2021-22	
13	Company Profile (<100 words)	
14	Skilled manpower	
15	Experience in SPV Power Plant (<100 Word )	
16	Experience in other solar projects (<100 words)	
17	Solar related Product Range	

18	Experience in Guarantee, Maintenance & After Sales Services (Years)	
19	Accreditation / Special achievement, if any by Firm / Bidder	
20	List of ISI, ISO, Other cert.	

### **DETAILS FOR O & M TEAM**

Sr. No.	Particulars	
1	Name of Concern Authority for Operation & Maintenance / Operation Head for installed system	
2	Contact No.	
3	Email ID	
4	Detailed Address for correspondence (Local Branch office; Separate set-up for Operation & Maintenance, if any)	
5	Details & No. of Qualified & Experience Technical Expert	
6	Details & No. of Skilled labour	
7	Details & No. of Un-skilled labour	

**Successful bidder shall have to provide adequate man power & tools-tackles during entire period of CMC.**

**Also, successful bidder shall have adequate insurance, to protect entire system for the period up to the period for CMC.**

For  
(Company Name)

Name of signing authority / Designation / Place / Date ☐

**TURNOVER CERTIFICATE**  
**(On C.A.'s letter head)**

This is to certify that, the ..... (Name of Firm) ..... registered as / under  
..... having registered address .....  
..... and assess to income tax with Circle ....., ...  
(location) .... and holding IT PAN .....

Further, it is certified that, the sales / turnover of the above referred company for the last three years are as under.

Annual Turnover Data for last 3 Years (FY 2019-20, 2020-21, 2021-22)	
Year	Rupees in Lacs
<b>2019-20</b>	
<b>2020-21</b>	
<b>2021-22</b>	
Total	

We have verified the books of accounts, records and other relevant documents. This certificate has been issued on the basis of data / information produced before us and on the request of the client

For

(Name of C.A. Firm)

Seal

Name Signing authority (C.A.)

Place:

Date:

Note: Bidders to submit scanned copy of IT returns for last three financial years, supporting with summary of balance sheet / auditor's report, along with above



**LIST OF PROJECTS  
(Off grid Solar P V Power Generation Plants)**

<b>Sr.</b>	<b>Name of Project</b>	<b>Plant Capacity</b>	<b>Date for commissioning / No. Current Status of Project</b>

FOR

(Company Name)

Name of signing authority / Designation / Place / Date

Note: Bidders to submit self attested scanned copies of work / purchase orders supporting with above project list, this is necessary for to review qualifying criteria.

Format - H

SITE VISIT REPORT LETTER  
(To be submitted on letterhead of bidder)

Date:

To,  
Agriculture Development Officer  
Zilla Parishad Ratnagiri

Reference: - tender no. \_\_\_\_\_

Sub. : Site Visit Report for DESIGN, MANUFACTURE, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING WITH FIVE YEARS COMPREHENSIVE MAINTENANCE CONTRACT OF TOTAL **01 KWP** (DISTRIBUTED CAPACITY) **OFF GRID** SPV POWER PLANT AT DISTRICT RATNAGIRI, MAHARASHTRA.

Sir/Madam, This has reference to above referred tender of setting of SPV power plant (Net Meter). I / We hereby declare that we have visited site at at .....(site name)I / We made ourselves acquainted with site conditions, grid connectivity details, approach to site, requirement of Roof-top structure / land, availability of water, requirement of tender conditions etc. I / We verified all details required to execute the projects. I / We have no problems in undertaking the project at given site and complete same in the given time period. Thanking you Yours faithfully,  
Seal:

(Signature of Bidder)

Name of bidder's representative visited the site: .....

Designation: .....

Seal:

Signature by Authorised  
Person

Format - I  
**DETAILS OF OFFERED SYSTEM**

Sr.No	Particulars	capacity
		Quantity
		Make
1	Module Mounting Structure	
2	Solar PV modules	
3	Inverter with Maximum Power Point tracking (MPPT) Charge Controller with inbuilt data Monitoring & safety interlocks	
4	Array Junction Box	
5	DC Cables	
6	Distribution Boards / Panels	
7	AC Cables	
8	Lightening Arrestor	
9	Earthing Equipments	
10	Net Meter / Bidirectional Meter / Generation meter	
11	Fire Detection & Protection System / Fire Extinguishers Tools & Tackles required for installation,	
12	testing, operation & maintenance of entire SPV Systems	

*Note: Bidders to submit technical Brochure for offered P V Module & Inverter along with test certificates / reports compiling applicable Standards as per guidelines issued by MNRE & with details of Guaranty & Warranty. Sub -standard makes or indication of 'Equivalent make' shall strictly be avoided*