

**MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE**

Survey, Design, Manufacture, Supply, Transport, Installation, Testing and Commissioning of Off Grid Solar Photovoltaic Water Pumping Systems of 3, 5 & 7.5 HP DC submersible, including complete system warranty and its repair and maintenance for 5 Years under Mahakrishi Urja Abhiyan PM-KUSUM scheme Component-B in the state of Maharashtra

**MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE**



**(A Government of Maharashtra Institution)**

**Expression of Interest (EoI) For Additional Empanelment of Vendors**

For Survey, Design, Manufacture, Supply, Transport, Installation, Testing and Commissioning of Off Grid Solar Photovoltaic Water Pumping Systems of 3, 5 & 7.5 HP DC submersible, including complete system warranty, 5 years comprehensive insurance and its repair and maintenance for 5 Years under Mahakrishi Urja Abhiyan PM-KUSUM scheme Component-B in the state of Maharashtra.

EoI NO- REN/PUMP/KUSUM/2022-23/01

ISSUED BY

**MAHARASHTRA ENERGY DEVELOPMENT AGENCY**

Aundh Road, Opposite Spicer College,  
Near Commissionerate of Animal Husbandry,  
Aundh, Pune - 411007

Phone No: - 020-35000450

E-mail ID: - [gmsolar@mahaurja.com](mailto:gmsolar@mahaurja.com)

<https://mahatenders.gov.in>

## MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE

Survey, Design, Manufacture, Supply, Transport, Installation, Testing and Commissioning of Off Grid Solar Photovoltaic Water Pumping Systems of 3, 5 & 7.5 HP DC submersible, including complete system warranty and its repair and maintenance for 5 Years under Mahakrishi Urja Abhiyan PM-KUSUM scheme Component-B in the state of Maharashtra

Maharashtra Energy Development Agency (hereinafter called "MEDA"), invites EoI for empanelment of reputed/experienced vendors for Design, Manufacture, Supply, Transport, Installation, Testing and Commissioning of Off Grid Solar Photovoltaic Water Pumping Systems of 3, 5 & 7.5 HP DC submersible, including complete system warranty and its repair and maintenance for 5 Years and 5 years comprehensive insurance under Mahakrishi Urja Abhiyan PM-KUSUM scheme Component-B in the state of Maharashtra.

For implementation of above-mentioned work, the interested vendors should submit their EoI complete in all aspect on or before Last date of EoI Submission as mentioned.

The interested vendors shall submit EoI along with non-refundable processing fee, security deposit as applicable and techno-Commercial proposal complete in all respect as per the EoI information sheet. Techno-Commercial proposal will be opened as per the EoI information sheet in presence of authorised representatives who wish to be present. EoI proposals received without the prescribed processing fee will be rejected. In the event of any date indicated above is a declared Holiday, the next working day shall become operative for the respective purpose mentioned herein.

EoI document which include Eligibility criteria, "Technical Specifications", various conditions of contract, formats, etc. to be downloaded from mahatender portal of GoM: <https://mahatenders.gov.in>

Any amendment(s) / corrigendum / clarifications with respect to this EoI shall be uploaded on mahatender website only.

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**DETAILS OF EXPRESSION OF INTEREST**

EoI is invited for empanelment of vendors from interested vendors of off grid solar pumps for Design, Manufacture, Supply, Transport, Installation, Testing and Commissioning of Off Grid Solar Photovoltaic Water Pumping Systems of 3, 5 & 7.5 HP DC submersible, including complete system warranty and its repair and maintenance for 5 Years under the guidelines of "Implementation of Pradhan Mantri Kisan Urja Suraksha evam Utthan Mahabhiyan Scheme" MNRE, GoI.

<b>Sr. No.</b>	<b>Particulars</b>	<b>Place of installation</b>	<b>Proposed no. of Pumps</b>
1	Survey, Design, Manufacture, Supply, Transport, Installation, Testing and Commissioning of Off Grid Solar Photovoltaic Water Pumping Systems of 3, 5 & 7.5 HP DC submersible, including complete system warranty and its repair and maintenance for 5 Years and 5 years comprehensive insurance under Mahakrishi Urja Abhiyan PM-KUSUM scheme Component-B in the state of Maharashtra.	Anywhere in the state of Maharashtra	50000 Solar Pumps

The guidelines / directives may change by MEDA, as per changes / amendments in the guidelines / directives. All these guidelines and EoI are mandatory to be followed in all respect by vendors. All vendors are requested to read carefully guidelines issued by MNRE dated 22<sup>nd</sup> July, 2019 for said scheme. EoI floated by EESL for year 2020-21 and amendments issued thereafter.

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Survey, Design, Manufacture, Supply, Transport, Installation, Testing and Commissioning of Off Grid Solar Photovoltaic Water Pumping Systems of 3, 5 & 7.5 HP DC submersible, including complete system warranty and its repair and maintenance for 5 Years under Mahakrishi Urja Abhiyan PM-KUSUM scheme Component-B in the state of Maharashtra

**Submission of EoI**

Document Description	Survey, Design, Manufacture, Supply, Transport, Installation, Testing and Commissioning of Off Grid Solar Photovoltaic Water Pumping Systems of 3, 5 & 7.5 HP DC submersible, including complete system warranty and its repair and maintenance for 5 Years and 5 years comprehensive insurance under Mahakrishi Urja Abhiyan PM-KUSUM scheme Component-B in the state of Maharashtra.
EoI No.	REN/PUMP/KUSUM/2022-23/01
Broad Scope	The project cost of a Solar Pumps will include the survey cost, hardware i.e. PV modules, pump, support structures, charge controllers, cables etc. It will also include cost of transportation, installation, connectivity, civil works and operation and maintenance for five years along with Comprehensive Maintenance Contract. Scope also includes work related to portal synchronization / RMS synchronization with MEDA and MNRE etc.
Date & Time for submission of EoI	27/09/2022 ,11:00 Hrs to 17/10/2022 ,15:00 Hrs
Date & Time for Pre-bid Meeting	03/10/2022,14:00 Hrs (Pre-bid Meeting is Online / Offline. It will inform in corrigendum)
Date & Time of opening of EoI	18/10/2022, 11:00 Hrs
EoI processing fee (Rs.) (Non Refundable)	Rs.29,500/- (Rupees Twenty Nine Thousand Five hundred only) including 18% GST on <a href="https://mahatenders.gov.in">https://mahatenders.gov.in</a> only. Exempted for SME and start-up vendors.
Estimated Cost	Rs. 1173,23,00,000/- (In Words- Rupees One Thousand One Hundred seventy three Crore Twenty Three Lakhs Only)
Earnest Money Deposit (EMD)	Rs. 10,00,000/- (In Words- Rupees Ten Lakhs Only) EMD will return after submission of CPG. Exempted for SME and start-up vendors.
CPG	As per enclosed clause
Address for communication and Venue for EoI opening	General Manager (Solar) <b>MAHARASHTRA ENERGY DEVELOPMENT AGENCY</b> Aundh Road, Opposite Spicer College, Near Commissionerate of Animal Husbandry, Aundh, Pune - 411007 Phone No: - 020-35000450 E-mail ID: - <a href="mailto:gmsolar@mahaurja.com">gmsolar@mahaurja.com</a>

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If any technical difficulties arise while filling up e-tender, please contact at 24 x 7 Help Desk Number 0120-4001 002, 0120-4001 005, 0120-6277 787 at NIC. Email: [support-eproc@nic.in](mailto:support-eproc@nic.in)

Eligible EoI holders can upload the EoI through mahatender portal of GoM: <https://mahatenders.gov.in>

The proposed quantity of solar pumps is tentative; however it may decrease or increase. In this regards Director General, MEDA reserved the rights.

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### Disclaimer

Kindly Note:

1. This document is not transferable.
2. Though adequate care has been taken for preparation of this document, the EoI holder shall satisfy himself that the document is complete in all respects. Intimation of any discrepancy shall be given to this office immediately. If no intimation is received from any EoI holder within Five days from the date of issue of the EoI document, it shall be considered that EoI document is complete in all respects and has been received by the EoI holder.
3. The Director General, MEDA reserves the right to modify, amend or supplement this EoI document or rejects all or any of the EoI documents without assigning any reason whatsoever.
4. While the EoI has been prepared in good faith, neither MEDA nor their employees or advisors make any representation, warranty, express or implied or accept any responsibility or liability, whatsoever, in respect of any statements or omissions herein, or the accuracy, completeness or reliability of information, and shall incur no liability under any law, statute, rules or regulations as to the accuracy, reliability and completeness of this EoI document, even if any loss or damage is caused by any act or omission on their part.

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### **Preamble:**

This EoI is invited as compliance of the MNRE policies and guidelines issued by the Govt of India, GoM for promotion, propagation and development of renewable energy.

MNRE, GoI launched PM KUSUM Scheme on 08.02.19 & issued guidelines on 22nd July, 2019. MNRE approved 1.00 Lakh no of Standalone Solar Pumps to Maharashtra vide sanction dated 13th January, 2021 and Government of Maharashtra issued GR dated 12<sup>th</sup> May, 2021. As per MNRE email dated 10<sup>th</sup> December, 2021, name of the 15 vendors and rates of pumps for 2020-21 received. Accordingly, willingness given by 14 vendors to work and with due approval of Sukanu Samiti, GoM meeting held on 10<sup>th</sup> February, 2022, LoA issued to 14 vendors for installation of 50000 pumps. One vendor not submitted acceptance to LoA. Therefore, till date 13 vendors are already empanelled with MEDA under this scheme.

Empanelment is valid for the period of 1 year from date of empanelment or end of scheme. EoI to be invited for qualified Vendors for Design, Manufacture, Supply, Transport, Installation, Testing and Commissioning of Off Grid Solar Photovoltaic Water Pumping Systems of 3, 5 & 7.5 HP DC submersible as per technical specifications of MNRE and relevant IEC / BIS compliant at the feasible sites in the state.

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**Check list of documents to be submitted along with the EoI as mentioned below**

<b>Sr. No.</b>	<b>Particulars</b>	<b>Complied</b>	<b>Page-no</b>
1	EoI Fees Rs.29,500/- (Rupees Twenty-Nine Thousand Five hundred only) including 18% GST on <a href="https://mahatenders.gov.in">https://mahatenders.gov.in</a> only		
2	Forwarding letter duly signed and stamped by the EoI holder		
3	Undertaking duly signed and stamped by the EoI holder.		
4	Certificate of registration issued by govt. / semi govt. organization.		
5	Organizational profile containing the documents defining the constitution or legal status, employee education details, place of registration / branches, Solar pumps installed for last 3 years (as per Technical Eligibility Criteria Details)		
6	Copy of the PAN card of the EoI holder's firm		
7	Copy of the GST Certificate of the EoI holder's firm		
8	Copies of last 4 years Income Tax returns (F.Y. 2018-19, 2019-20, 2020-21, 2021-22)		
9	CA Certificate mentioning Average Annual Turnover (ATO) for any 3 years out of last 4 years (F.Y. 2018-19, 2019-20, 2020-21, 2021-22)		
10	Balance sheet of any 3 years out of last 4 years duly signed and stamped by a chartered accountant.		
11	Local registered office for total execution and service centre in the state of Maharashtra. If he does not have company office then he has to produce affidavit on Rs. 100/- stamp paper that		

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<b>Sr. No.</b>	<b>Particulars</b>	<b>Complied</b>	<b>Page-no</b>
	he will open office within 1 month of getting empanelment. His empanelment considered only after he opens his company office & submits requisite document to MEDA in this regard.		
12	Filled in EoI document duly signed and stamped at the bottom of each page.		

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**Forwarding Letter**

(To be submitted in the letter head of the EoI holder)

To  
Director General,  
Maharashtra Energy Development Agency (MEDA)  
Aundh Road, Opposite Spicer College,  
Near Commissionerate of Animal Husbandry,  
Aundh, Pune – 411007

**Subject: - Submission of EoI for MEDA Empanelment for Design, Manufacture, Supply, Transport, Installation, Testing and Commissioning of Off Grid Solar Photovoltaic Water Pumping Systems of 3, 5 & 7.5 HP DC submersible vide EoI No-----**

Sir,

I / we undersigned has studied the EoI carefully and accordingly submitted our offer for the supply / installation of Design, Manufacturing, Testing, Supply, Installation, Commissioning & 5 years Comprehensive Maintenance Contract for **Off Grid Solar Photovoltaic Water Pumping Systems** in conformity of the EoI.

I / we have read carefully MNRE guidelines of PM-KUSUM scheme dated 22<sup>nd</sup> July, 2019, EESL EoI document for F.Y. 2020-21 and its amendments.

I / We have also read the various provisions of the EoI and confirm that the same are acceptable to us including the provision of 5 years Comprehensive Maintenance Contract and comprehensive insurance which include theft, natural disaster, Fire etc. We further declare that any additional conditions, variations, deviations, if any, found in our EoI offer shall not be given effect to. We further understand that **any deficiency / illegibility in documents shall make our EoI liable for rejection.**

I/we submit our EoI understanding fully well that

(a) The EoI and other documents submitted along with the same will be subject to verification by appropriate authorities.

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- (b) MEDA reserves the right to accept or reject any application or the EoI process itself without assigning any reasons thereof and shall not be held liable for any such action.
- (c) All acts, rules, regulations, norms and conditions of Govt of India and Govt of Maharashtra shall be applicable during the process of EoI and during the period of execution of project including CMC period.
- (d) We hereby declare that we are not blacklisted / debarred by any govt. / semi govt. / state govt. / PSU etc.

We hereby declare that all the information and statements made in this proposal are complete, true and correct and also accept that any misinterpretation contained in it may lead to our disqualification.

We hereby declare that our EoI is made in good faith and the information contained is true and correct to the best of our knowledge and belief. If any information provided is found false our EoI shall be rejected and we will not raise any claim.

**Yours faithfully,**

**Signature of EoI holder**

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### INTRODUCTION, EOI DETAIL & INSTRUCTIONS TO THE EOI HOLDERS

#### ➤ INTRODUCTION :-

- Ministry of New and Renewable Energy (MNRE) launched PM-KUSUM scheme (Component-B) for promotion of Off Grid Solar Photovoltaic Water Pumping Systems and MEDA is the implementing agency for this scheme in the state of Maharashtra. The scheme aims to reduce the fossil fuel based electricity and make buildings self-sustainable from the point of electricity, to the extent possible. Also it helps farmer to do farming in day period.
- This EoI is for 50000 solar pumps in the state of Maharashtra envisage installation of Grid Solar Photovoltaic Water Pumping Systems in the farmers land as specified by MNRE, GoI. Cost of solar pumps as per rates finalized by MNRE for F.Y. 2020-21 are as follows:

Sr. No.	Pump Type	Cost (Rs.) (without GST)
1	3HP DC submersible	170301
2	5HP DC submersible	237035
3	7.5HP DC submersible	329000

GST will paid separately as applicable at the time of date of installation.

- Vendors have to accept above rates in order to empanel with MEDA. **Submit above rates in BoQ.**
- The interested Vendors, who are techno-commercially qualified, shall be empanelled with MEDA.
- Vendors and JV partners whose names were informed to MEDA by MNRE for State of Maharashtra for issuing LoA and Vendors and JV partners to whom MEDA has already issued LoA in phase – II (50000 pumps) are not eligible to participate in this EoI. Also, the vendors who have denied to work under PM-KUSUM scheme earlier are not eligible to participate within EoI. Therefore, they shall not apply to this EoI.
- The interested Vendors are advised to read carefully all instructions and conditions appearing in this document and understand them fully. All information and documents

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required as per the EoI document must be furnished. Failure to provide the information and / or documents as required may render the EoI technically unacceptable.

- The interested Vendors shall be deemed to have examined the EoI document, to have obtained his own information in all matters whatsoever that might affect carrying out the works in line with the scope of work specified elsewhere in the document at the offered rates and to have satisfied himself to the sufficiency of his EoI.
- The EoI holder shall be deemed to know the scope, nature and magnitude of the works and requirement of materials, equipment, tools and labour involved, wage structures and as to what all works, he has to complete in accordance with the EoI documents irrespective of any defects, omissions or errors that may be found in the EoI documents.

➤ **START UPS AND SMEs:**

- All SMEs notified as per GFR 2017 clause no. 1.10.4 and as notified below shall be exempted from payment of EoI Document Fee. For claiming this exemption, SME must, along with their offer, provide proof of their being registered as SME (indicating the terminal validity date of their registration) for the item EoIed, with any agency mentioned in the notification of Ministry of MSME, indicated below:
  - (a) District Industries Centers;
  - (b) Khadi and Village Industries Commission;
  - (c) Khadi and Village Industries Board;
  - (d) Coir Board;
  - (e) National Small Industries Corporation;
  - (f) Directorate of Handicraft and Handloom;
  - (g) Udyog Aadhar Memorandum issued by Ministry of SME; or
  - (h) Any other body specified by the Ministry of MSME.
- For claiming the above exemption for Start-ups, a valid certificate of Start-up recognized by 'Department of Industrial Policy & Promotion (DIPP)' along with Business eligibility

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certificate or any other document issued by Govt/Recognized institute is required in support of product/ service item being EoIed.

- **10% of total EoI quantity will be assigning to SME / start-up vendors.**
- Start-up means an entity, incorporated or registered in India:
  - i Not prior to seven years, however for Biotechnology Startups not prior to ten years,
  - ii With annual turnover not exceeding INR 25 crore in any preceding financial year, and
  - iii Working towards innovation, development or improvement of products or processes or services, or if it is a scalable business model with a high potential of employment generation or wealth creation
  - iv Provided that such entity is not formed by splitting up, or reconstruction, of a business already in existence. Provided also that an entity shall cease to be a Startup if its turnover for the previous financial years has exceeded INR 25 crore or it has completed 7 years and for biotechnology startups 10 years from the date of incorporation/ registration
  - v Note: For Start-up firms, Gazette Notifications dated: 17-Feb-2016, G.S.R. 180 (E), and subsequently issued notifications will be considered.
  - vi However, SME and start ups shall mandatorily comply technical requirements (test certificates, experience, turn over as applicable)

### ➤ **Contract Performance Guarantee (CPG)**

- Bidder shall submit a bank guarantee (BG) of 3% of the amount equivalent to the 10% of the value of total state- wise allocation or 100 nos. of SPWPS, whichever is lower, to MEDA with the validity of 1 year to be rolled over every year for the first five years. However, if total number of SPWPS is more than 10% of the value of total state-wise allocation or 100 nos. in the first list of consent of beneficiaries in bidder's favor, bidder shall submit another CPG equivalent to differential value of order as per NTP. In case of non-performance or failure in fulfillment of contractual obligation under the contract, will be liable to submit 10% CPG

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apart from other penal provision of the EoI. CPG shall be submitted within 15 days of issuance of Letter of Empanelment by MEDA.

- **Illustration 1:**

Bidder has to submit the CPG equivalent to the order value of 100 nos of SPWPS to MEDA (as 10% of state allocation i.e, 20000 is equal to 2000 which is higher than 100). After getting a list of beneficiaries, bidder submits consent of 1500 beneficiaries in his favor. In this case, bidder shall also submit a CPG of 3% of the amount equivalent to the 1400 (1500-100) nos. of SPWPS in addition to the previously submitted CPG equivalent to the order value of 100 nos of SPWPS to MEDA to get NTP.

In case, if consent of beneficiaries in bidder's favor is less than the value of submitted CPG, Implementing Agency shall return the original CPG within 15 days of receiving the new CPG equivalent to total awarded quantity to the bidder. However, such request for return of the CPG equivalent to unawarded capacity shall be considered only after 12 months of issuance of LoA.

- **Illustration 2:**

Bidder has submitted the CPG of 3% of the amount equivalent to the order value of 100 nos of SPWPS to MEDA. However, in 12 months, bidder can only get 50 no.s of consent of beneficiaries in his favor. In this case, bidder can claim the return of CPG equivalent to the un-awarded capacity i.e, 50 (100-50) after submitting the CPG equivalent to the 3% of the amount of awarded capacity i.e, 50 no.s of SPWPS.

- Any delay in submission of CPG shall be deemed as accruing of financial benefit to the supplier and MEDA may take necessary interest penalty recovery action from the payments due to the supplier for the period of delay. However, this provision does not bind MEDA in any way from proceeding against the supplier (including cancellation of the LOA, etc.) for non-compliance towards non-submission of the CPG.
- Bank guarantee shall be from any Nationalized Banks/other scheduled private banks. MEDA shall at his discretion have recourse to the said Bank Guarantee for the recovery of any or all

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amount due from the bidder in connection with the contract including of guarantee obligations. This shall include the recovery, if any, against the Penalties applicable during Repair and maintenance period as brought out under Liquidated Damages.

- In addition, during assessment of work progress of the empanelled vendors, if it is found that they are not able to complete the installations in given timelines, the MEDA reserves right to empanel other vendors who are techno commercially qualified for same cluster or other clusters subject to matching L1 price and fulfilment and this document.

➤ **ACCEPTANCE LETTER:**

Also vendors must submit acceptance letter (format enclosed).

➤ **INSTRUCTIONS TO EOI HOLDERS :-**

Intending Eoi holders are requested to carefully study the instructions contained hereunder before preparing their Eoi documents for submission.

- a) An Eoi holder shall submit a single offer- Eoi only.
- b) Eoi document fees
- c) Eoi must be submitted in English language only.
- d) Incomplete, telegraphic or conditional Eois shall not be accepted.
- e) Prices offered must be firm and fixed. No price variation / escalation shall be allowed during the validity of the Eoi.
- f) The Eoi holders must stamp and sign at the bottom of each page of the Eoi documents at the time of submission in token of unconditional acceptance of the departmental terms and conditions, technical specifications etc.
- g) Valid GST / E-filing submission document must be submitted along with the Eoi. All rules and circulars of Finance Department, Govt of Maharashtra issued from time to time will be applicable during project period from issue of Eoi to the completion of 5 years CMC period.
- h) Deviations in terms and conditions, Specification of material, Inspection clause etc. will not be accepted under any condition.
- i) If empanelled Vendors do not work properly, his name will be deleted from empanelment and appropriate action as per condition will be initiated.

## MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE

Survey, Design, Manufacture, Supply, Transport, Installation, Testing and Commissioning of Off Grid Solar Photovoltaic Water Pumping Systems of 3, 5 & 7.5 HP DC submersible, including complete system warranty and its repair and maintenance for 5 Years under Mahakrishi Urja Abhiyan PM-KUSUM Scheme Component-B in the state of Maharashtra

- j) The EoI holder shall submit copies of documents defining the constitution or legal status, place of registration and principle place of business of company or firm.
- k) Canvassing in any manner shall not be entertained and will be viewed seriously leading to rejection of the EoI.
- l) Certificate to the effect that the solar PV modules to be used are indigenous.
- m) Power of attorney to sign the agreement on behalf of EoI holders & partnership deed articles, if any, should be enclosed along with original EoI documents.
- n) **Consortium related conditions:** The bidder shall have the option to submit the proposal either alone or along with other partner companies. Prerequisites for bidder have been specified in qualifying requirement and other parts of the EoI document. The lead partner shall be the sole point of contact for all purposes of the Contract. The lead partner will have the prime and sole responsibility for the execution of the scope of work. Any information/clarification submitted to the lead partner by MEDA will mean that the same has been conveyed to all partners. However, the partner companies should not be involved in any major litigation that may have an impact of affecting or compromising the delivery of services as required under this contract. The bidder or any of the partner companies should not have been black-listed by any Central / State Government or Public Sector Undertakings. If at any stage of EoIing process or during the currency of the contract, any suppression / falsification of such information is brought to the knowledge, MEDA shall have the right to reject the proposal or terminate the contract, as the case may be, without any compensation to the EoIer & forfeiture of bid security/EMD/CPG.

➤ **ELIGIBILITY CRITERIA :-**

In order to be eligible to participate in the EoI, the EoI holder must fulfil the following eligibility criteria. Any discrepancy or deviation from the same shall make the EoI holder ineligible for participating in the EoI and such EoI shall be rejected.

- a) Bidders must have to submit valid certificate of registration issued by any Govt. organization. Copy to be submitted.

## MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE

Survey, Design, Manufacture, Supply, Transport, Installation, Testing and Commissioning of Off Grid Solar Photovoltaic Water Pumping Systems of 3, 5 & 7.5 HP DC submersible, including complete system warranty and its repair and maintenance for 5 Years under Mahakrishi Urja Abhiyan PM-KUSUM Scheme Component-B in the state of Maharashtra

- b) Bidders must have registered / branch office in Maharashtra with GST certificate. If he does not have office then he has to produce affidavit on Rs. 100/- stamp paper that he will open company office within 1 month of getting empanelment.
- c) **The Vendors must not have been debarred / blacklisted / defaulted by any Govt. Dept, agency, PSUs / institution / agencies / local self governing bodies.** A self declaration by an authorized person of the EoI holder's company / firm duly notarised is to be attached.
- d) Bidder must have to submit organization chart of the company clearly showing the details of technical personnel, installation, commissioning, operation and maintenance capability, training setup etc. Also bidder must submit the list of employee with their educational details. The bidder shall be an established agency having adequate experience in executing similar grid connected solar power projects on turn key basis in Maharashtra.
- e) Bidders must submit the evidence documents of experience.
- f) Short listing based on documents submitted by the firm along with the EoI, In proof of satisfying all the eligibility conditions given below:-

Subsequent evaluations of the competency and other technical merits of the product and also the financial capabilities during the presentations this will be carried out by a technical evaluations committee (TEC) of MEDA. The TEC will have right to reject any vendors without assigning any reason as reputation if it feels the technical competency as reputation of the company is inadequate. Only these firms who satisfy above will be selected for the evaluation process for further activity.

Vendors applied under SME / Start-up category to submit applicable valid registration certificate from competent govt. organization. The certificate should be valid till technical opening of bid.

### **g) Experience:-**

Bidder quoting from open category must have experience of supply, installation, testing, installation / commissioning and maintenance / after sale services in the field of **3000 solar pumps.**

## MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE

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Bidder quoting from SME category must have experience of supply, installation, testing, installation / commissioning and maintenance / after sale services in the field of **750 solar pumps**.

(Bidders must have to submit evidence document i.e. purchase order and project completion report with EoI document)

### ➤ **FINANCIAL ELIGIBILITY CRITERIA: -**

The EoI holder should submit CA certified balance sheet of any 3 financial years out of last 4 financial years. **The bidder quoting from open category should have an average annual turnover of Rs.70.95 Cr. and the bidder quoting from SME category should have an average annual turnover of Rs.17.78 Cr. for any 3 years out of the last 4 years i.e. 2018-19, 2019-20, 2020-21 and 2021-22. The bidder should be profitable in at least 2 years of the last 4 years i.e. 2018-19, 2019-20, 2020-21 and 2021-22.**

The bidder should attach duly authorized copy of Audited Annual Report / Balance Sheet for any 3 financial years out of the last 4 years i.e. 2018-19, 2019-20, 2020-21 and 2021-22.

### ➤ **Force Majeure**

Bidder shall not be considered in default if delay in delivery occurs due to causes beyond his control such as acts of God, natural calamities, civil wars, strikes, fire, frost, floods, riot. Only those causes which have duration of more than 7 days shall be considered cause of force / calendar majeure. A notification to this effect duly certified by local chamber of commerce / statutory authorities shall be given by the bidder to MEDA by registered / speed post letter.

In the event of delay due to such causes, the delivery schedule will be extended for a length of time equal to the period of force majeure or at the option of MEDA, the order may be cancelled. Such cancellation, would be without any liability whatsoever on the part of MEDA. In the event of such cancellation, the bidder shall refund any amount advanced or paid to the bidder by MEDA and deliver back any materials issued to him by the Purchaser and release facilities, if any provided by the Purchaser.

## MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE

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### ➤ **Technical Requirements and Testing**

Systems installed under this Programme should meet technical specification and construction standards as specified by BIS and MNRE from time to time as given in Technical Specification.

Non-compliance will be taken seriously to the extent of blacklisting of the vendor.

Only indigenously manufactured PV modules and Pumps should be used in the Programme.

'Made in India' to be mentioned on solar panels and pumps.

Interpretation of the Guidelines: In case of any ambiguity in interpretation of any of the provisions of these guidelines, the decision of the Ministry shall be final.

Review of Guidelines: The Guidelines would be reviewed by an Internal Review Committee Chaired by Secretary in MNRE and modifications therein would be incorporated by the Ministry.

Bidder has to submit test reports of all components to MEDA.

Bidder has to submit the test certificates for each pump category in which bidder gets empanelled based on MNRE technical specs 2019 along with the CPG. Bidder has to provide a declaration as per **Attachment-1**

Test certificate already available for a solar pumping system can be used for other installers provided the user obtains written consent from the owner of test certificate to use the same.

Further, in case of any change in the component of already tested solar pumping system the user shall get technical compatibility certificate for the changes component along with the consent from certificate owner.

### ➤ **Insurance**

The Goods supplied under the Contract shall be fully insured in Indian Rupees against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery. For delivery of goods at site, the insurance shall be obtained by the Contractor, for an amount not less than the Contract Price of the goods from "warehouse to warehouse" (final destinations) on "All Risks" basis including War risks and strikes.

## MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE

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### ➤ **General Terms and Conditions:**

Bidder shall be responsible for any damage occurred, if any, during the course of work. 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 IM-MOVABLE 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, MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA) OR ITS EMPLOYEES WILL NOT BE RESPONSIBLE FOR ANY SUCH INCIDENT".

### ➤ **Terms of Payment:**

#### **Stage I: - 90% of the value of month-wise nos. of SPWPS installed at site based on:**

- Submission of detailed work plan (Project Execution plan) with timeline for the lot supplied duly approved by MEDA's representative;
- Submission of evidence in hard copy regarding completion of installation of SPWPS in good condition at site, duly verified and acknowledged by vendor, MEDA and Farmer.
- All the relevant Warranty and quality (performance test reports) of the lot to be submitted.
- Signing of contract agreement between SIA and successful bidder.
- Submission of Contract Performance Guarantee (CPG) as per relevant CPG clause to MEDA
- Submission of original supply Invoices/Bills duly verified/certified by vendor.
- Submission of report supported with labelled photograph on completion of village community training, awareness/ sensitization, capacity building measures undertaken and development of entrepreneurship etc. in each village with relevant photographs
- Submission of Software Generated Installation report as per prescribed format by MEDA which shall include following but not limited to Consumer Details, Site Survey Details,

## MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE

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Asset Inspection and Mapping Details, Site Inspection Report with Photographs, Remote Monitoring System Parameters etc.

- Bidder needs to operate and do required data entries into the SWPS (Solar Water Pumping System) Platform provided by MEDA to generate required Reports
- Operation and Maintenance manual to be provided to each beneficiary
- Submission of handing over certificates of solar photovoltaic water pumping system signed by Farmer and duly certified by MEDA's representative;
- Performance report for 1 day after commissioning based on data received from remote monitoring system or data logger in cases, where internet services are not available
- An undertaking shall need to be submitted by the Contractor certifying that the civil work will withstand the wind speed of 150 km/hr in all weather conditions

### **Stage II: - Balance 10% i.e. on completion of one month from the date of completion certificate**

- MEDA has the right to seek any additional documents / information / certification it deems fit prior to the release of any payment relevant to the SPWPS.
- Payment will be made to the bidder within 30 Days after submission of Invoice complete in all respect i.e. with all the required documents and compliance of relevant terms & conditions of LOA duly accepted & certified by vendor and MEDA.
- If the invoice is incomplete in any respect or if there is any non-compliance with relevant Terms & Conditions of LOA, payment due date shall start from the date of submission of all necessary documents provided relevant terms & conditions of LOA have been fulfilled.
- RMS reports should be synchronized with MEDA and MNRE portal as per requirement and with MSEDCL portal for period of 5 years.
- Submission of performance bank guarantee of 3% of total work cost from any Nationalized / schedule Bank valid for period of 5 years. This BG can be for five years in 5 equal parts respectively valid for 1,2,3,4 and 5 years from the date of installation and the

**MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE**

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expired BG to be released every year. In case if "Bidder" does not provide service during the warranty period, BG will be forfeited, and "Bidder" may be blacklisted

**MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE**

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**UNDERTAKING BY THE EOI HOLDER**

I / we hereby undertake that

1. We have read and examined the notice inviting EoI and the EoI along with all its schedules, annexure etc.
2. The acceptance to the rates given by us is firm and final and are meant for execution of the allotted target within the time frame.
3. In case our EoI is incomplete in any respect or we violate any of the prescriptions given in the EoI for submission of the same MEDA shall, without prejudice to any other right or remedy, be at liberty to reject the EoI.
4. In case we fail to commence or complete the supply / installation as per the time schedules or fail to fulfil any of the terms and conditions given in the EoI MEDA shall, without prejudice to any other right or remedy, be at liberty to terminate the empanelment to us.
5. I / We hereby declare that I / We shall treat the EoI, specifications and other records connected with the supply / installation as secret / confidential and shall not communicate information derived there-from to any person other than a person to whom I / We have authorized to communicate the same or use the information in any manner prejudiced to the safety of MEDA / the State Govt.
6. I / We shall abide by all the laws prevailing at the time of the execution of the supply / installation and shall be responsible for making payments of all the taxes, duties, levies and other Govt. dues etc. to the appropriate Govt. departments.
7. We are not involved in any litigation that may have an impact of affecting or compromising the delivery of services as required under this EoI.
8. We are not blacklisted / defaulted in any manner by any Central / State Government / Public Sector Undertaking / Agencies of Local Self Governing Bodies in India.
9. In case any false documents submitted and found at any time in future, our firm shall be liable to be prosecuted against as per prevailing laws.

SIGNATURE AND SEAL OF EOIER

**MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE**

Survey, Design, Manufacture, Supply, Transport, Installation, Testing and Commissioning of Off Grid Solar Photovoltaic Water Pumping Systems of 3, 5 & 7.5 HP DC submersible, including complete system warranty and its repair and maintenance for 5 Years under Mahakrishi Urja Abhiyan PM-KUSUM Scheme Component-B in the state of Maharashtra

10. I/We shall be responsible for the payment of the respective taxes to the appropriate authorities and should I/we fail to do so, I/we hereby authorize MEDA to recover the taxes due from us and deposit the same with the appropriate authorities on their demand.

Signature of EoI holder with stamp & date

**MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE**

Survey, Design, Manufacture, Supply, Transport, Installation, Testing and Commissioning of Off Grid Solar Photovoltaic Water Pumping Systems of 3, 5 & 7.5 HP DC submersible, including complete system warranty and its repair and maintenance for 5 Years under Mahakrishi Urja Abhiyan PM-KUSUM scheme Component-B in the state of Maharashtra

**Letter of Authorization**

(to be submitted in the letter head of the EoI holder)

To  
Director General,  
Maharashtra Energy Development Agency (MEDA)  
Aundh Road, Opposite Spicer College,  
Near Commissionerate of Animal Husbandry,  
Aundh, Pune - 411007

**Subject: - Submission of EoI for empanelment of vendors for Design, Manufacture, Supply, Transport, Installation, Testing and Commissioning of Off Grid Solar Photovoltaic Water Pumping Systems of 3, 5 & 7.5 HP DC submersible, including complete system warranty and its repair and maintenance for 5 Years under Mahakrishi Urja Abhiyan PM-KUSUM scheme Component-B in the state of Maharashtra.**

Ref: EoI No. -----

Sir,

I / we hereby authorise Ms. / Mr. -----, Designation ----- of our company to sign all relevant documents on behalf of the company / firm in dealing with the above EoI.

She / He is also authorized to attend all meetings and submit technical and commercial information as may be required by MEDA in the course of processing of the EoI.

We further authorise Ms. / Mr. \_\_\_\_\_ designation ----- of our company to make technical presentation on behalf of the company.

Yours faithfully

Head of the organization  
Name of Organization

Signature of the authorise persons

Sr. No.	Name	Signature

Signature attestation

Name and designation of the attesting officer with stamp.

**MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE**

Survey, Design, Manufacture, Supply, Transport, Installation, Testing and Commissioning of Off Grid Solar Photovoltaic Water Pumping Systems of 3, 5 & 7.5 HP DC submersible, including complete system warranty and its repair and maintenance for 5 Years under Mahakrishi Urja Abhiyan PM-KUSUM scheme Component-B in the state of Maharashtra

**ACCEPTANCE LETTER**

**Undertaking for Lowest Rate (L1) on Company Letter Head**

Date:

To  
The Director General  
Maharashtra Energy Development Agency (MEDA),  
Aundh Road, Opposite Spicer College,  
Near Commissionerate of Animal Husbandry,  
Aundh, Pune - 411007

**Subject: - Lowest Rate (L1) Acceptance Letter for Design, Manufacture, Supply, Transport, Installation, Testing and Commissioning of Off Grid Solar Photovoltaic Water Pumping Systems of 3, 5 & 7.5 HP DC submersible, including complete system warranty and its repair and maintenance for 5 Years under Mahakrishi Urja Abhiyan PM-KUSUM scheme Component-B in the state of Maharashtra.**

Respected Sir,

With reference to above referred subject, we (Company Name-----) hereby confirm & agree that we accept the following solar pumps prices:

Pump Capacity	Price (excluding of GST) with normal controller
	Submersible (Water Filled) Pump
3HP DC	170301
5HP DC	237035
7.5HP DC	329000

**Note: GST will be paid as applicable and amendment from time to time received from MNRE & State govt.**

Thanking you,

Yours faithfully,

Company Seal

Place :-

Date :-

(Name-----)

Designation & Contact No.

## MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE

Survey, Design, Manufacture, Supply, Transport, Installation, Testing and Commissioning of Off Grid Solar Photovoltaic Water Pumping Systems of 3, 5 & 7.5 HP DC submersible, including complete system warranty and its repair and maintenance for 5 Years under Mahakrishi Urja Abhiyan PM-KUSUM scheme Component-B in the state of Maharashtra

### SCOPE OF THE WORK

- The Scope of Work of a bidder shall include to Design, Manufacture, Supply, Erection, Testing and Commissioning of Stand-alone Off Grid Solar Photovoltaic Water Pumping Systems of 3-7.5 HP including complete system warranty and its repair and maintenance for 5 Years under MNRE KUSUM scheme Component 'B': as per MNRE specifications and applicable BIS standards. This EoI is for Component-B of PM-KUSUM Scheme, therefore, bidder shall follow all provisions of the Scheme Guidelines as amended from time to time.
- **The scope of work covers:**
- **Supply and Manufacture**
- The selected vendor shall be responsible for design, supply, installation and commissioning of SPWPS along with 5 years of repair and maintenance. To ensure timely maintenance of SPWPS, apart from training a local person and making available necessary spare parts & tools in each district, the vendor shall have one authorized service center in each operational district and a help line(s) in English/Marathi where such SPWPS are installed.
- Each pump should be marked with Toll Free No. of successful bidder (Toll free no. shall be affix on controllers and shall be readable for 5 years.) operating in English/Marathi and specific pump numbers and the Pump No. must have been captured by Web based Application (as per instruction of SIA) at the time of installation at site. During the time of PDI of each component, test report of equipment's, warranty certificates and calibration certificates should be provided by the bidder. Also, bidder should submit module structure wind withstand capacity certificate from certified Architecture Engineer for wind speed of 150 Km/hour. Successful bidder has to submit the PDI request within one week from the date of clearance (site allocation).
- **Installation & Commissioning**
- Installation and commissioning solar photovoltaic water pumping systems of 3-7.5 HP shall be done by the successful bidder (s) as per the details provided by MEDA. The vendors shall co-ordinate with MEDA for repair and maintenance of SPWPS for 5 yrs.

## MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE

Survey, Design, Manufacture, Supply, Transport, Installation, Testing and Commissioning of Off Grid Solar Photovoltaic Water Pumping Systems of 3, 5 & 7.5 HP DC submersible, including complete system warranty and its repair and maintenance for 5 Years under Mahakrishi Urja Abhiyan PM-KUSUM scheme Component-B in the state of Maharashtra

- Empaneled firm have to submit monthly consent of beneficiaries in their favors to MEDA for which MEDA's will give Notice To Proceed and for this, empaneled firm shall complete the installation and Commissioning of SPWPS within 90 days of issuance of NTP for General Category States .
- Bidder should conduct site survey and provide Progress Report (on fortnight basis) as per the requirement of MEDA.
- Action plan should be submitting to MEDA including complete details of team, resources, service centers in each district within 30 days of acceptance of demand from MEDA.
- Intimation to be given to MEDA before one week of Pre-Dispatch inspection call and should submit complete warranty certificates of each lot at the time of inspection.
- Submission of installation reports as per the format given by MEDA on weekly basis.
- Submission of completion reports of each district to MEDA within one week of 100 % completion of work as per allocation in each district.
- Successful bidder should submit monthly and quarterly progress reports online to MEDA.
- Bidder shall comply with all applicable regulatory and statutory norms. Bidder has to obtain approval/NOC (where ever required) from appropriate Govt. authority for implementing the project in each selected village.
- Successful bidder should have finalized sub-bidders and purchase order (P.O.) on all materials such as Solar PV module, structures, Pump, Controller, etc. within 30 days from the date of notification of award of Contract and unpriced P. O. copies will be submitted to MEDA within 30days from date of issue of LOA. Successful bidder should commission minimum pumps/ quarter as defined in Scope of Work Clause B.2. Bidder has to obtain handing over certificates/ installation completion letters/certificates from respective village panchayats/ Local Govt. Bodies in parallel with installation.
- Each SPWPS is to be provided with a colored metallic sticker duly riveted displaying required details as provided by MEDA.
- Successful bidder should submit the Certificate (as per prescribed format-to be provided

## MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE

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by MEDA) and photographs of each SPWPS installed which must show complete installation setup with beneficiary, Pump number etc.

- Successful bidder has to ensure working of minimum 95% of total installed SPWPS at any point of time.

### ➤ **SUBMISSION OF EOI:-**

The EOI document should be submitted as detailed below:

The EOI prepared by the EOI holders shall be uploaded in 'Two parts Viz. Technical and Financial EOI comprising the following components. EOI shall electronically submit online in the E-EOI platform and the documents shall be scanned and submitted.

#### **Part I**

##### **Technical Proposal shall contain:**

EOI holder shall submit relevant certificates to demonstrate the financial, technical capabilities & eligibility criteria prescribed under this EOI Document. In this regard the EOI holder shall upload following minimum documents/ information for technical or financial evaluation.

- As per Check list of documents

The EOI holder is expected to examine all instructions, forms, terms and specifications in the EOI Documents. Failure to furnish all information required, by the EOI holder, documents or submission of a EOI not substantially responsive to the EOI documents in every respect or incomplete EOI document will be at the EOI holders risk and may result in rejection of its EOI.

#### **Part II**

##### **Financial EOI**

The EOI holder shall indicate on the Price Schedule the price of quote in the price schedule format, it proposes to supply under the Contract. Financial EOI shall contain:

- The EOI holder should quote the price as against total contract EOI estimate as shown in price schedule format.

## MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE

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- Installation, testing, commissioning charges includes "FOR" destination prices inclusive of packing, forwarding, freight, inland transportation, insurance, loading, unloading, supply, distribution, collection, testing inspection and any/ all charges incidental for successful design, supply, Installation, commissioning and comprehensive maintenance for five years of Solar pumps.
- Prices shall be quoted in Indian Rupees only.
- In no circumstances, escalation in the prices will be entertained.
- The interested EoI holder shall note that, the project cost of a solar pumps will include the hardware i.e. PV modules, pump set, support structures, charge controllers, cables etc. It will also include cost of transportation, installation, commissioning, connectivity, civil works, application fee, taxes, insurance and operation and maintenance for five years along with Comprehensive Maintenance Contract.
- Financial EoI uploaded with an adjustable price quotation will be treated as non responsive and will be rejected.
- Any EoI not in accordance with above clauses of this Section will be rejected.

**MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE**

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**Acceptance / Rejection of the EoI documents:**

Director General, MEDA reserves the right to reject or accept any EoI or EoI process at any time prior to award of contract, without having prejudice of incurring any liability to the affected EoI holders or any obligation to inform the EoI holders.

I / we have carefully read & understood the above terms & conditions of the EoI.

Signature of EoI holder with Seal

**MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE**

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**TECHNICAL ELIGIBILITY CRITERIA DETAILS**

**(To be submitted on the letterhead of Applicant)**

Sr. No.	Name of Project	Name of Employer/ Client	Capacity of pump	Value of work	Date of Award	Date of Completion	Financial Year of Completion	Contract Duration	Description of work	Reference of Page no.*
1										
2										
3										

Signature and stamp (on each page) of Authorized Signatory

**MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE**

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**Attachment-1**

Ref. EoI No.: \_\_\_\_\_

**DECLARATION FOR SUBMITTING THE TEST CERTIFICATE AS PER MNRE TECHNICAL SPECIFICATIONS FOR SOLAR WATER PUMPSETS**

From:

M/s \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Sub: Declaration for the test certificate as per MNRE technical specifications for solar water pump sets**

We are agreeing to accept that the test certificates are to be submitted to the Implementing Agency, reports as per MNRE technical specifications and testing procedures, will be submitted by us within 30 days of issuance of Letter of Empanelment by Implementing Agency. In failure of which our empanelment will stand cancelled, without any prior intimation.

These certificates shall be submitted either in original form or attested copy by the issuing test lab.

Name of Authorized Signatory

Signature of supplier with stamp

**Technical Specifications**

**SOLAR PHOTOVOLTAIC WATER PUMPING SYSTEMS**

**1. SCOPE**

These specification covers design qualifications and performance specifications for Centrifugal Solar Photo Voltaic (SPV) Water Pumping Systems to be installed on a suitable bore-well, open well, water reservoir, water stream, etc., and specifies the minimum standards to be followed under New Scheme for Farmers launched by Government of India on 8.3.2019.

**2. TERMINOLOGY**

In addition to the terminology specified in 3 of IS 5120 and IEC 62253, the following shall also apply.

**2.1 Static Water Depth** — It is the depth of water level below the ground level when the pump is not in operation.

**2.2 Draw-Down** — It is the elevation difference between the depth of static water level and the consistent standing water level in tube well during operation of pump set.

**2.3 Submergence** — It is the minimum height of water level after drawdown above the pump suction casing.

**2.4 Manometric Suction Lift** — Manometric suction lift is the vacuum gauge/suction manometer reading in meter of water column when pump operates at suction lift.

**2.5 Static Suction Lift** — Static suction lift/head is the vertical distance between pump water level and center of pump inlet.

**2.6 Daily Water Output** — It is the total water output on a clear sunny day with three times tracking SPV panel, under the “Average Daily Solar Radiation” condition of 7.15 KWh / m<sup>2</sup> on the

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surface of SPV array (i.e. coplanar with the SPV Modules).

**2.7 Wire to Water Efficiency** — It is the combined system efficiency of SPV Converter/Controller with Inbuilt MPPT mechanism, Pump set and piping.

**2.8 SPV Controller** — Pump Controller converts the DC voltage of the SPV array into a suitable DC, single or multi-phase power and may also include equipment for MPPT, remote monitoring, and protection devices.

**2.9 Maximum Power Point Tracker (MPPT)** — MPPT is an algorithm that is included in the pump controller used for extracting maximum available power from SPV array under a given condition. The voltage at which SPV array can produce maximum power is called 'maximum power point' voltage (or peak power voltage).

### 3. CONSTRUCTIONAL FEATURES

#### 3.1 General

3.1.1 SPV Water Pumping System set uses the irradiance available through SPV array. The SPV array produces DC power, which can be utilized to drive a DC pump set using pump controller.

**3.2** A SPV Water Pumping system typically consists of:

##### 3.2.1 Pump Set

Pump set may be of any one of the following types:

- i) Mono-set pump;
- ii) Open well submersible pump;
- iii) Submersible pump;

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### 3.2.2 Motor

The motor of the pump set may be of the following types:

- i) DC Motor [PMSM/BLDC/SRM (with brush or brushless)].

### 3.2.3 SPV Controller See 2.8

Note: Some controllers are inbuilt in the motors

3.2.4 Provision for remote monitoring for the pumps must be made in the pump controller through an integral arrangement having following basic functions:

- Controller must be assigned with a unique serial number and its live status must be observed remotely on online portal through login credentials.
- Live status must indicate whether controller is ON/ OFF
- The parameter i.e. the water output, water flow rate, in fault condition, array input voltage/ current, power and motor frequency should be logged at an interval of 10 minutes
- Controller must have a back up to store the data locally ( at least for 1 year)

### Specifications of Controller/Drive for Solar Water Pumping Systems

Sr. No.	Requirement	Specifications
1.	Controller Power Capacity to drive the Pump	Controller Power Capacity should match to Solar Panels Power Capacity, not Pump Capacity. Example: For <b>5HP</b> Project, As per MNRE Specs, Panels should be minimum <b>4800W</b> , Controller capacity also should be minimum <b>4800W</b> only.
2.	Point Tracking (MMPT)	Should track power only and not Voltage at Maximum power point

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3.	Enclosure	The Controller must have <b>IP65</b> protection or must be housed in a cabinet having at least <b>IP65</b> protection.
4.	Isolator Switch	Should be between Solar panels and controller
5.	GSM/GPRS	Controller shall be integrated with GSM/GPRS gateway with Geo Tagging. GSM/ GPRS Charges to be included in the Costing till the end of Warranty period of the Pump set

Provision for remote monitoring for the pumps must be made in the pump controller through an integral arrangement having following basic functions:

- Controller must be assigned with a unique serial number and its live status must be observed remotely on online portal through login credentials.
- Live status must indicate whether controller is ON/ OFF
- The parameter i.e. the water output, water flow rate, in fault condition, array input voltage/ current, power and motor frequency should be logged at an interval of 10 minutes
- Controller must have a back up to store the data locally ( at least for 1 year)

### **Requirements of Remote Monitoring System**

1. State Implementing Agency (SIA) will have a common **SWPS** (Solar Water Pumping System) Management platform for monitoring of operation and performance of SWPS installed under PM KUSUM Scheme.
2. Remote Monitoring System (RMS) of SWPS should have following minimum features or modules:
  - a. Solar System Performance: DC Voltage, DC current, AC output Current, Power, Drive frequency, Energy, etc.
  - b. Pump Performance: Running Hours, Water Discharge (Output), etc.
  - c. RMS Performance: %Device Connectivity, %Data Availability, etc.

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- d. Geo Location: Real time latitude and longitude should be captured with an accuracy of less than 10m horizontal. This is required to ensure that system is not moved from its original location.
- e. Events and Notifications: Faults related to Pump Operation, Solar generation, Controller/Drive faults like overload, dry run, short circuit, etc.
- f. Consumer Management: Name, Agriculture details, Service No. Contact Details, etc.
- g. Asset Management: Ratings, Serial Number, Make, Model Number of Pump, Panel and Controller, Geo Location, IMEI number (of communication module) and ICCID (of SIM).
- h. Complaint and Ticket Management

Complaint management system is a part of centralized monitoring software platform – State Level Solar Energy Management Platform to be operated and maintained by the **State implementing agency (SIA)**.

- i. Consumer Mobile Application: Generation, Running Hours, Water Discharge, Complaint logging, etc.

- 3. RMS provided by all bidder's should connect to State Level Solar Energy Data Management platform, which will have interface with National Level Solar Energy Data Management platform.

**As mentioned in above point, SIA will provide software as well as server infrastructure which can be SIA's own data center or NIC cloud platform or MEITY approved Tier-3 or higher Cloud platform owned by SIA. SIA will maintain the same. Access of the platform will be shared with Bidders as well as other State and National Level Stake holders.**

**Bidder's needs to provide one-time Application processing and Connectivity charges of Rs.800-1000 for each system.**

**All vendors should provide SIM card of suitable ISP having maximum Signal Strength in the respective location of SWPS and ensure connectivity as well as pushing of data to centralized platform as mentioned in specifications.**

- 4. Communication Architecture should be as per Annexure VII and as mentioned below.

- a. **Communication Connectivity:**

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- i. **Pump Controller Connectivity:** Communication between RMS and Pump Controller should be on UART/RS485 MODBUS RTU protocol to ensure interoperability irrespective of make and manufacturer
- ii. **Remote Connectivity:** RMS of SWPS should be using GSM/GPRS/2G/3G/4G cellular connectivity
- iii. **Local Connectivity:** Ethernet/Bluetooth/Wi-Fi connectivity to configure parameters, notifications, communication interval, set points etc. or to retrieve locally stored data
- iv. **Sensor Connectivity:** RMS should have provision for at least two Analog and Digital inputs with 0.1% accuracy to address the requirement of local sensors connectivity if required by SIA/Consumer for applications such as irradiation, flow meter for water discharge, moisture sensor for micro irrigation, etc.

**As mentioned in specifications, Analog and digital sensor inputs will be required for integration of flow meter for water discharge, moisture sensor for micro irrigation, level sensor for overhead tank water storage etc. Only provision for Analog and digital inputs with 0.1% accuracy of Full Scale Range is required. Sensors will not be in scope of bidder**

- v. RMS should have provision to give remote On/Off command to pump through farmer mobile app. In case, farmer do not have a smart phone, farmer shall be able to on-off pump thru SMS/missed call.

**To save ground water, provision for remote operation is required so that farmer can switch on and off remotely.**

### b. **Communication Modes:**

- i. Push Data on Event/Notification: such as pump on, pump off, protection operated, etc.
- ii. Push Data Periodically: important parameters of solar pump (as mentioned above) should be pushed to central server on configurable interval. Interval should be configurable for 60 sec or less.

**Default interval should be of 15 minutes. However, if required, it should be possible to configure the periodic interval in multiple of 1 minute starting from 1 minute and up to**

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**15 minutes. Further, in case of any abnormalities or event, RMS should push on event immediately.**

- iii. Command On Demand : It should be possible to send commands via GSM or GPRS to RMS either to control pump operations or to update configuration
- c. **Communication Protocol:** RMS should provide data on MQTT protocol to establish communication with thousands of systems.
- d. **Security:**
  - i. Communication between RMS and Server should be secured and encrypted using TLS/SSL/X.509 certificate etc.
  - ii. As a part of IoT protocol, Authentication and Authorization should be implemented using token/password mechanism
- e. **Message Format:** RMS should provide data in a JSON message format as required by respective SNA
- f. **Data Storage:** In case of unavailability of cellular network, RMS should store data locally and on availability of network it should push data to central Server. Local data storage should be possible for **one year** in case of unavailability of cellular network.

RMUs should have configuration update over the Air of multiple parameters such as IP, APN, Data logging Interval, Set Points etc. is essential. Software updating should be possible with 2G and even without the presence of SD card. Software updating process and/or failure to update software shouldn't disrupt pumping operations

### 3.3 Solar Photo Voltaic (SPV) Array

3.3.1 **SPV** arrays contains specified number of same capacity, type and specification modules connected in series or parallel to obtain the required voltage or current output. The SPV water pumping system should be operated with a PV array minimum capacity in the range of **900 Watts peak to 9000 Watts peak**, measured under Standard Test Conditions (STC). Sufficient

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number of modules in series and parallel could be used to obtain the required voltage or current output. The power output of individual PV modules used in the PV array, under STC, should be a minimum of 200 Watts peak, with adequate provision for measurement tolerances. Use of PV modules with higher power output is preferred.

3.3.2 Modules supplied with the SPV water pumping systems shall have certificate as per IS14286/IEC 61215 specifications or equivalent National or International/ Standards. STC performance data supplied with the modules shall not be more than one year old.

3.3.3 Modules must qualify to IS/IEC 61730 Part I and II for safety qualification testing.

3.3.4 The minimum module efficiency should be minimum 15 percent and fill factor shall be more than 70 percent.

3.3.5 Modules must qualify to IEC TS 62804-1:2015 for the detection of potential-induced degradation - Part 1: Crystalline silicon (Mandatory in case the SPV array voltage is more than 600 V DC)

3.3.6 In case the SPV water pumping systems are intended for use in coastal areas the solar modules must qualify to IEC TS 61701:2011 for salt mist corrosion test.

3.3.7 The name plate shall conform the IS 14286/IEC 61215

3.3.8 Module to Module wattage mismatch in the SPV array mismatch shall be within  $\pm 3$  percent.

3.3.9 Variation in overall SPV array wattage from the specified wattages shall be within zero percent to +10 percent.

### **3.4 Motor-Pump Set**

3.4.1 The SPV water pumping systems may use any of the following types of motor pump

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sets:

- a) Surface mounted motor-pump set
- b) Submersible motor-pump set
- c) Floating motor-pump set
- d) Any other type of motor pump set after approval from Ministry.

3.4.2 The "Motor-Pump Set" should have the following features:

- a) The mono block DC/centrifugal motor pump set with the impeller mounted directly on the motor shaft and with appropriate mechanical seals which ensures zero leakage.
- b) The suction and delivery head will depend on the site-specific condition of the field.
- c) Submersible pumps could also be used according to the dynamic head of the site at which the pump is to be used.

3.4.3 The pump and all external parts of motor used in submersible pump which are in contact with water, should be of stainless steel of grade 304 or higher as required. The motor-pump set should have at least 5 years warranty and therefore, it is essential that the construction of the motor and pump should be made using parts which have a much higher durability and do not need replacement or corrode for at least 5 years of operation after installation.

3.4.5 The suction/ delivery pipe (uPVC/HDPE), electric cables, floating assembly, civil work and other fittings required to install the Motor Pump set.

### 3.5 Module Mounting Structures and Tracking System

3.5.1 The PV modules should be mounted on metallic structures of adequate strength and appropriate design, which can withstand load of modules and high wind velocities up to 150 km per hour. The raw material used and process for manufacturing of module mounting structure including welding of joints should conform to applicable IS. The module mounting structure should be hot dip galvanized according to IS 4759. Zinc content in working area of the hot dip

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galvanizing bath should not be less than 99.5% by mass.

3.5.2 To enhance the performance of SPV water pumping systems arrangement for seasonal tilt angle adjustment and three times manual tracking in a day should be provided. In order to make structure rigid, the gap between Telescopic pattern supports should be minimal, further, for bearing of center load of whole structure only pins should be used instead of threaded bolts.

3.5.3 The general hardware for structure fitment should be either SS 304 or 8.8 grade. Modules should be locked with antitheft bolts of SS 304 Grade. Foundation should be as per the site condition, based on the properties of Soil. Foundation can be done either with the help of 'J Bolt' (refer IS 5624 for foundation hardware) or direct piling, it should be decided as per the site and relevant IS i.e. IS 6403 / 456 / 4091 / 875 should be referred for foundation design.

3.5.4 Details of Module Mounting Structure for different capacity of SPV pumps are attached at Annexure-I. These are indicative of minimum standards and an Implementing Agency may specify higher standards.

### 3.6 SPV Controller

3.6.1 Maximum Power Point Tracker (MPPT) shall be included to optimally use the power available from the SPV array and maximize the water discharge.

3.6.2 The SPV Controller must have IP (65) protection or shall be housed in a cabinet having at least IP (65) protection.

3.6.3 Adequate protections shall be provided in the SPV Controller to protect the solar powered pump set against the following:

- a) Dry running;
- b) Open circuit;
- c) Accidental output short circuit;

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- d) Under voltage;
- e) Reverse polarity;
- f) SPD to arrest high current surge; and
- g) Lightning arrestor.

3.6.4 A good reliable DC Circuit Breaker as per IS/IEC 60947-2 suitable for switching DC power ON and OFF shall be provided in the SPV Controller.

3.6.5 All cables used shall be as per IS 694. Suitable size of cable shall be used in sufficient length for inter-connection between the SPV array to SPV Controller and the SPV Controller to solar powered pump set. Selection of the cable shall be as per IS 14536.

3.6.6 Controller shall be integrated with GSM/GPRS Gateway with Geo tagging. GSM/ GPRS Charges to be included in the Costing till the end of Warranty period of the Pump set.

### **3.7 Earthing Arrangement**

3.7.1 Earthing of the motor shall be done as per IS 9283 in accordance with the relevant provisions of IS 3043. Separate earthing shall be provided for Controller, pump and SPV array.

3.7.2 For safety purpose, it shall be ensured during installation that the earthing is capable of taking care of leakage current.

3.7.3 In case of uPVC/HDPE pipes used as discharge pipe, a separate non-corrosive, low resistance conductor from motor earth terminal to control panel earth terminal shall be provided for earthing.

3.7.4 A lightning arrestor shall be provided with every SPV Water Pumping System. These Lightning arrestors should be grounded separately without any contact to structure assembly.

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### 3.8 Use of indigenous components

It will be mandatory to use indigenously manufactured solar modules with indigenous mono/multi crystalline silicon solar cells. Further, the motor-pump-set, controller and balance of system should also be manufactured indigenously. The vendor has to declare the list of imported components used in the solar water pumping system.

## 4. PERFORMANCE REQUIREMENTS

4.1 Under the "Average Daily Solar Radiation" condition of 7.15 KWh / sq.m. on the surface of PV array (i.e. coplanar with the PV Modules), the minimum water output from a Solar PV Water Pumping System at different "Total Dynamic Heads" should be as specified below :

### **For D.C. Motor Pump Set:**

- i) 110 liters of water per watt peak of PV array, from a Total Dynamic Head of 10 meter (Suction head, if applicable, maximum of 7 meter) and with the shut off head being at least 12 meter.
- ii) 55 liters of water per watt peak of PV array, from a Total Dynamic Head of 20 meter (Suction head, if applicable, up to a maximum of 7 meters) and with the shut off head being at least 25 meter.
- iii) 38 liters of water per watt peak of PV array, from a Total Dynamic Head of 30 meters and the shut off head being at least 45 meter.
- iv) 23 liters of water per watt peak of PV array, from a Total Dynamic Head of 50 meter and the shut off head being at least 70 meters.
- v) 15 liters of water per watt peak of PV array, from a Total Dynamic Head of 70 meters and the shut off head being at least 100 meters.
- vi) 10.5 liters of water per watt peak of PV array, from a Total Dynamic Head of 100 meters and the shut off head being at least 150 meters.

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The actual duration of pumping of water on a particular day and the quantity of water pumped could vary depending on the solar intensity, location, season, etc.

Indicative performance specifications for the Shallow and Deep well SPV Water Pumping Systems are given in the Annexure II.

### 5. TESTS FOR HYDRAULIC AND ELECTRICAL PERFORMANCE OF PUMPSET

5.1 The motor-pump set shall be tested independently for hydraulic and electrical performance as per the relevant IS specification including following test

- a) Constructional requirements/features
- b) General requirements
- c) Design features
- d) Insulation resistance test
- e) High voltage test
- f) Leakage current test

5.2 Testing of SPV Water Pumping Systems shall be done as per procedure specified by the MNRE.

### 6. GUARANTEE OF PERFORMANCE

6.1 The SPV Water Pumping Systems shall be guaranteed for their performance of the nominal volume rate of flow and the nominal head at the guaranteed duty point as specified in 7.1 under the "Average Daily Solar Radiation" condition of 7.15 KWh/m<sup>2</sup> on the surface of SPV array (i.e. coplanar with the Photo Voltaic (PV) Modules). The actual duration of pumping of water on a particular day and the quantity of water pumped could vary depending on the solar intensity, location, season, etc.

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6.2 Solar Photo Voltaic Water Pumping Systems shall be guaranteed by the manufacturer against the defects in material and workmanship under normal use and service for a period of at least 60 months from the date of commissioning.

6.3 Sufficient spares for trouble free operation during the Warrantee period should be made available as and when required.

### 7. MARKING AND PARAMETERS TO BE DECLARED BY THE MANUFACTURER

7.1 The motor pump-set and Controller used in SPV Water Pumping Systems shall be securely marked with the following parameters declared by the manufacturer:

#### 7.1.1 Motor Pump-set

- a) Manufacturer's name, logo or trade-mark;
- b) Model, size and SI No of pump-set;
- c) Motor Rating (kW / HP);
- d) Total head (m) at the guaranteed duty point;
- e) Capacity (LPD) at guaranteed head;
- f) Operating head range (m);
- g) Maximum Current (A);
- j) Voltage Range (V) and;
- k) Type - DC Pump set; &
- l) Photo Voltaic (PV) Array Rating in Watts peak ( $W_p$ )

#### 7.1.2 Controller

- a) Manufacturer's name, logo or trade-mark;
- b) Model Number;
- c) Serial Number;
- d) Voltage Range;

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- e) Power Range in kW for Controller; and
- f) Current rating (A)

### 8. OPERATION AND MAINTENANCE MANUAL

81 An Operation and Maintenance Manual, in English and the local language, should be provided with the solar PV pumping system. The Manual should have information about solar energy, photovoltaic, modules, DC motor pump set, tracking system, mounting structures, electronics and switches. It should also have clear instructions about mounting of PV module, DO's and DONT's and on regular maintenance and Trouble Shooting of the pumping system. Helpline number and Name and address of the Service Centre and contact number of authorized representative to be contacted in case of failure or complaint should also be provided. A warranty card for the modules and the motor pump set should also be provided to the beneficiary.

### 4. COMPREHENSIVE OPERATION AND MAINTENANCE

- i. The Contractor should provide 5 years comprehensive maintenance of the Solar Photovoltaic Water pumping system set, which shall include corrective maintenance as well as routine service visits during guarantee period.
- ii. AMC shall be in line with KUSUM guidelines and its amendment (if any). The report has to be maintained. Apart from the monitoring, regular periodical maintenance of system has to be done. The report has to be maintained in a prescribed table format in a register maintained at the site which should contain Month, Inspection Date, Action taken against the Defects found in the System and Remarks of the representative of households along with signatures of both service Engineer and the farmer/ beneficiary.
- iii. The deputed personnel shall be in a position to check and test all the equipments regularly, so that preventive actions, if any, could be taken well in advance to save any equipment from damage.
- iv. Normal and preventive maintenance of the Solar Photovoltaic Water pumping systems such

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as cleaning of module surface, tightening of all electrical connections, changing of tilt angle of module mounting structure, cleaning & greasing of motor pump sets, changing filters etc. are also the duties of the deputed personnel during maintenance visits.

During operation and maintenance period of the Solar Photovoltaic Water Pumping Systems, if there is any loss or damage of any component due to **miss management or miss handling** or due to any other reasons pertaining to the **deputed personnel by empaneled vendor**, whatsoever, the supplier shall be responsible for **immediate replacement or rectification**.

The damaged component may be repaired or replaced by new component.

The maintenance shall include replacement of any component irrespective of whether the defect was a **manufacturing defect or due to wear and tear**.

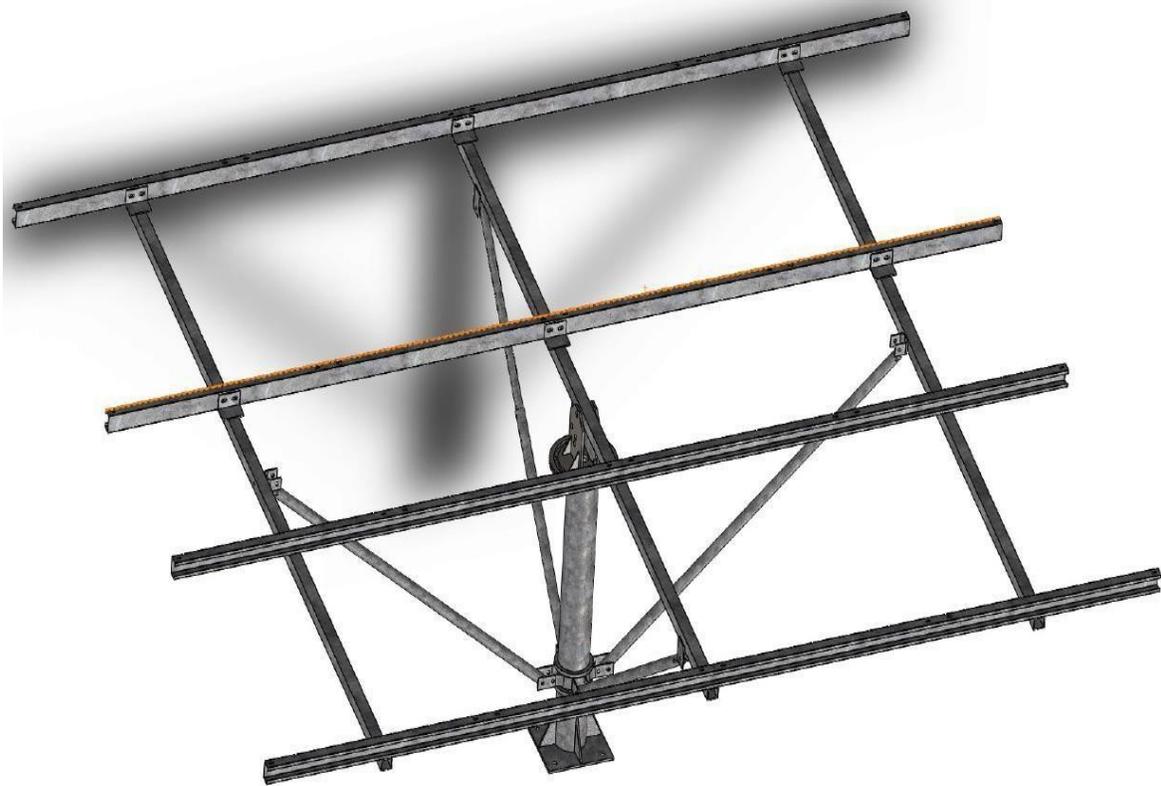
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**Annexure-A**

**Specifications for Dual Axis Manual  
Tracking Type**

**Module Mounting Structure (MMS) for Solar Water Pumping System**



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### Annexure-I

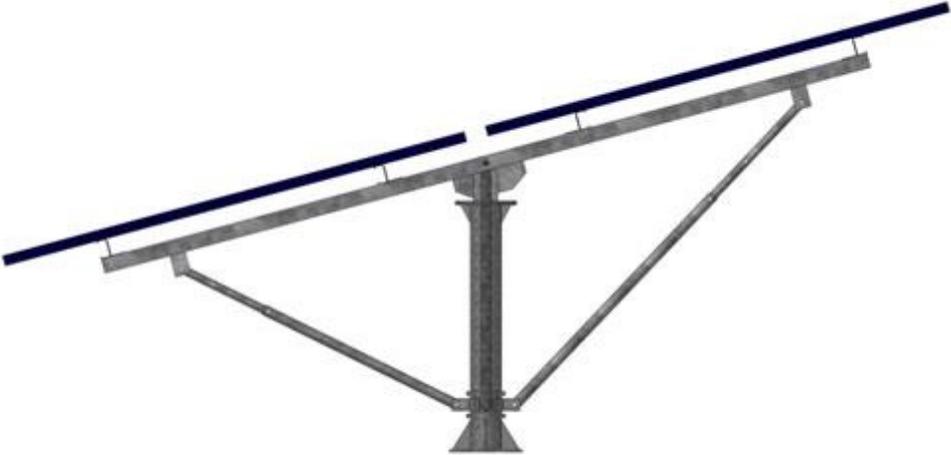
#### **Specifications for Dual Axis Manual Tracking Type Module Mounting Structure for 7.5 HP Solar Water Pumping System: -**

A set of minimum two module mounting structures of above type should be used for 7.5 HP solar water pumping system and maximum 8 panels are allowed to be mounted on one structure. The structure should comprise of following components essentially:-

1. Centre Shaft: - Centre shaft used in structure should be of minimum 139 OD with minimum thickness of 4 mm with base plate minimum 10 mm thickness if used and foundation hardware should be as per IS 5624, otherwise if system is without base plate, as per the site condition and also refer (As per IS 6403 / 456 / 4091 / 875) for foundation.
2. Rafters: - The Main and secondary rafter used in structure should be of either SHS & RHS pipe sections.
3. Purlin: - Mounting Purlins used in the structure should be made of Cold form steel section as per IS 1079 with minimum thickness of 2mm.
4. Provision for Seasonal Tilt: - In one structure at least four telescopic supports either round hollow sections or square hollow section to be provided to support the mounting structure.
5. Provision for Daily Tracking: - Provision for Daily tracking should be provided by the way of providing min. 8 mm thick metal sheet with precision cut grooves.
6. Module Locking System: - Modules should be locked with antitheft bolts of SS 304 Grade.
7. General Hardware for Structure Fitment: - Either SS 304 or 8.8 grade hardware should be used for fitment.
8. Foundation Design: - Foundation should be as per the site condition, based on the properties of Soil. Foundation can be done either with the help of 'J Bolt' (refer IS 5624 for foundation hardware) or direct piling, it should be decided as per the site and (As per IS 6403 / 456 / 4091 / 875) should be referred for foundation design.
9. Hot Dip Galvanizing: - All structure parts should be hot dip galvanized according to IS 4759.

**MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE**

Survey, Design, Manufacture, Supply, Transport, Installation, Testing and Commissioning of Off Grid Solar Photovoltaic Water Pumping Systems of 3, 5 & 7.5 HP DC submersible, including complete system warranty and its repair and maintenance for 5 Years under Mahakrishi Urja Abhiyan PM-KUSUM Scheme Component-B in the state of Maharashtra



**MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE**

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**Raw material test certificates to be submitted and Tests to be performed on Dual Axis Manual Tracking Type Module Mounting Structure for 7.5 HP Solar**

**Water Pumping System: -**

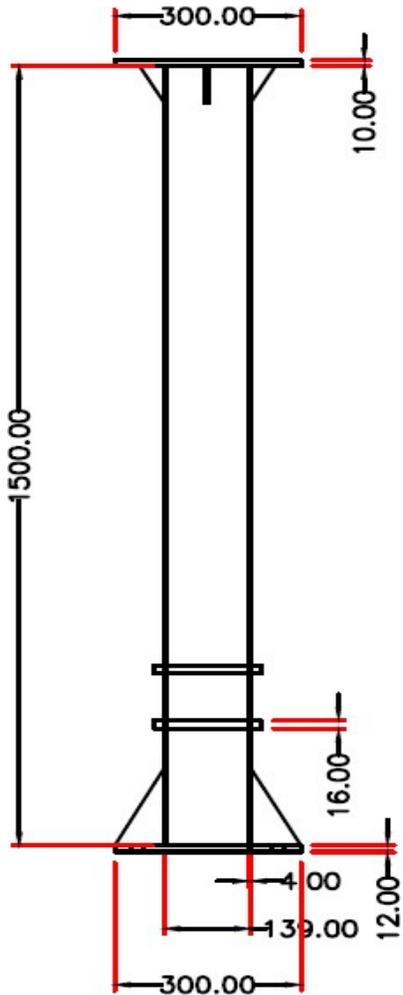
Raw material test certificates (MTC) of all types of raw material used in dual axis manual tracking type module mounting structure as per appropriate IS code should be submitted along with dispatch documents.

Tests to be performed on Dual Axis Manual Tracking Type Module Mounting Structure for 7.5 HP Solar Water Pumping System: -

1. For ascertaining proper welding of structure part following should be referred.
  - a. Weld wire grade should be of grade **(ER 70 S - 6)**
  - b. D.P. Test (Pin Hole / Crack) **(IS 822)**
2. For ascertaining hot dip galvanizing of fabricated structure following should be referred:-
  - a. Min coating required should be as per IS 4759 & EN 1461.
  - b. Testing of galvanized material.
    - i. Preece Test (CuSO<sub>4</sub> Dip Test) **(IS 2633)**
    - ii. Mass of Zinc **(IS 6745)**
    - iii. Adhesion Test **(IS 2629)**

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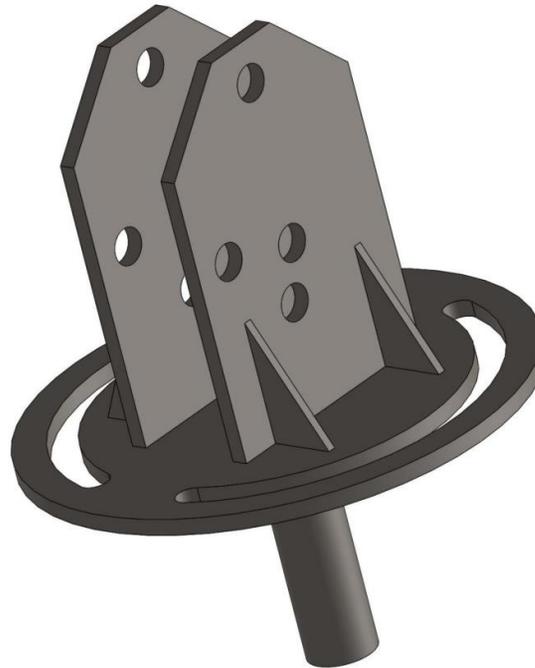
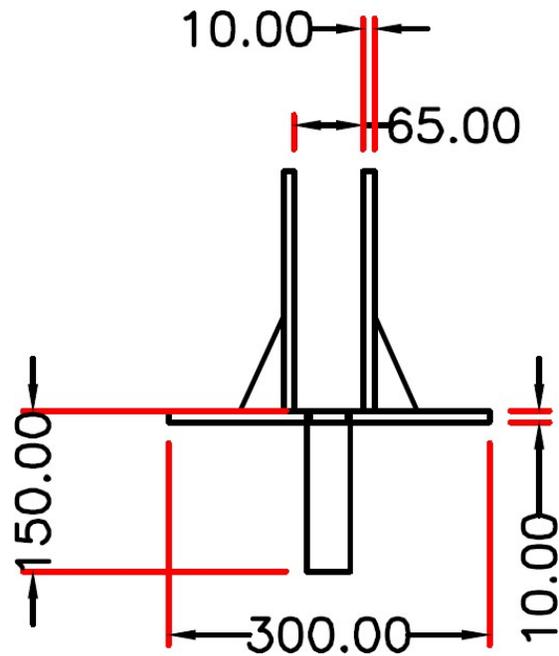
**PART - 1**  
**MAIN POLE**



Notes: -

1. All Dimensions are in mm.
2. Main Column material grade should be Yst - 240 as per: -IS: 1161 / 1239 & E250 as per: - IS: 1079 / 2062.
3. Welding should be done as per IS: - 822 & grade of welding wire should be (ER70S-6).
4. Tolerance for fabrication of steel structure should as per: - IS: 7215.
5. All structural steel should be Hot Dip Galvanized as per: - IS: 4759.

**PART - 2**  
**TOP PLATE**

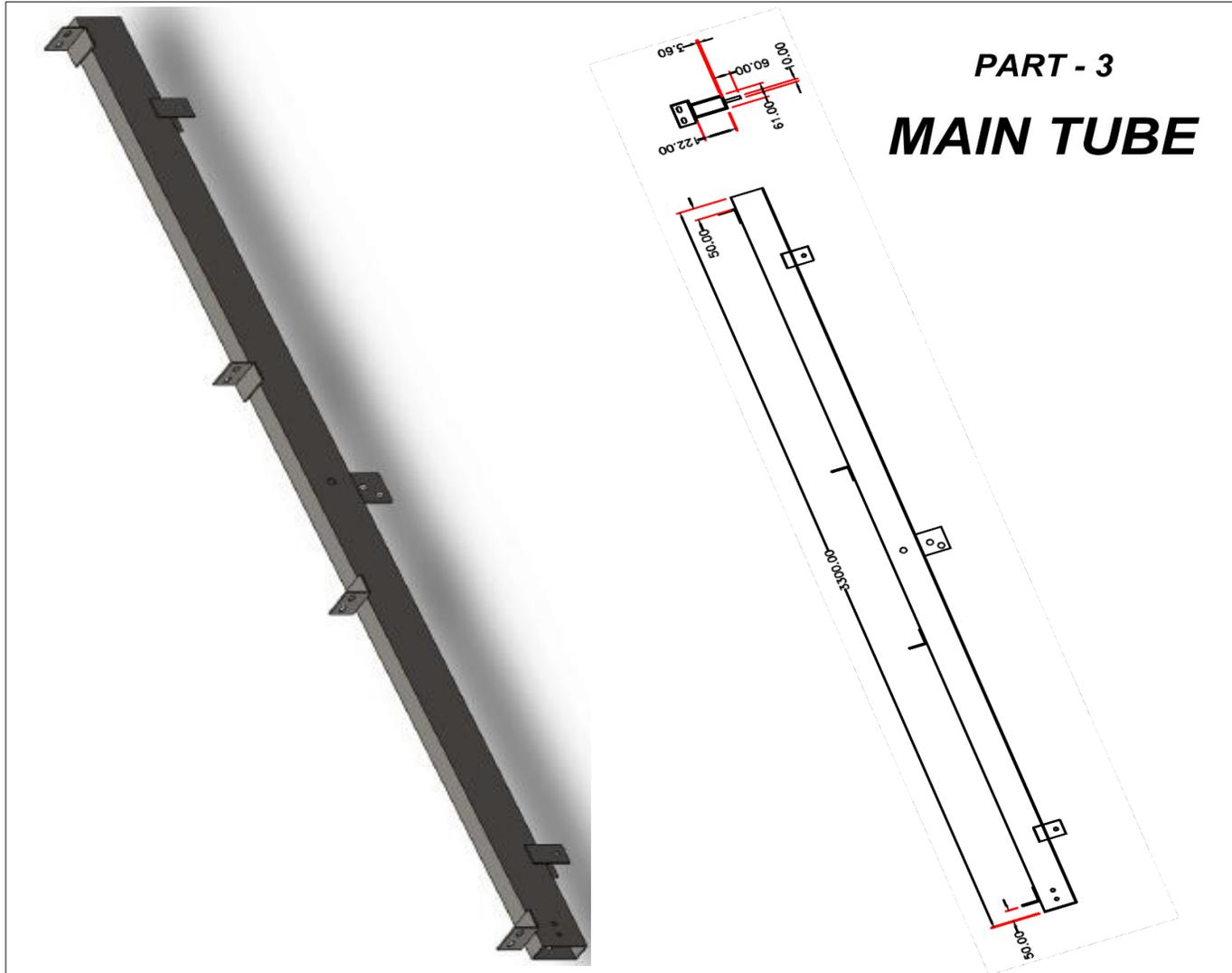


Notes: -

1. All Dimensions are in mm.
2. Top Plate material grade should be Yst - 240 as per: - IS: 1161 / 1239 & E250 as per: - IS: 1079 / 2062.
3. Welding should be done as per IS: - 822 & grade of welding wire should be (ER70S-6).
4. Tolerance for fabrication of steel structure should as per: - IS: 7215.
5. All structural steel should be Hot Dip Galvanized as per: - IS: 4759.

## MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE

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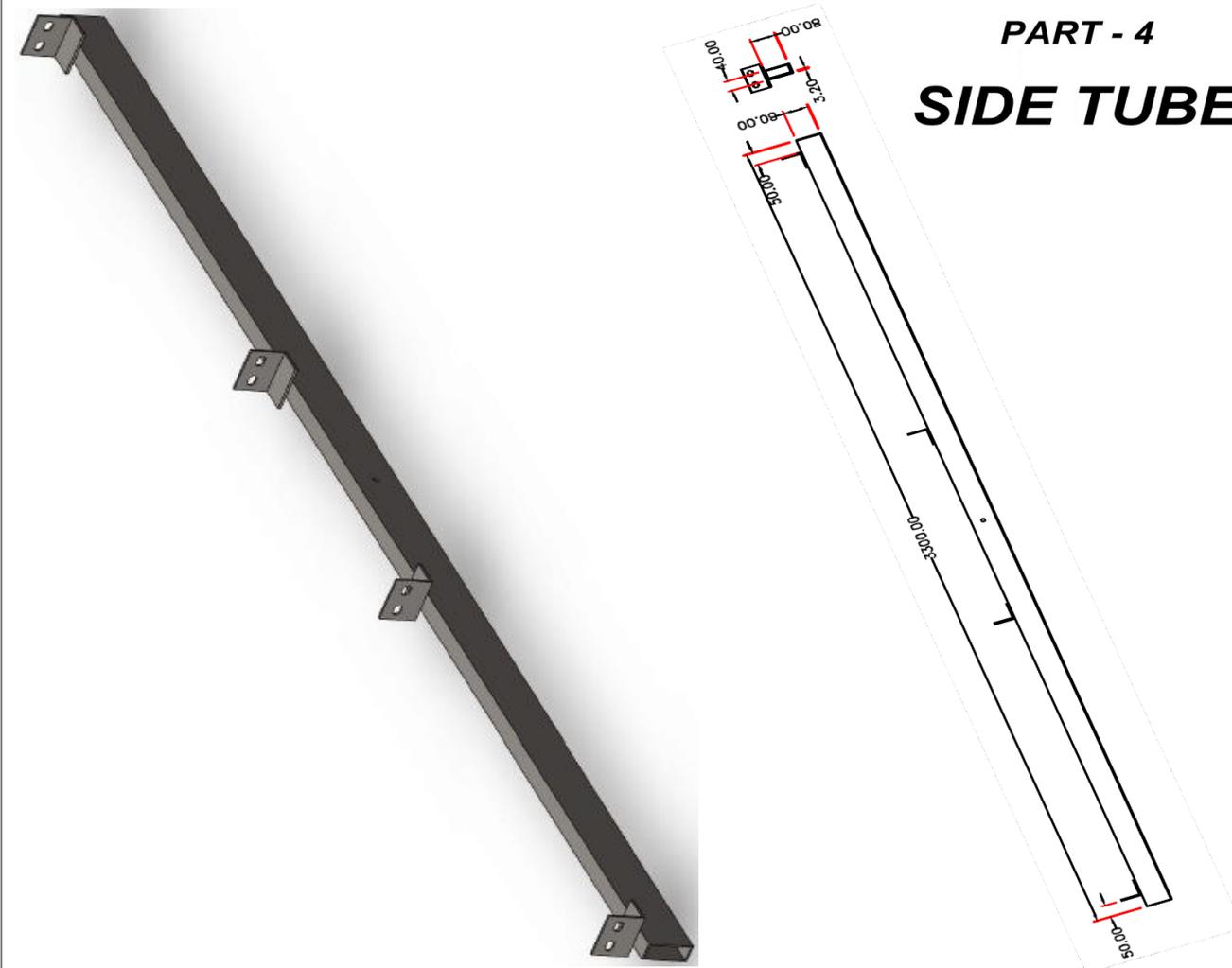
Notes: -

1. All Dimensions are in mm.
2. Main Tube material grade should be Yst - 240 as per: - IS: 4923, E250 as per: - IS: 1079 / 2062.
3. Welding should be done as per IS: - 822 & grade of welding wire should be (ER70S-6).
4. Tolerance for fabrication of steel structure should as per: - IS: 7215.
5. All structural steel should be Hot Dip Galvanized as per: - IS: 4759.

## MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE

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### PART - 4 SIDE TUBE

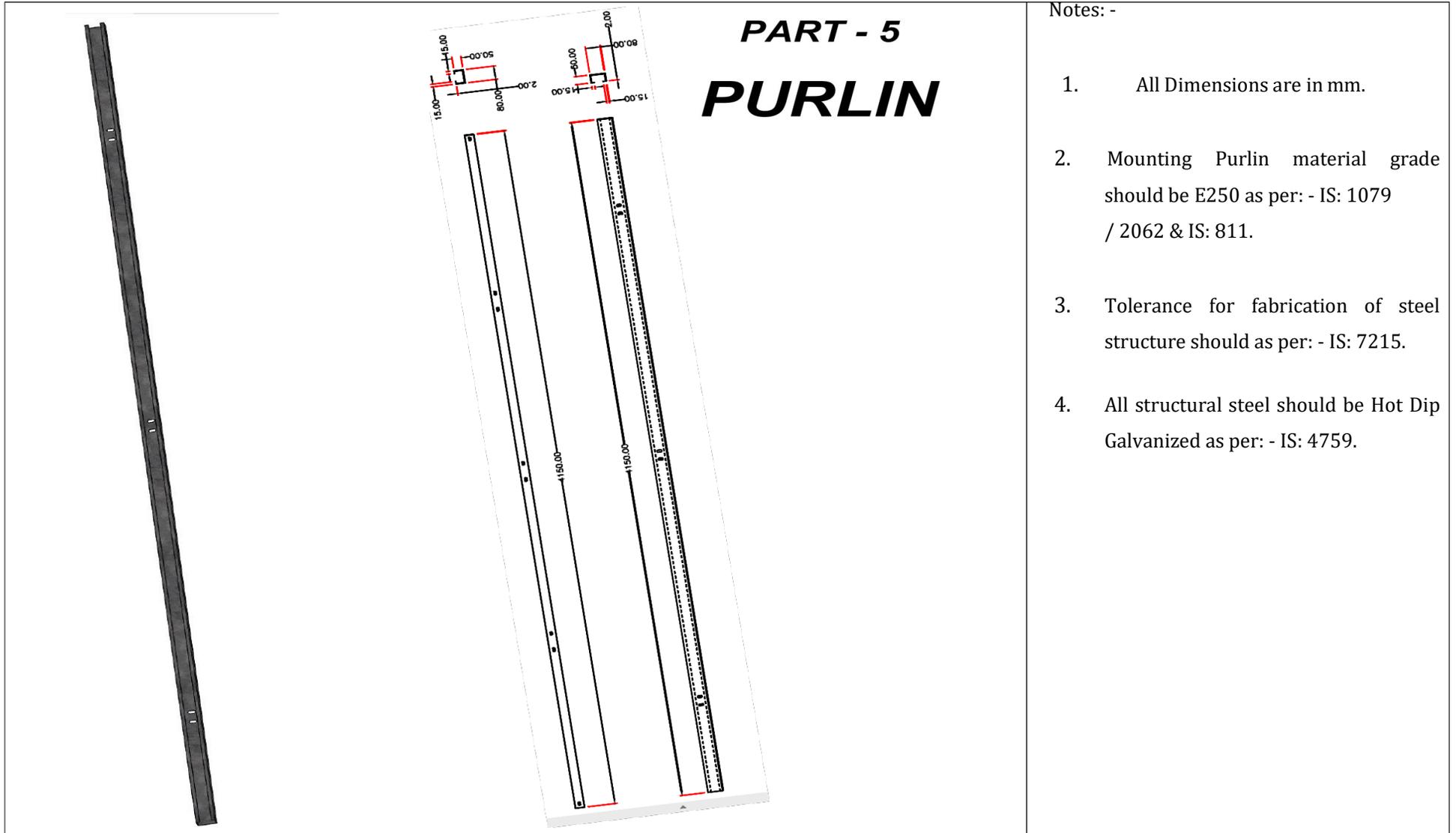


Notes: -

1. All Dimensions are in mm.
2. Side Tube material grade should be Yst - 240 as per: - IS: 4923, E250 as per: - IS: 1079 / 2062.
3. Welding should be done as per IS: - 822 & grade of welding wire should be (ER70S-6).
4. Tolerance for fabrication of steel structure should as per: - IS: 7215.
5. All structural steel should be Hot Dip Galvanized as per: - IS: 4759.

## MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE

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Notes: -

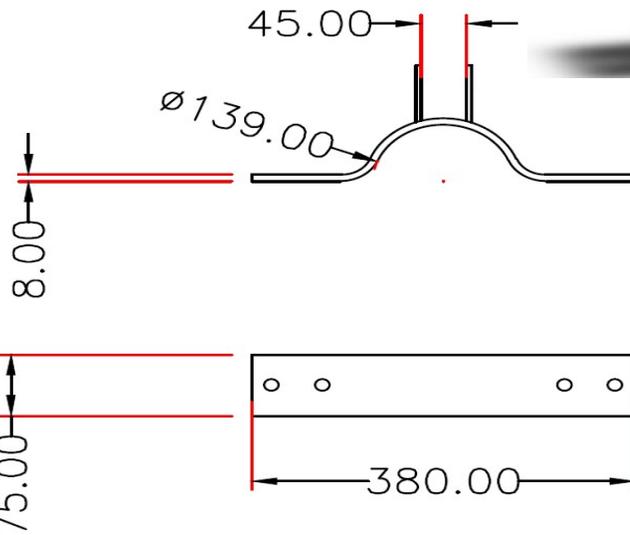
1. All Dimensions are in mm.
2. Mounting Purlin material grade should be E250 as per: - IS: 1079 / 2062 & IS: 811.
3. Tolerance for fabrication of steel structure should as per: - IS: 7215.
4. All structural steel should be Hot Dip Galvanized as per: - IS: 4759.

SIGNATURE AND SEAL OF EOIER

MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE

Survey, Design, Manufacture, Supply, Transport, Installation, Testing and Commissioning of Off Grid Solar Photovoltaic Water Pumping Systems of 3, 5 & 7.5 HP DC submersible, including complete system warranty and its repair and maintenance for 5 Years under Mahakrishi Urja Abhiyan PM-KUSUM Scheme Component-B in the state of Maharashtra

**PART - 6**  
**CLMAP WITH BLADE**



Notes: -

1. All Dimensions are in mm.
2. Clamp with Blade material grade should be as per: - IS: 1079 & E250 as per: - IS: 2062.
3. Welding should be done as per IS: - 822 & grade of welding wire should be (ER70S-6).
4. Tolerance for fabrication of steel structure should as per: - IS: 7215.
5. All structural steel should be Hot Dip Galvanized as per: - IS: 4759.

## MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE

Survey, Design, Manufacture, Supply, Transport, Installation, Testing and Commissioning of Off Grid Solar Photovoltaic Water Pumping Systems of 3, 5 & 7.5 HP DC submersible, including complete system warranty and its repair and maintenance for 5 Years under Mahakrishi Urja Abhiyan PM-KUSUM Scheme Component-B in the state of Maharashtra

### *PART - 7* **SUPPORTING PIPES**



Notes: -

1. All Dimensions are in mm.
2. Supporting Pipes material grade should be Yst - 240 as per: -IS: 1161 / 1239 & E250 as per: - IS: 1079 / 2062.
3. Tolerance for fabrication of steel structure should as per: - IS: 7215.
4. All structural steel should be Hot Dip Galvanized as per: - IS: 4759.

**MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE**

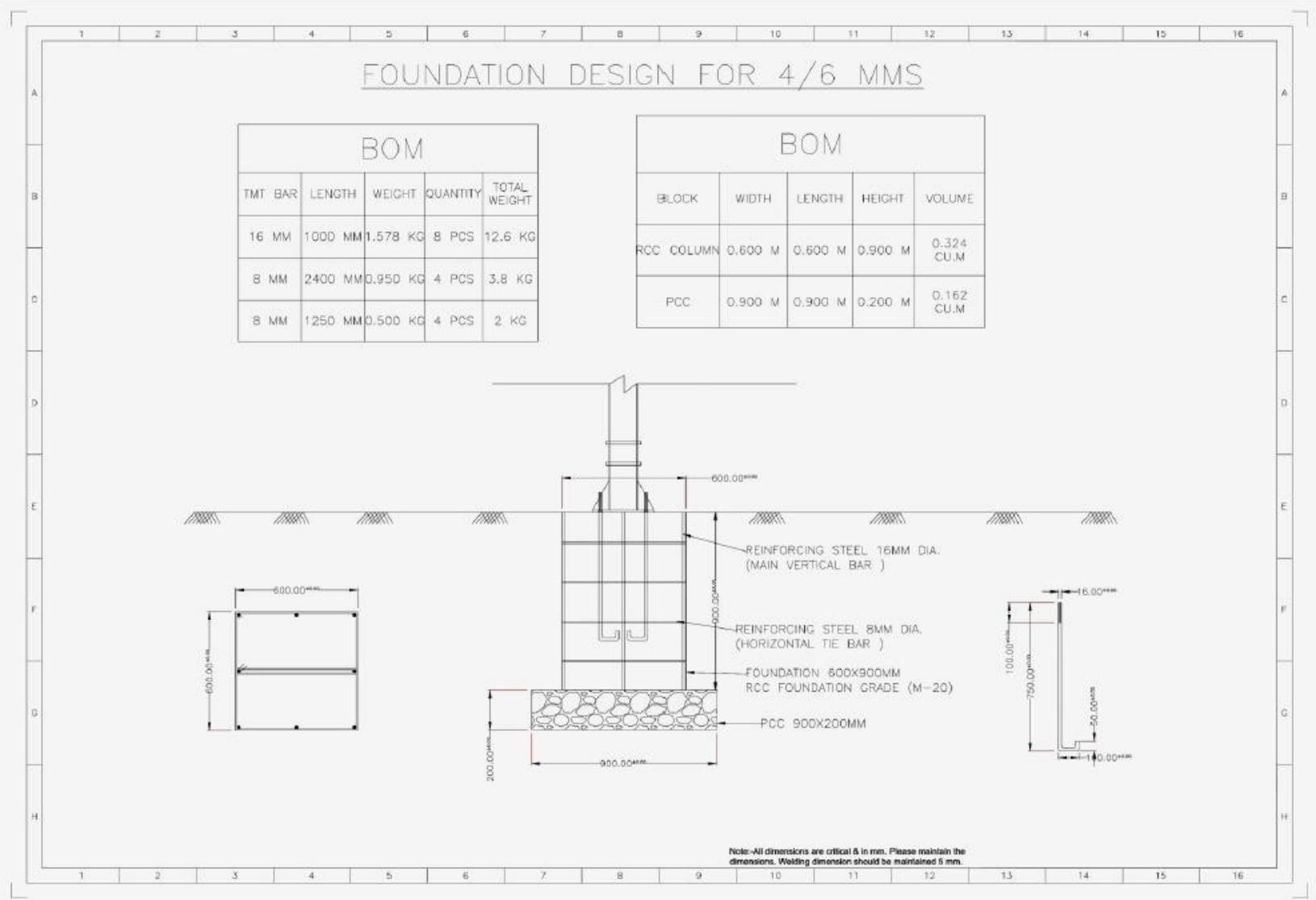
Survey, Design, Manufacture, Supply, Transport, Installation, Testing and Commissioning of Off Grid Solar Photovoltaic Water Pumping Systems of 3, 5 & 7.5 HP DC submersible, including complete system warranty and its repair and maintenance for 5 Years under Mahakrishi Urja Abhiyan PM-KUSUM Scheme Component-B in the state of Maharashtra

## **Bill of Quantity for main parts of MMS for Solar Water Pumping System**

SR. NO.	PART NAME	CROSS SECTION DETAIL	LENGTH (MM)	QUANTITY PER SET
<b>A</b>	<b>Common for MMS for 4, 6 and 8 Modules</b>			
1.	MAIN POLE	139 OD	1500	1
2.	TOP PLATE	300 OD	--	1
3.	CLAMP WITH BLADE	75X8	380	2
4.	SUPPORTING PIPES	41 OD & 33 OD	--	6
<b>B</b>	<b>Different for MMS for 4, 6 and 8 Modules</b>			
5.	MAIN TUBE			
	4 and 6 Module	60X60X3.6	3300	1
	8 Modules	122X61X3.6	3300	1
6.	SIDE TUBE			
	4 and 6 Module	50X50X3.6	3300	2
	8 Modules	80X40X3.2	3300	2
7.	MOUNTING PURLIN			
	4 Module	80X50X15X2	2050	4
	6 Module	80X50X15X2	3100	4
	8 Modules	80X50X15X2	4150	4

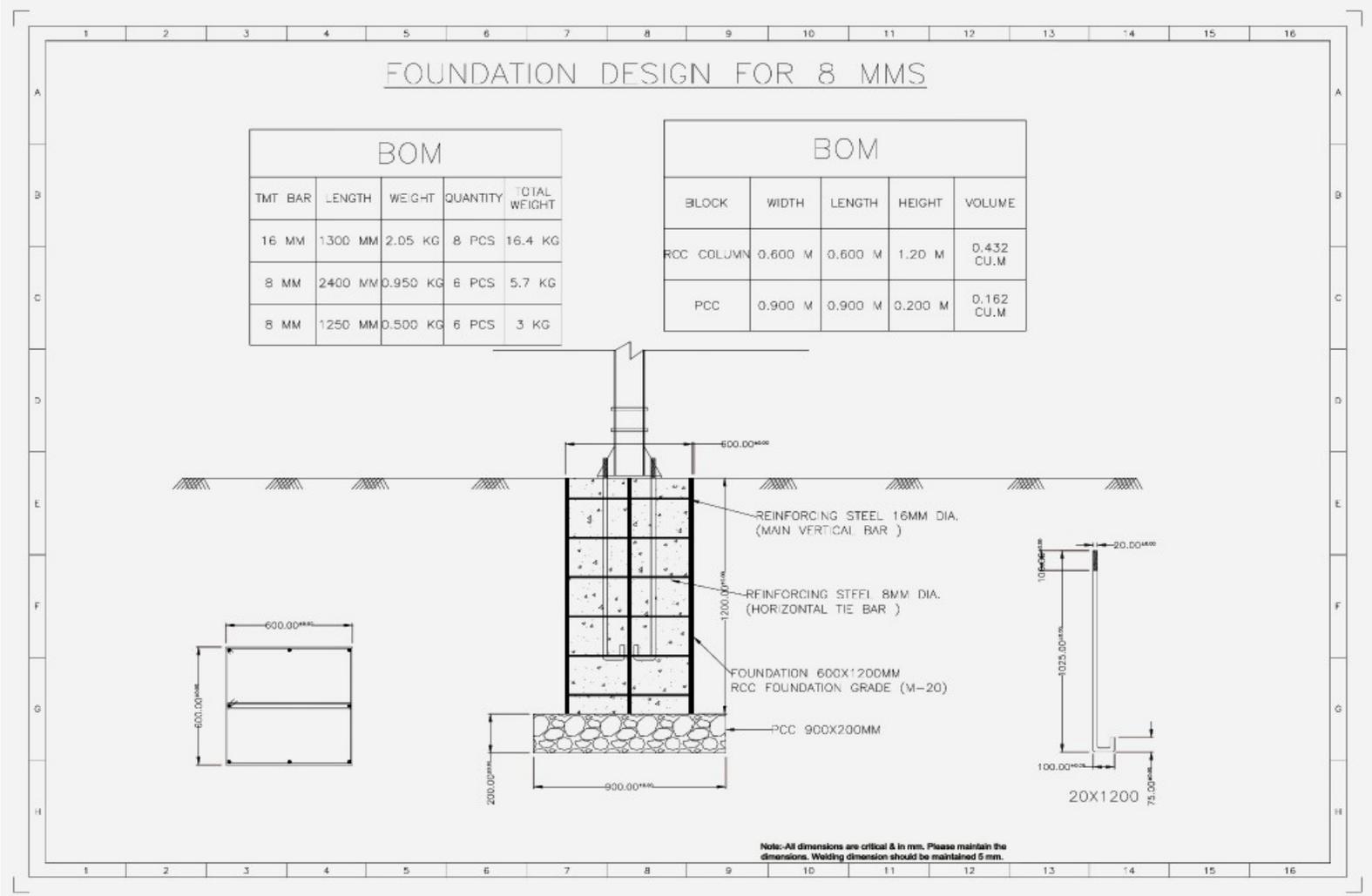
**MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE**

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**MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE**

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**ANNEXURE – B**

Indicative Technical Specifications of Shallow Well (Surface) Solar Pumping Systems with D.C. Motor Pump Set with Brushes or Brushless D.C. (B.L.D.C.)

<b>Description</b>	<b>Model-III</b>	<b>Model-IV</b>	<b>Model-V</b>	<b>Model-VI</b>	<b>Model-VII</b>	<b>Model-VIII</b>	<b>Model-IX</b>	<b>Model-X</b>
PV array (Wp)	2700	2700	4800	4800	4800	6750	6750	6750
Motor Pump-set capacity (HP)	3	3	5	5	5	7.5	7.5	7.5
Shut Off Dynamic Head (meters)	12	25	12	25	45	12	25	45
Water output * (Liters per day)	297000 (from a total head of 10 meters)	148500 (from a total head of 20 meters)	528000 (from a total head of 10 meters)	264000 (from a total head of 20 meters)	182400 (from a total head of 30 meters)	742500 (from a total head of 10 meters)	371250 (from a total head of 20 meters)	256500 (from a total head of 30 meters)

\* Water output figures are on a clear sunny day with three times tracking of SPV panel, under the “Average Daily Solar Radiation” condition of 7.15 kWh/ sq.m. on the surface of PV array (i.e. coplanar with the PV Modules).

Notes:

1. Suction head, if applicable, maximum 7 meters.
2. For higher or lower head / PV capacity, or in between various models; water output could be decided as per the clause 4 (i.e. Performance Requirements) specified earlier.
3. If submersible pumps are used in lieu of surface pumps, the water output must match that of the surface pumps as specified in this table.

**MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE**

Survey, Design, Manufacture, Supply, Transport, Installation, Testing and Commissioning of Off Grid Solar Photovoltaic Water Pumping Systems of 3, 5 & 7.5 HP DC submersible, including complete system warranty and its repair and maintenance for 5 Years under Mahakrishi Urja Abhiyan PM-KUSUM scheme Component-B in the state of Maharashtra

**ANNEXURE - II (CONTD.)**

Indicative Technical Specifications of Solar Deep well (submersible) Pumping Systems with D.C. Motor Pump Set with Brushes or Brushless D.C. (B.L.D.C.)

<b>Description</b>	<b>Model-III</b>	<b>Model-IV</b>	<b>Model-V</b>	<b>Model-VI</b>	<b>Model-VII</b>	<b>Model-VIII</b>	<b>Model-IX</b>	<b>Model-X</b>	<b>Model-XI</b>
PV array (Wp)	3000	3000	3000	4800	4800	4800	6750	6750	6750
Motor Pump-set capacity (HP)	3	3	3	5	5	5	7.5	7.5	7.5
Shut Off Dynamic Head (meters)	45	70	100	70	100	150	70	100	150
Water output * (Liters per day)	114000 (from a total head of 30 meters)	69000 (from a total head of 50 meters)	45000 (from a total head of 70 meters)	110400 (from a total head of 50 meters)	72000 (from a total head of 70 meters)	50400 (from a total head of 100 meters)	155250 (from a total head of 50 meters)	101250 (from a total head of 70 meters)	70875 (from a total head of 100 meters)

\* Water output figures are on a clear sunny day with three times tracking of SPV panel, under the "Average Daily Solar Radiation" condition of 7.15 kWh/ sqmt. on the surface of PV array (i.e. coplanar with the PV Modules).

Notes:

1. For higher or lower head / PV capacity, or in between various models; water output could be decided as per the clause 4 (i.e. Performance Requirements) specified earlier.
2. If surface pumps are used in lieu of submersible pumps, the water output must match that of the submersible pumps as specified in this table.

**MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE**

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**LIST OF STANDARDS**

<b>IS NO.</b>	<b>Title</b>
14286 : 2010	Crystalline Silicon Terrestrial Photovoltaic (PV) Modules — Design Qualification and Type Approval
3043:1987	Code of Practice for Earthing
5120:1977	Technical requirements for rotodynamic special purpose pumps (First revision)
11346:2003	Tests for Agricultural and Water Supply Pumps - Code of Acceptance
6603:2001	Stainless Steel Bars and Flats
6911:2017	Stainless steel plate, sheet and strip
7538:1996	Three-phase squirrel cage induction motors for centrifugal pumps for agricultural applications
8034:2002	Submersible pump sets - Specification (second revision)
9079:2002	Electric monoset pumps for clear, cold water for agricultural and water supply purposes - Specification (second revision)
9283:2013	Motors for submersible pump sets
11346:2002	Code of acceptance tests for agricultural and water supply pumps (first revision)
14220:1994	Open well submersible pump sets - Specification
14582:1998	Single-phase small AC electric motors for centrifugal pumps for agricultural applications
ISO 9905:1994	Technical specifications for centrifugal pumps -- Class I
IEC 60068-2-6:2007	Environmental testing – Part 2-6: Tests – Test Fc: Vibration (sinusoidal)
IEC 60068-2-30:2005	Environmental testing – Part 2-30: Tests – Test Db: Damp heat, cyclic (12+12h cycle)
IEC 60146-1-1:2009	Semiconductor converters - General requirements and line commutated converters - Part 1-1: Specification of basic requirements
IEC 60364-4-41:2005	Low-voltage electrical installations - Part 4-41: Protection for safety - Protection against electric shock
IEC 60364-7-712:2017	Low voltage electrical installations - Part 7-712: Requirements for special installations or locations - Solar photovoltaic (PV) power supply systems
IEC 60529:1989	Degrees of protection provided by enclosures (IP Code)
IEC 60947-1:2007	Low-voltage switchgear and control gear - Part 1: General rules
IEC 61000-6-2:2016	Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity standard for industrial environments
IEC 61000-6-3:2006	Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments
IS/IEC 61683 :1999	Photovoltaic Systems — Power Conditioners— Procedure for Measuring Efficiency
IS/IEC 61730-1 : 2004	Photovoltaic (Photo Voltaic (PV)) Module Safety Qualification Part 1 Requirements for Construction

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**APPENDIX- I (D)**

**Bidder's Information Sheet**

To establish its qualifications to perform the contract the Bidder shall provide the information requested in the corresponding Information Sheets included hereunder.

Bidder's legal name	
Bidder's country of constitution	
Bidder's year of constitution	
Bidder's legal address in country of constitution	
Bidder's UIN No.	
Bidder's Copy of Constitution	
Bidder's registration certificates for GST and registration certificates under the applicable PF and labour laws.	
Bidder's authorized representative (Name, address, telephone numbers, fax numbers, e-mail address)	
Attached are copies of the necessary original documents.	
1	
2	
3	
4	
5	
6	

Signature of Bidder

Name

Designation

Company

Date

**MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE**

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**APPENDIX- I (B)**

**Firm profile at a glance**

<b>Sr. No.</b>	<b>Particulars</b>	
1	Name & Mailing Address of firm	
2	Contact Person Name, Designation & Contact No.	
3	E-mail Address for correspondence	
4	Firm Website Address	
5	Firm Status (Private/ PSU/ Incorporate / Proprietor)	
6	Establish Year of firm	
7	PAN/ TAN No.	
8	Firm Registration No/ ROC	
9	EPF Registration No, if applicable	
10	STR/ GST/ TIN No	
11	Bank name & contact No	
12	Average annual Turnover of any 3 years out of last 4 years 2018-19, 2019-20, 2020-21 & 2021-22 (Rs. in Crore)	
13	Company Profile (<100 words)	
14	Partner/ JV Firm details, if any (<100 words)	
15	Factory Address & Floor Area of factory	
16	Net worth	
17	Self Manufacturing facilities & Capacity (A list of machinery be attached)	
18	Outsourcing Item and Firm (Name & Address of Indian/ foreign)	

**MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE**

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<b>Sr. No.</b>	<b>Particulars</b>	
19	Collaborator/s, if Any)	
20	Own Testing facility	
21	Skilled manpower	
22	Dealer/ supply network in Maharashtra	
23	Experience in SPV Power Plant (<100 words)	
24	Experience in other solar projects (<100 words)	
25	Solar related Product Range	
26	Guarantee, Maintenance & After Sales Services (Years)	
27	Accreditation (Own Firm)	
28	Accreditation (Partner/ outsourcing Firm)	
29	List of ISI, ISO, other cert. for own firm	
30	List of ISI, ISO, other cert. for partner/ outsourcing firm	
31	Technical specification for solar photovoltaic cell/ panel/ module	
32	Technical specification for Battery	
33	Technical specification for Junction boxes	
34	Technical specification for Inverter / Controller	
35	Technical specification for Cables	
36	Other Technical specification, if any	
37	Has any Govt. / Under - taking ever debarred the company / firm from	

## MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE

Survey, Design, Manufacture, Supply, Transport, Installation, Testing and Commissioning of Off Grid Solar Photovoltaic Water Pumping Systems of 3, 5 & 7.5 HP DC submersible, including complete system warranty and its repair and maintenance for 5 Years under Mahakrishi Urja Abhiyan PM-KUSUM scheme Component-B in the state of Maharashtra

Sr. No.	Particulars	
	executing any work?	
38	Special Remarks, if any	

It is certified that the information provided above is true to the best of my knowledge and belief. If any information found to be concealed, suppressed or incorrect at later date, our EoI shall be liable to be rejected and our company may be debarred from executing any business with Govt. of Maharashtra/ MEDA.

Signature of Bidder

Name

Designation

Company

Date:

**MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE**

Survey, Design, Manufacture, Supply, Transport, Installation, Testing and Commissioning of Off Grid Solar Photovoltaic Water Pumping Systems of 3, 5 & 7.5 HP DC submersible, including complete system warranty and its repair and maintenance for 5 Years under Mahakrishi Urja Abhiyan PM-KUSUM scheme Component-B in the state of Maharashtra

**APPENDIX- I (C)**

**Financial Status**

Each Bidder must fill in this form including private/ public limited company.

Sr. No.	Particulars	Financial Data for Previous 3 Years [Rs. in Lacs]			
		2018-19	2019-20	2020-21	2021-22
1	Total Assets				
2	Current Assets				
3	Total Liabilities				
4	Long Term Loans				
5	Current Liabilities*				
6	Profits Before Taxes				
7	Profits After Taxes				
8	Net Worth [1 - 4 - 5]				
9	Dedicated Revolving Line of Credit (as per format)				
10	Available Working Capital [2 -5] + [9]				
11	Return on Equity [6 / 8 of previous year]				
12		Attached are copies of the audited balance sheets, including all related notes, and income statements for the years of FY 2018-19, 2019-20, 2020-21 & 2021-22 as indicated above, complying with the following conditions?			
	•	• All such documents reflect the financial situation of the Bidder, and not sister or parent companies.			
	•	• Historic financial statements must be audited by a certified accountant			
	•	• Historic financial statements must be complete, including all notes to the financial statements.			

## MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE

Survey, Design, Manufacture, Supply, Transport, Installation, Testing and Commissioning of Off Grid Solar Photovoltaic Water Pumping Systems of 3, 5 & 7.5 HP DC submersible, including complete system warranty and its repair and maintenance for 5 Years under Mahakrishi Urja Abhiyan PM-KUSUM scheme Component-B in the state of Maharashtra

	•	• Historic financial statements must correspond to accounting periods already completed and audited (no statements for partial periods shall be requested or accepted).
	•	• As per International Accounting, Current Liabilities shall include loan and other repayments due within one year.
	•	• If the bidder feels that its financial capacity is insufficient bidder may include with the bid a letter from a reputed bank, addressed to the Director General, MEDA which describes the revolving line of credit that the bidder is eligible for with the bank.

Applicant's Auditor

**MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE**

Survey, Design, Manufacture, Supply, Transport, Installation, Testing and Commissioning of Off Grid Solar Photovoltaic Water Pumping Systems of 3, 5 & 7.5 HP DC submersible, including complete system warranty and its repair and maintenance for 5 Years under Mahakrishi Urja Abhiyan PM-KUSUM scheme Component-B in the state of Maharashtra

**APPENDIX- I (D)**

**Average Annual Turnover**

Each Bidder must fill in this form including private/public limited company.

<b>Annual Turnover Data for the any 3 Years out of last 4 years FY 2018-19 2019-20 2020-21 &amp; 2021 -22</b>			
<b>Year</b>	<b>Amount Currency</b>	<b>Exchange Rate</b>	<b>Rs. in Lacs</b>
2018-19			
2019-20			
2020-21			
2021-22			

The information supplied should be the Average Annual Turnover of the Bidder in terms of the amounts billed to clients for each year for work in progress or completed.

Signature of Applicant

Certified by Applicant's Auditor

(Affix Stamp & Registration No.)

**MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE**

Survey, Design, Manufacture, Supply, Transport, Installation, Testing and Commissioning of Off Grid Solar Photovoltaic Water Pumping Systems of 3, 5 & 7.5 HP DC submersible, including complete system warranty and its repair and maintenance for 5 Years under Mahakrishi Urja Abhiyan PM-KUSUM scheme Component-B in the state of Maharashtra

**APPENDIX- II**

**To:** Maharashtra Energy Development Agency  
Represented by,  
Director General  
Maharashtra Energy Development Agency  
Aundh Road, Opposite Spicer College, Near  
Commissionerate of Animal Husbandry, Aundh Pune- 411 007.

WHERE [name and address of Contractor] (hereinafter called "the Contractor") has undertaken, in pursuance of Work Order No. \_\_\_\_\_, EoI No. REN/PUMP/KUSUM/2022-23/01 for works \_\_\_\_\_, dated \_\_\_\_\_ 2022 to Survey, Design, Manufacture, Supply, Transport, Installation, Testing and Commissioning of Off Grid Solar Photovoltaic Water Pumping Systems of 3, 5 & 7.5 HP DC submersible, including complete system warranty and its repair and maintenance for 5 Years under Mahakrishi Urja Abhiyan PM-KUSUM scheme Component-B in the state of Maharashtra. (hereinafter referred to as the contract of works) and as described in the Bidding Data in Maharashtra State for works under PM-KUSUM scheme in Maharashtra 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

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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 defect's liability period, with a claim period of further one month.

Yours truly, \_\_\_\_\_

Signature and seal of the Guarantor: \_\_\_\_\_

Name of Bank/Financial Institution: \_\_\_\_\_

Address: \_\_\_\_\_

Date: \_\_\_\_\_



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**APPENDIX- V**

**Declaration Regarding Blacklist  
(To be submitted on letterhead of bidder)**

Date:-----

To,  
General Manager (Solar)  
Maharashtra Energy Development  
Agency, MEDA, Pune.

**Sub. : Declaration Regarding Blacklist.**

Ref. MEDA's EoI No.-----

Sir,

This has reference to above referred EoI, we hereby certified that M/s.-----  
---- is not blacklisted by any Govt./semi-Govt. Agency/PSU/Organization/Department/UT.

It is certified that the information provided above is true to the best of my knowledge and belief. If any information found to be concealed, suppressed or incorrect at later date, our EoI shall be liable to be rejected and our company may be blacklisted from executing any business with Govt. of Maharashtra/ MEDA.

Thanking You

Yours faithfully

Signature of bidder :

Name of bidder :

Designation :

Date :

Stamp :

## MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA), PUNE

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### QUALITY CERTIFICATION, STANDARDS AND TESTING

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:

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 (NH <sub>3</sub> ) 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

**Note-** Equivalent standards may be used for different system components of the Solar Water Pump.

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**[Duly Notarised on Rs. 100/- Stamp Paper]**

**Bid Security Declaration**

In reference to EESL EoI For “\_\_\_\_\_ [Subject of EoI] \_\_\_\_\_” published vide NIT/Bid Document No: \_\_\_\_\_ dated: \_\_, I, on behalf of

[Name of the bidder] \_\_\_ hereinafter referred to as “Bidder”,

(a) Understand that, according to EoI conditions, bids must be supported by a Bid Security Declaration.

(b) Hereby submit a declaration that the bid submitted by the undersigned, on behalf of the Bidder, either sole or in JV or Company, shall not be withdrawn or modified during the period of bid validity as mentioned in the EoI document.

I, on behalf of the Bidder, \_\_\_ [Name of the bidder] \_\_, also accept the fact that in case the bid is withdrawn or modified during the period of its validity or if \_\_\_ [Name of the bidder] \_\_ fail to sign the contract in case the work is awarded to us or fail to submit a performance security before the deadline defined in the EoI document/letter of award, then

[Name of the bidder] shall be suspended for participating in the EoI process of EESL, for a period of one (01) year from bid due date of above referred EoI.

I, on behalf of the Bidder, \_\_\_ [Name of the bidder] \_\_, also understand that this Bid Securing Declaration shall cease to be valid if I am/we are not the successful Bidder, upon the earlier of

(a) the receipt of your notification of the name of the successful Bidder; or

(b) thirty days after the expiration of the validity of my/our Bid

Signed: (insert signature of person whose name and capacity are shown)

in the capacity of: (insert legal capacity of person signing the Bid Securing Declaration)

Name: (insert complete name of person signing the Bid Securing Declaration) Duly authorized to sign the bid for an on behalf of [Name of the bidder]

Corporate Seal (where appropriate)

***(Note: In case of a Joint Venture/Consortium, the Bid Security Declaration must be in the name of all partners to the Joint Venture/Consortium that submits the bid)***

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### Check List

**All the necessary Documents / Certificates should be uploaded as in proper sequence as mentioned below:**

1. Original EoI document duly signed and stamped on each page or Undertaking (Rs.100) and declaration that all the terms & conditions mentioned in each and every page of the said EoI document with further clarifications released if any are acceptable.
2. EMD and EoI document fee (It is compulsory to pay EoI document fee, EMD online).
3. Name of authorized person (power of attorney) for submitting the document.
4. Name of the Banker.
5. Copy of the recently paid Income Tax Challan/Return, Latest CA certified balance sheet of last three years, PAN number, registration certificates of GST etc. (Self Attested)
6. Information on Infrastructure for maintenance work. (Details of Office Setup and Company Personnel responsible to carry out execution of project and thereafter for CMC)
7. Registration Certificate of the firm.
8. Bidder's Information Sheet **Appendix-I (A)**.
9. Firm Profile at a Glance **Appendix-I (B)**.
10. Financial Status **Appendix-I (C)**.
11. Average Annual Turnover **Appendix-I (D)**.
12. Form of Performance Bank Guarantee **Appendix-II**.
13. Experience for supply and commissioning of Solar Water Pump **Appendix-III** (along with the self-attested copies of work order).
14. Self Certified on Company Letter stating Non-Blacklisted Company. **Appendix-IV**
15. IEC 61215 (revised) certificate for SPV module, Test Report for Solar Pump.

If any of the documents is not uploaded the EoI will be rejected. The bidders need to submit their all documents mentioned in EoI.