



**Chhattisgarh State Renewable Energy Development Agency (CREDA)
(Dept. of Energy, Govt. of Chhattisgarh)**

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TENDER DOCUMENT No. 102066/CREDA/ SPVDWP-02/2022-23 Dated: 13/06/2022

UNIQUE TENDER ID – 102066

E-TENDER FOR STANDARDISATION OF RATES FOR SUPPLY AND INSTALLATION OF SOLAR DRINKING WATER PUMPING SYSTEMS OF 900Wp/6M STAGING/5000L WATER TANK & 900Wp/6M STAGING/10000L WATER TANK ,WITH FIVE YEARS ONSITE AND UNCONDITIONAL WARRANTEE ANYWHERE IN STATE OF CHHATTISGARH.

| Particulars | From Date & Time | To Date & Time | Place |
|---|-----------------------------------|------------------------|---|
| Date of issue of notice Inviting Bid | 13-06-2022 05:00 PM | ----- | ----- |
| Period of availability of bidding document at website | 13-06-2022 05:00 PM | 04-07-2022 05:00 PM | http://www.creda.co.in/Tenders |
| Submission of Pre Bid queries in writing | 13-06-2022 05:00 PM | 21-06-2022 05:00 PM | At CREDA H.O., Raipur in writing or via email at credatendercell@gmail.com |
| Demo of Sample Systems | 24-06-2022 02:00 PM | 24-06-2022 05:00 PM | At CREDA H.O., Raipur |
| Submission of Online Bid (Technical + e-Price Bid) and Submission of Documents in hard copy | 13-06-2022 05:00 PM | 04-07-2022 05:00 PM | https://eproc.cgstate.gov.in |
| Opening of Technical Bid | 05-07-2022 11:00 AM onwards | | At CREDA H.O., Conference Hall, Raipur. |
| Evaluation of technical bid and Declaration of Eligible Bidder (The technical qualification part) | 07-07-2022, 12:00 Noon onwards | | At Vikas Bhawan, PMGSY, Conference Hall, Raipur (https://eproc.cgstate.gov.in) |
| Opening of e- Price Bid (The financial part of the bid - bidders who qualified in technical bid) | 08-07-2022, 12:00 noon onwards | | At CREDA H.O., Conference Hall, Raipur. |

Tender Document Cost– Rs.10,000.00 + 18% GST = Rs.11,800.00

(in words Rupees Eleven Thousand Eight Hundred Only) to be deposited in CREDA's account along with EMD via Demand Draft/ Pay Order or RTGS / NEFT.

Document can be downloaded from our website www.creda.co.in or from Chhattisgarh e-Procurement portal i.e. <https://eproc.cgstate.gov.in>.

CHATTISGARH STATE RENEWABLE ENERGY DEVELOPMENT AGENCY

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NOTICE INVITING BID

CREDA invites online Bids for Survey, design, supply, installation, and commissioning of Solar Photovoltaic Drinking Water pumps (Solar Drinking Water pumps) with five years CMC, unconditional onsite warrantee for anywhere in the State of Chhattisgarh from registered System Integrators of CREDA for SPV with 5 years track record in Solar Drinking Water Pumps, as per following details –

| Sl. No. | Item Description | Approximate Quantity | Cost of Bid Document | EMD | Essentials |
|--------------|--|----------------------|--|------------------------|---|
| 1. | SPV Drinking Water Pumps 900 Wp (Min 300 Wp x 3Nos)/1.0 HP DC Submersible with 6 Meters staging and 5000 Litres Storage Tank | 2000 | Rs10,000.00 +18% GST = Rs. 11,800.00/- | Rs. 10,00,000.00 /- | As per clause no. 1A to 1F of Eligibility Criteria (Page no. 8 – 9) |
| 2. | SPV Drinking Water Pumps 900 Wp (Min 300 Wp x 3Nos)/1.0HP DC Submersible with 6Metersstagingand10000Litres Storage Tank | 1000 | | | |
| TOTAL | | 3000 Numbers | Rs. 11,800/- | Rs. 10,00,000/- | ---- |

The quantity of pumps mentioned in above table is based on targets/work that are expected to be given by various agencies to CREDA within the period of two years.

Estimated Value of tender:- Rs.300 crores

Important Events and time schedule for this Bid are as follows –

| Particulars | From Date & Time | To Date & Time | Place |
|---|-----------------------------------|------------------------|---|
| Date of issue of notice Inviting Bid | 13-06-2022 05:00 PM | ----- | ----- |
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| Submission of Pre Bid queries in writing | 13-06-2022 05:00 PM | 21-06-2022 05:00 PM | At CREDA H.O., Raipur in writing or via email at credatendercell@gmail.com |
| Demo of Sample Systems | 24-06-2022 02:00 PM | 24-06-2022 05:00 PM | At CREDA H.O., Raipur |
| Submission of Online Bid (Technical + e-Price Bid) and Submission of Documents in hard copy | 13-06-2022 05:00 PM | 04-07-2022 05:00 PM | https://eproc.cgstate.gov.in |
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| Opening of e- Price Bid (The financial part of the bid - bidders who qualified in technical bid) | 08-07-2022, 12:00 noon onwards | | At CREDA H.O., Conference Hall, Raipur. |

Technical Bid and Price Bid shall be submitted online only at <https://eproc.cgstate.gov.in>. However, original hard copy of technical bid documents (which were submitted in online bid) shall have to be submitted at Head Office, CREDA. If there is any discrepancy between the online bid and hard copy of documents, only the documents in online bid shall be considered. Bidders are advised to follow the instructions provided for Registration and e-Submission Process accordingly. (For any query about e-bidding please visit user manual at

<https://eproc.cgstate.gov.in>).

Details of this Bid are mentioned at Bid Documents which can be downloaded from our website www.creda.co.in.

The Bidder should have to deposit Bid document cost along with EMD through Demand Draft/Pay Order or NEFT/RTGS in the account of CREDA as mentioned above.

Bidders are requested to submit Pre-Bid queries with their suggestions/objections/ reservations if any with details so as to avoid any confusion and to ensure clarity and transparency regarding the Bid.

Any Addendum/Corrigendum/Amendment Notice if arises will only be uploaded on CREDA's Website.

CREDA reserves all rights to accept/reject any or all tenders in full/part without assigning any reasons.

**Chief Engineer
RE-V, H.O. CREDA
Raipur (CG)**

CHECK LIST OF DOCUMENTS TO BE UPLOADED IN THE E-BIDDING PORTAL

To ensure that your Bid uploaded on the Chhattisgarh e-Procurement portal i.e. <https://eproc.cgstate.gov.in> is complete in all respects, please go through the following checklist & tick mark for the enclosures attached with your Bid –

| Sl. No. | Envelope | Description of documents to be uploaded in the e-bidding portal | Complied (Yes/ No) | (Page No) |
|---------|---|--|--------------------|-----------|
| 1 | A. Pre-Qualification | EMD and Tender Document Fee submission form of the bidder confirmed by CREDA (as on page – 7) | | |
| 2 | | Scanned Copy of Undertaking of the Bidder as mentioned on Page – 8 of the tender document on the letter head of bidder | | |
| 3 | | Scanned copy of original tender document duly signed & with stamp on each page, as a confirmation of acceptance of the Terms & Conditions (T&C). | | |
| 4 | | PAN, GSTIN issued in the name of the bidder | | |
| 5 | | Self-certificate from Bidder on not being a debarred from Government contract or a blacklisted company. | | |
| 6 | | Consortium Agreement along with MoU (If Applicable) (Annexure II) | | |
| 7 | | Declaration of conflict of interest - by bidder about any relatives working with CREDA and Affidavit (Annexure III) | | |
| 8 | | Copy of Registration: Certificate as System Integrator of CREDA in SPV Program valid at the time of submission of bid. | | |
| 9 | B. Technical and Financial Qualification | Copy of Approved Test Reports and/or acknowledgment copy in the name of bidder as per eligibility criteria clause 1A. | | |
| 10 | | Original Net Worth Certificate duly signed by Chartered Accountant as on 31 st March 2021. | | |
| 11 | | Copy of certificate for last five years turnover of works done in Solar Field. | | |
| 12 | | Copy of ITRs for last five Financial Years of the Bidder. | | |
| 13 | | Completion and Performance Certificates of Installation and Commissioning of SPV DRINKING WATER PUMPs by the Bidder in Govt. Scheme of any State or in CREDA in last five financial years. | | |
| 14 | | Proof of being Eligible manufacturer of SPV-Pumps/ Controller / Structure of SPV Drinking water pumping system. | | |
| 15 | | Manufacture Authorization certificates of all components of SPV drinking water pumps. | | |
| 16 | | Declaration of test reports and makes of component to be used by bidder. | | |
| 17 | | Technical Data Sheet for each component showing full technical details. | | |
| 18 | | Declaration for using same make of equipment's as per the test certificate(Annexure – X) | | |

Note: Bidders shall have to submit the original hard copies of the above mentioned documents as described in Section – 1; Clause 5(d).

Details of EMD and Tender Document Fee

| | |
|--------------------------------------|--|
| Name of A/c | CREDA |
| Bank & Branch Name | ICICI Bank, Panchpedi Naka, Raipur |
| Bank Account Number | 134601000400 |
| Branch IFSC Code | ICIC0001346 |
| Tender No. and Date | |
| Name of the Bidder | |
| Bidder's Bank Account Details | |
| (i) Name of the bank | |
| (ii) Branch | |
| (iii) IFSC Code | |
| (iv) Account No. | |
| (v) Transaction reference number | EMD - _____ ; Bid Document Fee - _____ |
| (vi) Date of transaction | EMD - _____ ; Bid Document Fee - _____ |
| (vii) EMD | Rs./- In Words (Rs.....) |
| (viii) Bid Document Fee | Rs./- In Words (Rs.....) |

(Sign & Seal of the bidder)

***NOTE –**

1. The EMD and the Tender Document Fee shall have to be deposited as mentioned in the NIT in CREDA's bank account (amount mentioned above). Bidder shall have to upload the transaction details as above or a scanned copy of the DD (if transaction is done through DD)
2. In case the transaction is done through DD, the original DD has to be submitted in envelope A as per Clause 5(d).

UNDERTAKING OF THE BIDDER

(To be submitted on letter head)

I/We have read carefully and examined the notice inviting Bid, schedule, General Rules and terms and conditions of the contract, special conditions, Schedule of Rates and other documents and Rules referred to in the Bid document for the supply.

I/We hereby Bid my rates for the execution of the work for CREDA as specified within the time stipulated in the schedule in accordance with all aspects with the specifications, designs, drawings and instructions with such conditions so far as applicable.

I/We agree to keep the Bid valid for **One Hundred Eighty (180) days** from the due date of submission thereof and not to make any modifications in its terms and conditions.

A sum of **Rs 10 Lacs** is hereby forwarded as **Earnest Money** in the form of crossed Demand Draft/ Pay Order or RTGS / NEFT payable to CREDA at Raipur (C.G.). If I/We fail to commence or complete the Work Ordered in specified time or fail to fulfil the any condition of Bid document, I/We agree that the CREDA shall, without prejudice to any other right or remedy, be at liberty to forfeit the said Earnest Money absolutely. The said Earnest Money shall be retained by CREDA towards security deposit to execute all the works referred to in the Bid documents upon the terms and conditions contained or referred to therein and to carry out such deviations as may be required by CREDA.

I/We hereby declare that I/We shall treat the Bid documents, specifications and other records connected with the work 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 prejudicial to the safety of CREDA/Government.

I/We shall abide to all the laws and shall be responsible for making payments of all the taxes, duties, levies and other Govt. dues etc. to the appropriate Govt. departments.

Our GST Registration No._____. The PAN No. under the Income Tax Act is _____.

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 CREDA to recover the taxes due from us and deposit the same with the appropriate authorities on their demand.

I/We declare that none of our relatives is working in CREDA either on Regular/Contract/Placement basis or I/We don't have any partnership/ subcontract obligation with any employee working in CREDA at present directly or indirectly and we will not enter in such obligation in future also. If any breach of declaration is found than we will be responsible for our debarment and any other action taken by CREDA.

Dated:

Signature

Place:

Name of Bidder with seal.....

Witness:

Signature:

Name:

Postal Address:

.....

SECTION - 1

INSTRUCTIONS FOR BIDDERS

1. ELIGIBILITY CRITERIA :

A. TEST REPORTS OF SPV PUMPS

i. Bidder must have original and valid test report(s) of SPV pump of 1HP solar DC pumping system with 900Wp, (min.) solar modules separately in their names. Test report(s) is mandatory for eligibility to participate in the tender. Bidder will have to provide copy of test reports and/or acknowledgement copy of such test reports of their SPV pump(s) from the solar energy test centre or any other test centre accredited by NABL. Bidder shall have to submit original test certificate/reports for the bidding pumps at the time of agreement.

Note: In case, during the execution of the work, if the bidder/SI wishes to change the make of major components (with the same specifications in this bid) such as Solar Modules and/or Pump (and/or Pump controller), then such bidder/SI shall have to submit the test report of the entire Solar Drinking Water Pumping System with this newly proposed configuration to CREDA and only after due approval from CREDA can the bidder install such system in the field. CREDA reserves the right to allow or disapprove such new configurations as and when they are brought to CREDA's notice by the bidders/SIs.

ii. Bidder shall have to produce original test certificate(s) (*in addition to the documents submitted in hard copy as per Clause 5(d)*) for the bidding pumps at the time of opening of technical bid.

B. MINIMUM EXPERIENCE

Bidders must **have minimum experience** under Government or Market Mode Schemes for at least Five consecutive financial years excluding current Financial Year i.e. FY 2017-18, 2018-19, 2019-20, 2020-21 and 2021-22 till 31-03-2022 as per the details mentioned below:

| S. N. | Bidding for Capacity of SPV Drinking Water Pump | for Bidders of Chhattisgarh state | for Bidders of Other States |
|-------|--|---|---|
| 1 | SPV Drinking Water Pumps 900Wp (min. 300Wp x 3nos) /1.0 HP DC submersible with 06 Meters staging and 5,000 Litres Storage Tank (5000L x 1nos) | Minimum 50 numbers of SPV Drinking Water Pumps of 4.5 Mtr or above staging, 01 HP (or above) capacity submersible pumps with 5,000L or above capacity water tank. | Minimum 100 numbers of SPV Drinking Water Pumps of 4.5 Mtr or above staging, 01 HP (or above) capacity submersible pumps with 5,000L or above capacity water tank |
| 2 | SPV Drinking Water Pumps 900Wp (min. 300Wp x 3nos) /1.0 HP DC submersible with 06 Meters staging and 10,000 Litres Storage Tank (5000L x 2nos) | | |

C. Bidders will have to submit experience of certificates in form of satisfactory commissioning and functioning report containing complete system details from the concerned state/central agencies /department document issued by competent authority duly sealed and signed along with bid document. Experience certificate shall be submitted in attached format (as per Annexure – I) or other format containing similar information shall be considered only in-case submitted in Hindi / English Language only. At the time of opening of technical bid, bidders shall have to present original reports/certificate as above. All these SPV Drinking Water Pumps should be successfully operating as on date. **Bidder, whose**

firm is registered as a Pvt. Ltd. / Ltd. / Partnership / Proprietorship firm incorporated and worked in the State of Chhattisgarh shall be treated as Bidder of Chhattisgarh.

- D.** Bidders must have a Positive Net worth **Positive Net worth (Positive Net Worth means “Net value of the Assets minus (-) Net value of liabilities”)** of **Rs. 01 Crore** as on 31st March 2021/31st March 2022. They shall have to submit an **Original Certificate** duly signed by a qualified and registered Chartered Accountant having UDI number as a proof. Produced certificate must tally with the audited balance sheet.
- E.** Bidders should have an aggregate turnover of minimum **Rs. 05 Crores** in last five consecutive financial years i.e., FY 2017-18, 2018-19, 2019-20, FY 2020-21 and FY 2021-22 in SPV Projects. Certified copies of the annual returns and audited balance sheet submitted to the Registrar of Companies/ Income Tax Authorities should be enclosed. For the preceding years, an **original Summarised Sheet** of turnover certified by registered CA must be enclosed. **In case of FY 2021-22 Bidder are allowed to submit CA certified provisional balance sheet, ITR, Turnover and Net-worth Certificate. CREDA reserves the right to call for these documents from such bidders anytime during the validity of the bid.**
- F.** Bidders who are debarred from business by Govt. /Govt. Agency in any state would not be eligible to participate in this bid. A self-declaration should be submitted by the bidder to this effect, failing which bid shall be rejected.
- G.** Even though the bidders meet the above qualifying criteria, they are subject to be disqualified if they have:
- Made misleading or false representations in the forms, statements, affidavits and attachments submitted in proof of the qualification requirements; and/or
 - Record of poor performance such as abandoning the works, not properly completing the contract, inordinate delays in completion litigation history, or financial failures etc; and/or
 - Participated in the previous bidding for the same work and had quoted unreasonably high or low bid prices and could not furnish rational justification for it to CREDA.

2. JOINT VENTURE (JV)/CONSORTIUM–

The terms JV and Consortium may have been used interchangeably in the following section and submissions by the bidder may be made (as applicable).

In case Bidder wishes to participate in as a JV, following conditions are additionally applicable: The term Bidder used hereinafter would therefore apply to both as a single entity and a Consortium/ JV.

- In case of JV/ consortium, one of the partners shall act as Lead member. Both the members of the JV/Consortium shall mandatorily have installation experience of Solar PV Pumping System such as Irrigation Pumps and Drinking Water Pumps. Both the members of the JV/Consortium shall have valid registration in CREDA as SI at the time of submission of the bid.**
- Both the partners should individually fulfil criteria of 1D, 1F and 1G.**
- Both the partners should jointly fulfil eligibility criteria as per clause 1A, 1B, 1C and 1E. In case of minimum experience as per clause 1B, incorporation of the Lead Member in the JV/Consortium shall determine the minimum experience required for the JV/Consortium to qualify.
- A consortium of maximum two (02) members is allowed in this bid including one as lead bidder.
- Member of any Joint Venture/Consortium Firm shall not be permitted to participate either in individual capacity or as a member of any other /Joint Venture Firm in the same tender. Submission or participation in more than one bid will cause disqualification of the entire bid submitted by the bidder.
- All formalities in respect of submission of tender shall be done only in the name of 'Lead Member' and not in the name of Joint Venture firm. However, name & other details of

both the members of Joint Venture/Consortium firm should be clearly mentioned in the bid.

- g) A copy of Memorandum of Understanding (MoU) executed between the members of JV/Consortium shall be submitted along with the tender. The complete details of the members of the Joint Venture Firm, their share and responsibility in the JV/Consortium etc. particularly with reference to financial, technical and other obligations shall be furnished in the MoU.
- h) Once the bid is submitted, the MoU shall not be modified / altered/ terminated during the period of execution including any extension thereafter by CREDA or validity of any letter of award awarded to the said Consortium/Joint Venture Firm. In case, the Bidder fails to observe/comply with this stipulation, the full Security Deposit shall be liable to be forfeited.
- i) A duly notarized agreement on 100 Rupees stamp paper of Joint Venture/Consortium Firm shall be executed between the 'Lead Member' and Consortium/JV Partner. This Agreement should be submitted in original with your bid. **(Annexure - II)**
- j) 'Lead Member' of the JV firm shall be authorized on behalf of Joint Venture firm to deal with CREDA, sign the agreement and enter into contract in respect of the said tender, to receive payment and such activities in respect of the said tender/ contract. All notices/ correspondences with respect to the contract would be sent only to this 'Lead Member' of Joint Venture Firm.
- k) **Copy of the original Memorandum of Understanding (MoU) as stated in clause 2(g) and original copy of agreement as stated in clause 2(i) shall be submitted separately. In absence of any of each shall lead to disqualification from the bid.**
- l) Duration of MoU and JV Agreement shall be valid during the entire execution period/ validity of letter of award and any extension thereafter/currency of the contract including the period of extension, if any.
- m) Any change/modification in constitution of Joint Venture Firm shall not be allowed.
- n) Splitting of EMD/fees among the members of JV/Consortium shall not be permitted.
- o) Members of the Joint Venture Firm shall be jointly and severally liable to CREDA for execution of the project/ Work/ Assignment etc. The JV/Consortium members shall also be liable jointly and severally for the loss, damages caused to the CREDA during the course of execution of any awarded contract or due to non-execution of the contract or part thereof. Governing Laws for Consortium/ Joint Venture Firm: The JV/Consortium Agreement in all respect be governed by and interpreted in accordance with Indian Laws.

All correspondence by CREDA shall be done with the 'Lead member' of JV/Consortium only.

3. BIDDING PROCESS

For ease of accessing the e-bidding website and registration the following is to be done by bidder –

- A. Visit <https://eproc.cgstate.gov.in>
- B. **Prospective bidders are requested to download, read and understand the Manuals present on the website so as to clearly understand the bid submission process.**
- C. The user will be directed to e-bidding page where all information regarding registration is available along with helpline details.
- D. Technical bid and Price Bid shall be submitted online only at <https://eproc.cgstate.gov.in> latest by **05:00 PM on 04-07-2022**. Bids submitted after scheduled time and date shall not be considered.
- E. **Financial bids of all the bidders whose works have been cancelled due to poor performance under the previous tender(s) shall not be opened.**

4. EMD AND TENDER DOCUMENT FEE-

Earnest Money Deposit of Rs. Ten Lakhs submitted in the form of Demand Draft/Pay Order or RTGS/NEFT as mentioned in the NIT vide no. 3978/CREDA/SPVDWP-2/2022 Date: 13-06-2022, EMD submitted in any other form e.g. **Cash/Bank Guarantee/FDR /TDR etc. shall not be accepted.**

5. SUBMISSION OF DOCUMENTS

- a. All the documents including technical and financial Bid should be submitted online on Chhattisgarh e-Procurement portal <https://eproc.cgstate.gov.in> as per the items mentioned in the Checklist on page no.06 in this bid.
- b. Bidders are advised to finish all the bidding portal related activities such as registration, USB certificate/token approval, and payments etc. well in advance so as to avoid last minute difficulties during the bid submission.
- c. Bidders are also advised to make themselves fully aware with the bid submission mechanism to avoid last minute hassles and doubts during bid submission. CREDA shall only entertain genuine technical issues/glitches, provided that the bidder submits evidence regarding the same.
- d. Additionally, the bidders shall also have to submit all the documents, in original hard copy, as required in this bid as per the checklist on page 06 during the opening of technical bid. Bidders shall have to submit only the documents as per the checklist in the following envelopes
 - **Envelope A** – Pre Qualification Documents (original DD should be submitted in this envelope)
 - **Envelope B** – Technical and Financial Qualification Documents.

Note: The documents submitted in original hard copy (offline) before CREDA officials must match with those submitted in the Chhattisgarh e-Procurement portal. Any document other than the uploaded document shall not be considered. CREDA's tender committee will only evaluate the documents submitted on Chhattisgarh e-Procurement portal. In no case the hard copy of documents shall be evaluated, they are only for matching the authenticity of the documents uploaded in the e-bidding portal.

6. SPECIFICATION AMENDMENTS -

- a. The specifications of SPV Modules, Pumps, Pump Controller, Tanks, Structures and Special Chamber including foundation etc. should be as specified in this bid. If any amendments are issued by CREDA in due course of time, in this context, then those shall be applicable under this bid.
- b. CREDA reserves the right to amend or change minor specifications of the entire or any component of SPV pumping system even after the issuance of sanction order as per the site conditions and demand

7. GST & PAN -

Bidder shall have to submit copies of GST registration number and PAN numbers issued by the appropriate authority.

8. THE BID -

- a) The Pre-Qualification, Technical-Financial Qualification Documents and Price Bid, other related documents must be uploaded in the portal i.e. <https://eproc.cgstate.gov.in> **from 13-06-2022, 05:00 PM onwards till 04-07-2022 up to 05:00 PM.**
- b) Nobody is authorized to receive or grant receipt for Bid delivered on behalf of CREDA. **Bid received through any other mode shall not be considered and shall be rejected.**

9. ANALYSIS OF RATE -

Bidder should quote their rates considering variation of site conditions and all other factors in price of different components and keeping the quantum and quality of work in mind.

10. REGISTRATION OF BIDDER -

Bid shall be rejected of all those bidders who are not registered with CREDA at the time of submission of bid.

11. VALIDITY -

Full descriptive particulars and complete specifications should accompany the offer. Offers should be kept open for acceptance for at least **180 days** from the date of opening. After finalization of this Bid the approved rates shall be valid till one year from the date of award; however CREDA

shall have liberty to increase or decrease this validity if needed.

12. TERMS & CONDITIONS -

- a. The terms, conditions and specifications mentioned in Bid document shall be binding on the Bidders and no condition or stipulation contrary to the conditions shall be acceptable. It may please be noted that the Bidders who do not accept terms and conditions stipulated in this Bid documents, their offers shall be liable to be rejected out-rightly without assigning any reason whatsoever.
- b. Each page of Bid document & enclosures shall be signed by the Bidder and seal affixed. All the pages of the documents issued must be submitted along with the technical offer. In case of any corrections / alterations in the Bid, the Bidder should attest the same; otherwise Bids may not be considered.
- c. **Bidders are also instructed to submit their Bids in properly arranged manner (with index, proper paging and with flags on important documents). Incomplete, lose, conditional or improper arranged Bids will not be accepted.**

13. CREDA RESERVES THE RIGHT -

- a. To reject or accept any or all Bids fully or partly without assigning any reason on the grounds considered advantageous to CREDA, whether it is the lowest Bid or not.
- b. To split the quantities against the Bid further for the same items/work. No reason will be assigned by CREDA for this and will be binding on the Bidders.
- c. To increase or decrease of aggregate quantities as per discretion or circumstances.
- d. Due to large quantum of work & limitation of the time period for completion of the work CREDA may, if required, take consent from other eligible Bidders if they agree to work on rates approved by CREDA.
- e. CREDA may undergo agreement with those eligible Bidders who give consent to work on rates standardized by CREDA and may allocate work to them. Rates approved through this Bid may be standardized for all eligible Bids to work in **year 2022-23 & 2023-24** and shall be valid till **31-03-2024**. However CREDA reserves right to curtail or extend this period.
- f. CREDA reserves the right to amend or change minor specifications of the entire or any component of SPV pumping system even after the issuance of sanction order as per the site conditions and demand.

14. COMMUNICATIONS -

- a. All the communication between Bidder and CREDA shall be in writing. Notice sent by Fax or other Electronic means shall be effective on confirmation of the transmission. Notice sent by registered post or speed post shall be effective of delivery or at expiry of normal delivery period as under taken by Postal Service.
- b. Offers through Telegraph/Fax/Emails/Post/Courier or open offers etc. received shall be summarily rejected.

15. BID DOCUMENT FEE AND EARNEST MONEY-

- a. Each Bidder should submit Bid Document Fee and earnest money in the form of Demand Draft/Pay Order or RTGS/NEFT. Each bidder should submit Tender Document Fee and Earnest Money Deposit (EMD) in the form of RTGS/NEFT as single transaction only as mentioned in the TENDER No **102066/CREDA/SPVDWP-2/2022-23 Dated 13-06-2022**.
- b. **Tender Document Fee and EMD submitted in any other form e.g. Cash/Bank Guarantee/FDR/TDR etc. shall not be accepted.**

16. SUBMISSION / DISPLAY OF SAMPLES -

- a. Bidders shall have to display samples individually - these samples can either be manufactured by them or sourced from registered vendors of CREDA for Module, Pump & Controller, Tanks and Chemical Earthing Kit as per tender specifications. However, for display of structures for tank and module, the structures shall have to be fabricated by registered vendors of CREDA for structures. Prospective bidders are allowed to provide Manufacturer Authorization Form (MAF) only from such vendors at the time of sample

display as well as in the technical bid. In addition to above, such bidders shall have to submit Manufacturer Authorization Form (MAF) on Manufacturer's letter head issued for the above tender with respect to all the major components of SPV drinking water pumps. CREDA shall examine the samples and issue Sample Verification certificate to individual bidders. The bidders shall have to mandatorily upload this certificate in addition to manufacturer authorization in the technical bid.

17. PRE-BID QUERIES SUBMISSION IN WRITING -

- a. All suggestions, doubts, confusion, request, queries etc., shall have to be presented to CREDA in writing or through email to credatendercell@gmail.com or before **05:00 PM** on **21-06-2022**. After that any representation in this regard shall not be considered.
- b. The purpose of pre-bid queries is to clarify issues and questions related to this tender that can be raised at that stage. Any amendments in the bid documents which may become necessary as a result of pre-bid queries received shall be part of original Bid document and communicated through corrigendum on CREDA website (www.creda.co.in) and on Chhattisgarh e-Procurement Portal <https://eproc.cgstate.gov.in>.

18. TECHNICAL CRITERIA -

a. TEST REPORTS OF SPV PUMPS

Bidder must have original and valid test report(s) of SPV pump of 1HP solar DC pumping system with 900Wp (min.) solar modules separately in their names. Test report(s) is mandatory for eligibility to participate in the tender. **Bidder will have to provide copy of test reports and/or acknowledgement copy of such test reports of their SPV pump(s) from the solar energy test centre or any other test centre accredited by NABL.**

Bidder shall have to submit original test certificate/reports for the bidding pumps at the time of agreement.

In case, during the execution of the work, if the bidder/SI wishes to change the make of major components (with the same specifications in this bid) such as Solar Modules and/or Pump (and/or Pump controller), then such bidder/SI shall have to submit the test report of the entire Solar Drinking Water Pumping System with this newly proposed configuration to CREDA and only after due approval from CREDA can the bidder install such system in the field. CREDA reserves the right to allow or disapprove such new configurations as and when they are brought to CREDA's notice by the bidders/SIs.

- b. The Bidder should have sufficient technically qualified and well-experienced manpower for execution of the project and after sales service of the systems.
- c. Financial bid of those Tenderers will not be opened who have not submitted valid test reports.

19. FORFEITURE OF EARNEST MONEY DEPOSIT -

It should be clearly understood that in the event of Bidder failing to enter into the agreement in the prescribed format on their quoted rates and also fails to execute assigned works under any Scheme of CREDA, within stipulated time, if he is so communicated within the validity period of the offer, the full amount of earnest money will be forfeited and Bidder shall be debarred from future business with CREDA including future participation in all bids up to three years. CREDA's decision in this regard will be final and binding on the Bidders.

20. PRICE OF SUPPLY OF SOLAR DRINKING WATER PUMPING SYSTEMS WITH INSTALLATION, COMMISSIONING AND TESTING OF SOLAR PUMP SET -

- a. The Price quoted for all models of each category solar Drinking Water pumping system with installation, commissioning and testing, of SPV Modules, DC Submersible pumps, Structure, Tanks, HDPE Pipe (under bore), GI Pipe (above bore), Rope wire, Clamp, Special Chamber, Bore cap, Lightening arrester, 02-numbers Earthing, Civil works and all other required BOS like Cables, Suitable Nut Bolts etc. with 5 years system Warrantee and CMC. The GST shall be paid extra as per prevailing rate (the GST regulation notification no. 24/2018- Central tax (Rate) dated 31-12-2018). The prices shall be filled exactly as per e-Price Bid enclosed.

- b. Any change in GST shall become applicable during the period of contract.
- c. In this regard if there is any change in the composition ratio of goods and services by any Authority/ Courts, same shall be applicable.

21. ENGINEERING DOCUMENT -

Bidders will have to submit Engineering Documents with technical details, drawings, Specifications of components and make etc. to CREDA for approval, as and when asked by CREDA. Works may only be started out only after approval of the Engineering Document and their samples.

22. COMPREHENSIVE MAINTENANCE CONTRACT (CMC) OF SOLAR DRINKING WATER PUMPING SYSTEM -

- a. CMC may be entrusted to the concerned bidders on the approved lowest rate of the bid. During CMC the bidders should have spares of every component ready in their service centre or CREDA District Office so that no system should be kept non-functional for more than 05 days, failing which CREDA will rectify/replace the components/system at the risk and cost of the Bidder. The period of CMC will start from the date of commissioning of the systems for next five years.
- b. Awarding the work of CMC to bidders is totally at the discretion of CREDA. Also if the bidder is awarded with CMC work, then they must have to submit quarterly monitoring report of the system working satisfactorily duly authenticated by SE of concerned Zonal Office of CREDA.

23. SAMPLES -

If required, samples of the components shall have to be submitted to the CREDA in prescribed manner after receipt of notification of CREDA for testing, verification purpose without any additional cost.

24. INSPECTIONS -

CREDA reserves right to inspect the material at Godowns / Temporary Stores before dispatch and also at works sites.

25. MANDATORY DEDUCTION -

This deduction is the one percent of cost of installation only and it is mandatory to deposit to concerned department as per state govt. notification. So while quoting the financial bid, keep this in mind

26. CORRUPT OR FRAUDULENT PRACTICES-

- a. The CREDA requires the Bidder/SI to strictly observe the laws against fraud and corruption in force in India, namely, Prevention of Corruption Act, 1988.
- b. It is required that each Bidder/SI (including their respective officers, employees and sub-contractors) adhere to the highest ethical standards, and report to the Government/ Department all suspected acts of fraud or corruption or coercion or collusion of which it has knowledge or become aware, during the tendering process and throughout the negotiation or award of a contract

27. MANDATORY EMPLOYMENT-

Qualified diploma engineer with minimum wage rupees 15,000/- per month for works above Rs. 20 Lacs and Qualified graduate engineer with minimum wage rupees 25,000/- per month for works above Rs. 01 crore shall have to be deployed by the System Integrator.
(As per CG Govt.'s order no. F7-17/2020/1-6 Dated 02.12.2020).

28. TAX OBLIGATIONS -

CREDA shall deduct TDS for Income Tax, applicable cess on Civil Work etc. under various acts and deposited with the appropriate authority. Costs and taxes before execution of agreement with CREDA so as to ensure tax deposition as per Government Rules accordingly.

29. JURISDICTION OF THE COURT -

Any dispute arising out of the contract shall be subject to the jurisdiction of Hon'ble High Court of Chhattisgarh.

SECTION - 2
GENERAL CONDITIONS OF CONTRACT

1. DEFINITIONS -

In writing General Conditions of Contract, the specifications and bill of quantity, the following words shall have the meanings hereby indicated, unless there is something in the subject matter or content inconsistent with the subject.

- **CREDA** shall mean the Chhattisgarh State Renewable Energy Development Agency represented through the Chief Engineer / Superintending Engineer.
- **Work** shall mean any work entrusted to the Bidder as mentioned in the scope of work and Work Order.
- The "**Engineer-in-charge**" shall mean the Engineer or Engineers authorized by CREDA for the purpose of this contract. Inspecting Authority shall mean any Engineering person or personnel authorized by CREDA to supervise and inspect the erection of the SPV Drinking Water Pump.
- "**The Eligible SI/Bidder**" shall mean the Bidder awarded with the contract or their successors and permitted assigns. Contract Price shall mean the sum named in or calculated in accordance with the provisions of the contract as the contract price. General Conditions shall mean the General conditions of Contract.
- "**Specifications**" shall mean the specifications annexed to these General Conditions of contract and shall include the schedules and drawings attached thereto or issued to the eligible SI from time to time, as well as all samples and pattern, if any,
- "**Month**" shall mean calendar month. "Writing" shall include any manuscript, typewritten, printed or other statement reproduced in any visible form whether under seal or written by hand.
- **Bidder of Chhattisgarh State:** Bidder registered as a Pvt. Ltd. / Ltd. / Partnership / Proprietorship firm incorporated / registered in the State of Chhattisgarh shall be treated as Bidder of Chhattisgarh

2. PROOF OF MANUFACTURER -

Those bidders who are also manufacturers of an important component of SPV Drinking Water Pump such as SPV Modules, Submersible Pump, controllers or Structures of SPV Drinking Water Pumps shall have to submit proof of their factory, SSI Registration and list of Machineries and Equipment.

3. CONTRACT DOCUMENT -

The term "Contract" shall mean and include the General conditions, specifications, schedules, drawings and Work Orders etc., issued against the contract schedule of price or their final general conditions, any special conditions applying to the particular contract specification and drawings and agreement to be entered into. Terms and conditions not herein defined shall have the same meaning as are assigned to them in the Indian contract Act or any other Act in vogue or by any person of common knowledge and prudence.

4. MANNER OF EXECUTION -

4.A. Execution of work shall be carried out under Government Mode Scheme of CREDA in an approved manner as outlined in the technical specifications or where not outlined, in accordance with desired Specifications laid down by CREDA, to the reasonable satisfaction of the Engineer.

4.B. Successful Bidder / Bidder here-in-after called the SI (System Integrator).

- a. After receipt of LOI from CREDA the eligible SI shall conduct a detailed survey of site and submit site details and feasibility report in prescribed format (Form A,B&C) after due verification with signatures of Sarpanch or Sachiv of concerned Gram Panchayat and concerned agency officials and signatures of AE/EE/Officer-In-Charge of Concerned Department. All necessary documents and survey details shall have to be submitted in

- concerned District Office of CREDA in prescribed manner.
- b. SI shall also have to submit layout plan duly consented and signed jointly by **Sarpanch/Sachiv of concerned Gram Panchayat** and concerned agency along with signatures of AE/EE/Officer-In-Charge of concerned department.
 - c. Engineer-in-Charge of District Office of CREDA shall examine these reports. After his satisfaction will forward details with his recommendations to EE of Concerned Regional Office of CREDA. Engineer-in-charge may visit the site if he/she is not satisfied with survey report.
 - d. In case Engineer-in-Charge of District Office of CREDA finds the site not suitable for installation of SPV DRINKING WATER PUMP he/she will inform concerned beneficiary organisation / department accordingly and request for alternative site /necessary action.
 - e. Executive Engineer of concerned Regional Office, CREDA will decide the technical feasibility and layout plan of site. Executive Engineer may visit the site if he/she is not satisfied with survey report.
 - f. After satisfaction, Executive Engineer will forward the site clearance report with technical feasibility to Head Office, CREDA for issuance of work orders.
 - g. Head Office, CREDA will be final authority to approve or reject site finalisation recommended by Regional Offices.
 - h. Concerned CE of CREDA, after his satisfaction, shall issue the work order to eligible SI for installation of SPV Drinking Water Pump.
 - i. Work order will be given to the chosen System Integrator only after execution of the agreement with CREDA.
 - j. After issuance of LOI/Work Order(s), Executive Engineer of concerned Regional Office CREDA will finally approve site layout in writing in prescribed format.
 - k. The SI shall start work within **15 days** after the date of approval of site layout.
- 4.C.** All the materials required for the installation of SPV Drinking Water Pumps as per Work Order issued shall be kept at site in the custody of the SI. CREDA shall not be responsible for any loss or damage of any material during the installation.
- 4.D.** All the electrical works should be done as per various provisions of Indian Electricity Act. The persons engaged for carrying out electrical works should have a valid B-class license or above issued by licensing board of Chhattisgarh.
- 4.E.** After work is started, CREDA will carry out inspections at various stages and Engineer-in-Charge of District Office of CREDA shall record the measurements in the Measurement Book issued for the said site.
- 4.F.** After installation, joint inspection will be done in presence of beneficiary department, SI and CREDA and after successful commissioning of SPV Drinking Water Pumps and its approval from CREDA, a JCC will be signed and the necessary documents shall be forwarded for payments as per the guidelines and procedures of CREDA.

5. VARIATIONS, ADDITIONS & OMISSIONS -

CREDA shall have the right to alter, amend, omit, split or otherwise vary the quantum of work, by notice in writing to the SI. The eligible SI shall carry out such variation in accordance with the rates specified in the contract so far as they may apply and where such rates are not available; those will be mutually agreed between CREDA and the eligible SI.

6. INSPECTION -

- a. The Engineer-in-Charge or his authorized representative(s) shall be entitled at all reasonable times to inspect and supervise and test during installation and commissioning. Such inspection will not relieve the eligible SI from their obligations under this contract.
- b. Material can be inspected before dispatch or in transit by the authorized representatives of CREDA at the factory / godown at the cost of the eligible SI, if desired by CREDA.

- c. CREDA will undertake real time performance and quality test of randomly selected solar pumping system and components during the course of execution as per the specifications and guidelines laid by CREDA to ensure quality and performance of pump and components.

7. COMPLETION OF WORK -

Time being the essence of contract, the installation of the SPV Drinking Water Pumps shall be completed within the time schedule prescribed in the Work Order.

8. ELIGIBLE SYSTEM INTEGRATOR'S DEFAULT LIABILITY -

CREDA, may, by written notice of default to the eligible SI, terminate the contract in circumstances detailed hereunder –

- (a) If in the opinion of the CREDA, the eligible SI fails to complete the work within the time specified in the Work Order or within the period for which extension has been granted by CREDA to the eligible SI.
- (b) If in the opinion of CREDA, the eligible SI fails to comply with any of the provisions of this contract.
- (c) In the event of CREDA terminating the contract in whole or in part as provided in paragraph (a) above, CREDA reserves the right to engage another eligible SI or agency upon such terms and in such a manner as it may deem appropriate and the eligible SI shall be liable to CREDA for any additional costs or any losses caused to CREDA as may be required for the completion of erection of the SPV Drinking Water Pumps and or for penalty as defined under this Bid document until such reasonable time as may be required for the final completion of the work. CREDA may debar such a defaulter SI for up to three years from taking participation in taking part in all activities of CREDA.
- (d) In the event CREDA does not terminate the contract as provided in paragraph (a) the eligible SI shall continue performance of the contract, in which case he shall be liable to CREDA for penalty for delay as set out in clause 16 until the work is completed.

9. FORCE MAJEURE -

The eligible SI shall not be liable for any penalty for delay or for failure to perform the contract for reasons of FORCE MAJEURE such as of God, acts of public, enemy, LWE problems, acts of government, cyclone, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes provided that if SI shall submit delay notice with appropriate cause of delay to the CREDA in writing within **15 days** of force majeure. CREDA shall verify the facts and may grant such extension as facts justify. Delay in supply of any accessories of Solar Pumps etc. by the related vendors, to whom the Bidder has placed order, shall also not be treated as force majeure.

10. REJECTION OF WORKS -

In the event of any of the material supplied/work done by the eligible SI is found defective in material or workman ship or otherwise not in conformity with the requirements of this contract specifications, CREDA shall either reject the material and/or work and advise the eligible SI to rectify the same. **CREDA may impose penalty for such rejection up to the 200% cost of the entire system. Habitual/repeated offenders shall be black listed/debarred to participate in the any Bid/ Activity of CREDA till further orders.** The eligible SI on receipt of such notices shall rectify or replace the defective material and rectify the work free of cost. If the eligible SI fails to do so CREDA may -

- a) At its option replace or rectify such defective materials and/or work and recover the extra cost so involved from the eligible SI plus **15%** service charges of the cost of such rectification, from the eligible SI and/ or terminate the contract for balance work/ supplies with enforcement of penalty **as stated above.**
- b) Defective materials/workmanship will not be accepted under any conditions and shall be rejected outright without compensation. The eligible SI shall be liable for any loss/damage sustained by CREDA due to defective work **with enforcement of penalty as stated above.**

11. EXTENSION OF THE TIME -

If the completion of installation is delayed due to any reason beyond the control of the eligible SI, the eligible SI shall, without delay, give notice to the CREDA in writing of his claim for an extension of time. CREDA on receipt of such notice may or may not agree to extend the

contract/delivery date of the SPV Drinking Water Pumping System as may be reasonable but without prejudice to other terms and conditions of the contract.

Chief Executive Officer, CREDA has full right for unconditional time extension.

12. MAKES OF EQUIPMENT TO BE USED IN THE WORK -

- a. The Solar Modules, Solar Pumps, Controller, Water Tank & Other BOS should be as per BIS/IEC/CE standards.
- b. The eligible SI has to ensure that equipment's are as per Technical Requirements of guidelines of CREDA as complied with. The material/works for which CREDA/MNRE or BIS or ISI specification is not available, engineer-in-charge of the works will examine and approve the material/works, preferably of all makes on which CREDA has report of satisfactory performance.
- c. Manufacturer Authorization Form (MAF) on Manufacturer's Letter head of Solar Pump /Module /Pump controller/ Tank/ Structure which the bidder is intending to use in the installation shall be submitted at the time of sample submission and the same shall be submitted with technical bid also.
- d. The SI shall ensure that all the major components of the SPV Drinking Water Pumps such as Solar Modules, Solar Pump, Pump Controller, Structure, and Water Tank are procured from registered vendors of CREDA of respective components.
- e. SI should submit warrantee agreement of **at least 5 years** for major components i.e. SPV Drinking Water pumps, VFD/ Controller, Water Tank, structures, and special chamber and at least 10 years' warrantee for SPV Modules with manufacturer or distributors duly certified by the manufacturer before installation of the SPV Drinking Water pumps, for any manufacturing defects or bad workmanship.

13. WARRANTEE PERIOD AND POST INSTALLATION SERVICES -

- A. The work done/material supplied by the eligible SI should be warranted for satisfactory operation and against any defect in material and workmanship including Pumps, Controllers, Tank and Structures and other balance of equipment's, at least for a period of 5 (five) years, from the date of commissioning of the SPV Drinking Water Pumps including other works as per scope of work.
- B. Warrantee on SPV Modules shall be for 10 (ten) years from the date of commissioning of the SPV Drinking Water Pumps must be warranted for their output peak watt capacity, which should not be less than 90% at the end of 10 years and not less than 80% at the end of 25 years.
- C. The above warrantee certificates shall be furnished to the CREDA for approval. Any defect noticed during this period should be rectified by the supplier free of cost upon written notice from CREDA provided such defects may be due to bad workmanship or bad materials used.
- D. The warrantee period shall be extended by the period during which the plant remains non-operative due to reasons within control of the eligible SIs.
- E. This warrantee must be an unconditional onsite warrantee and the eligible SI will have to replace the defective material within 5 days positively from the date of information given to him by CREDA.
- F. Care should necessarily be taken to make the SPV Drinking Water Pumps operational, once the reporting of the fault/non-operational status is done, within 5 days. If the SPV Drinking Water Pumps is not made operational within 5 days CREDA may rectify the same at the risk and cost of SI and the warrantee period shall be extended accordingly for delayed period.
- G. System Integrators shall have to establish their service stations in the allocated area and shall have to keep sufficient quantity of spares and man power to ensure proper service network for taking care of smooth functioning of SPV Drinking Water Pumps installed by them. SI shall have to give a toll free number to register complaints.

14. TERMS OF PAYMENT –

- A. 95% of the cost of the work order (including GST) after successful commissioning of the SPV pump at the site and submission of JCC in hard copy. **The release of this instalment is subject to mandatory submission of original and valid ‘lot wise’ water tank test report and water tank manufacturing license/certificate with ISI certification.**
- B. Balance 5% of the eligible payment excluding GST shall be retained by CREDA as Security Deposit for a period of 60 months from date of commissioning.

15. RATES FOR ADDITIONAL WORKS NOT IN SCHEDULE OF TENDER-

If during the course of execution, where it is found necessary that certain item/items of work not provided in the Tender such as “Getting Rocks under the ground during foundation work” at the site required to be carried out then, on the basis of Schedule of Rate (SOR) additional payment extra work shall be done by CREDA subject to recommendation of District In-charge and Executive Engineer of the concerned Regional Office.

16. PENALTY FOR DELAY IN COMPLETION OF CONTRACT -

- a. If the eligible SI fails to complete the assigned work within the schedule time specified in the Work Order or any extension granted there to, CREDA will recover from the SI as penalty a sum of up to **One per cent (1%)** of the system price excluding GST for every delayed system per month. For this purpose, the date of taking over shall be reckoned as the date of completion. The total penalty shall not exceed **5% (Five Per cent)** of the cost.
- b. Review of the progress of installation of SPV Drinking Water pump allocated to SIs shall be done time to time by CREDA and if the progress of installation is found unsatisfactory, the allocation of entire remaining uninstalled pumps or their part of can be re-allocated to other SI as per discretion of CREDA.

17. SECURITY DEPOSIT (SD)–

- a. The Earnest Money shall be retained by CREDA up to the duration of validity of tender, after agreement is done to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to therein and to carry out such deviations as may be required by CREDA.
- b. Beside this **5%** of the cost shall also be retained as SD during the five years of warrantee period. No interest shall be payable on the SD.
- c. Period for which EMD and SD are to be retained may be extended in case the warrantee period is extended due to non-performance of the system.
- d. All costs of damages and delays for which the eligible SI is liable to the CREDA will be deducted from any money due to the eligible SI including the security deposit of any project under CREDA.

18. INSURANCE -

The eligible SI shall arrange insurance coverage for the materials and SPV Drinking Water Pumping system at his/ beneficiary’s custody for the work under execution and successful commissioning and subsequent handover to the beneficiary. The eligible SI shall take up insurance or such other measures for the manpower so as to cover the claim for damage / accident under Workmen's Compensation Act and other applicable State/Central laws. CREDA shall not bear any responsibility on this account.

19. PENALTY DUE FROM THE ELIGIBLE SI -

All costs of damages and delays for which the eligible SI is liable to the CREDA will be deducted from any money due to the eligible SI including the security deposit and other pending payments of any project under CREDA.

20. RESPONSIBILITY OF ELIGIBLE SI -

Notwithstanding anything mentioned in the specifications of subsequent approval or acceptance of the SPV Drinking Water Pump by CREDA, if any, the ultimate responsibility for satisfactory performance of the entrusted work shall rest with the eligible SI. If in any

case the eligible SI does not complete the work as per the Work Orders issued to them then CREDA may take over the task & complete the project at the risk and cost of eligible SI.

21. RESPONSIBILITY TO RECTIFY THE LOSS AND DAMAGE -

If any loss or damage occurs to the work or any part thereof or materials/plant/equipment's for incorporation therein the period for which the eligible SI is responsible for the cause thereof or from any cause whatsoever, the eligible SI shall at his own cost rectify/replace such loss or damage, so that the permanent work confirms in every respect with the provision of the contract to the satisfaction of the Engineer. The eligible SI shall also be liable for any loss or damage to the work/equipment's occasioned by him in course of any operation carried out to him during performing the contract.

22. RESPONSIBILITY TOWARDS THE WORKMAN OR OUTSIDERS –

- A. The eligible SI shall have to take insurance coverage from any authorized Insurance Company against Workmen compensation due under Workmen Compensation Act and submit copy of the insurance document before issuance of Work Order.**
- B. The eligible SI shall ensure all safety measures during execution and repairs of the work. CREDA, will, in no case be responsible for any accident fatal or non-fatal, caused to any workman or outsider in course of transport or execution or repairs of work.**
- C. All the expenditure including treatment or compensation will be entirely borne by the eligible SIs. The eligible SI shall also be responsible for any claims of the workers including, labour payments, PF, Accidental Insurance, Gratuity, ESI & other legal obligations.**
- D. CREDA shall have all rights to deduct such claims of payments from SI in case of complaints of such violations.**

23. NON-ASSIGNMENTS -

- a. The eligible bidder shall not assign or transfer or sublet the Work Orders issued as per this contract or any part thereof without the prior approval of CREDA. This can be allowed only as per policy of CREDA.
- b. If eligible bidder transfer/assign/sublet full or any part of work allocated to him without prior permission from CREDA in writing to any third party shall be liable to debar/black listed from any Bid/Activity of CREDA till further orders.

24. CERTIFICATES NOT TO AFFECT RIGHTS OF CREDA -

The issuance of any certificate by CREDA or any extension of time granted by CREDA shall not prejudice the rights of CREDA in terms of the contract nor shall they relieve the eligible SI of his obligations for due performance of the contract.

25. SETTLEMENT OF DISPUTES THROUGH ARBITRATION -

- a. Except as otherwise specifically provided in the contract, all disputes concerning questions of fact arising under the contract shall be decided by the Chief Executive Officer (CEO), CREDA provided a written appeal by the eligible SI is made to CREDA. The decision of the CEO, CREDA shall be final and binding to the all concerns.
- b. Any dispute or difference including those considered as such by only of the parties arising out of or in connection with the contract shall be to the extent possible be settled amicably between the parties. If amicable settlement cannot be reached then all disputed issues shall be settled by arbitration.

26. LAWS GOVERNING CONTRACT -

The contract shall be constituted according to and subject to the Laws of India and jurisdiction of the High Court of Bilaspur, Chhattisgarh.

27. LANGUAGE AND MEASURES -

All documents pertaining to the Contract including specifications, schedules, notice correspondences, operating and maintenance instructions, drawings or any other writings shall be written in English / Hindi language. The metric system of measurement shall be used in this contract.

28. CORRESPONDENCE -

- a. Any notice to the eligible SI under the terms of the contract shall be served by registered mail to the registered office of the eligible SI or by hand to the authorized local representative of the eligible SI and copy by post to the eligible SI's principal place of business.
- b. Any notice to CREDA shall be served to the Chief Engineer, CREDA Raipur in the same manner.

29. SECRECY -

The eligible SI shall treat the details of the specifications and other documents as private and confidential and they shall not be reproduced without written authorization from CREDA.

30. AGREEMENT -

The successful eligible SI shall have to enter into an agreement with the CREDA in the approved contract agreement form within **10 days** of the receipt of call from CREDA.

31. DECLARATION OF CONFLICT OF INTEREST –

- a. Any regular employee working or worked on basis of contract or through placement agency cannot work directly or indirectly in any scheme of CREDA. If such a person is found working with any SI or through sublet then, such SI shall be blacklisted for three years.
- b. The bidder shall not be permitted to Bid for the work if the section of HO CREDA (responsible for implementation of work) in which his near relative is posted. Furthermore, the successful bidder shall not be given work in the district in which his near relative is posted. The bidder shall also intimate the names of his near relatives working in CREDA. Bidder shall also intimate the name of persons who are working with him in any capacity and who are near relatives to any employee in CREDA. Any breach of this condition by SI would render himself liable to be blacklisted for three years and removed from approved list of SIs in CREDA.

Note:- By the term near relatives are meant Wife, Husband, Parents and son, Brother, Sister, Brother-in-law, Father-in-law, and Mother-in-law etc.

- c. Bidder must produce an affidavit (Annexure – III) stating the names of retired/removed employee of CREDA (if any) in his employment who retired /removed within last two years, if in case there is no such person in his employment, his affidavit should clearly state this fact. This affidavit is mandatory, if it is not produced along with the bid, the bid shall be rejected.

32. CAPACITY ASSESMENT OF THE BIDDER –

The SI's maximum capacity for installation of SPV Drinking Water Pumps (in numbers) under this bid shall be assessed as –

Numbers of SPV Drinking Water Pumps (of 1 HP capacity; 4.5m staging and 5000 Litres (or above) Storage) installed in years FY 2017-18, 2018-19, 2019-20, 2020-21 and 2021-22. -- a

Numbers of SPV Drinking Water Pumps (of 1 HP capacity; 6m staging and 5000 Litres Storage) Installed in year FY 2017-18, 2018-19, 2019-20, 2020-21 and 2021-22. -- b

Numbers of SPV Drinking Water Pumps (of 1 HP capacity; 6m staging (or above) and 10000 Litres Storage) Installed in year FY 2017-18, 2018-19, 2019-20, 2020-21 and 2021-22. -- c

Assessed maximum capacity for installation of pumps in this bid =a + 2b +3c

Installation carried out in Chhattisgarh the above determined assessed capacity can be further doubled.

33. BID EVALUATION CRITERIA -

- a. Offers of only those parties, who are found qualified based on Eligibility Criteria and Technical Bid, will be taken into further consideration and financial bid of only those parties who are qualifying the criteria of Technical Bid will be opened.
- b. Other things being equal, the lowest rates shall normally be preferred, but CREDA shall have rights and liberty to amend/lower the rates.
- c. **Conditional Bids shall not be accepted.**

- d. CREDA shall have rights and liberty to call any /other parties to work on approved rates as and when required in accordance with quantum of work and scheduled time limits for completion of targets.

34. EVALUTION OF PRICE BID -

Price bid shall be evaluated on the basis of quoted rates. L1 rate i.e. lowest rate of total of Supply and Installation & Commissioning cost (Total of item under column A and column B of e-price Bid) of the SPV Pumping system shall be considered. However, CREDA shall have discretionary power to amend/lower the rates.

35. ALLOCATION OF TARGETS AND AREA OF WORK -

- a. Minimum 25 or maximum 100 pumps will be allotted to L1 Bidder in any or all categories. However, these quantities can be further changed as per discretion of CREDA. Allocation to L1 bidder shall be in proportion to the targets given by agencies and progress of the previously assigned works.
- b. **Balance unallocated quantity shall be distributed among all eligible bidders according to their assessed capacity, work in hand/pending works and performance.**
- c. L1 Bidders will also have to work in LWE districts.
- d. **L1 Bidder shall be given allocations for such pumps in the category he stands L1 up to target limit / assessed capacity whichever is lower.**
- e. **However the increase or decrease in these allocations shall be decided at sole discretion of CREDA, which shall be final, binding and conclusive on the bidders.**
- f. Allocation can be further extended or curtailed as per discretion of CREDA, in interest of expeditious work completion.
- g. CREDA reserves all rights for allocation of works and the decision of CEO CREDA shall be final and binding.
- h. **Review of the progress of installation of Drinking Water pumps allocated to SIs shall be done time to time by CREDA and if the progress of installation is found unsatisfactory, the allocation of entire remaining uninstalled pumps or their part of can be re-allocated to other SI as per discretion of CREDA.**

36. BID REJECTION -

If financial bid of a bidder has been opened on the basis of technical bid of a bidder which has been determined to be substantially responsive to the bidding document and in latter stage it is found that bidder does not meet the eligibility criteria or the technical bid is found substantially non-responsive, CREDA reserves rights to reject such bid of a bidder any time.

We (on behalf of Eligible SI/Bidder) have read all the above stated details & accept to comply with it in total.

(Name, Signature & Seal of the Bidder)

**SECTION-3
SCOPE OF WORK**

The scope of work in brief will be as follows-

1. Survey of Sites, design, supply, installation & commissioning of SPV Drinking Water Pumps as per design and specifications approved by CREDA and concerned agency, on turnkey basis. Five years onsite unconditional warrantee for manufacturing defects shall be required for each of the system after successful commissioning and proper handing over.
2. The scope of work shall also include the following:
 - 2.1 Survey of Sites, testing of report of yield of bore provided by agencies, submission of site clearance certificate where the SPV Drinking Water Pump is to be installed. A layout plan of the site should also be submitted, clearly indicating the identified location for installation of SPV Drinking Water Pump.
 - 2.2 Work order shall be issued only after receipt of satisfactory site clearance reports suitable for system installation.
 - 2.3 SI shall furnish all necessary information to beneficiary for SPV Drinking Water Pump Warrantee, DOs & Don'ts etc. so as to avoid further misunderstandings and disputes.
 - 2.4 Detailed planning of time bound smooth execution of project.
 - 2.5 Design, supply, installation & commissioning of SPV Drinking Water Pumps of required capacity as per design and specifications approved by CREDA, on turnkey basis.
 - 2.6 The work includes supply and installation of a special chamber as per drawing for installation of existing hand pump with new submersible pump but excludes supply and installation of new hand pump. In case a new hand pump is required at site where hand pump was not installed earlier the same may be ordered separately as per approved rates of concerned agency.
 - 2.7 Providing User Manuals and Warrantee Cards to beneficiary / CREDA.
 - 2.8 SI shall have to submit JCCs within 60 days of Installation and Commissioning of SPV Drinking Water Pumps in District Office of CREDA.
 - 2.9 Onsite unconditional warrantee for manufacturing defects for Five years faultless operation, assure inventory for maintenance.
 - 2.10 SI must ensure safety and insurance against risk liability of all personnel associated during installation and repairs of the system.
 - 2.11 Training of at least two persons nominated by user, on the various aspects of operation and maintenance of the offered system after commissioning of the system.
 - 2.12 The eligible SI shall maintain sufficient inventory of the spares to ensure that the system can be made functional within 5 days from the communication of breakdown of the system during the warrantee period.
 - 2.13 The eligible SI shall run the system on trial basis and shall closely monitor the performance of the system before handing over the system, so that the assured water discharge can be estimated for monitoring of the performance of the system. CREDA shall examine the water discharge and ascertain if the discharge is adequate with reference to the capacity of the SPV Drinking Water Pump.
 - 2.14 The eligible SI shall have to monitor the performance of the system before its handing over to the agency, so that the desired water output can be assured.
 - 2.15 Performance Guarantee Test: Successful performance guarantee test to demonstrate the rated capacity of SPV Drinking Water Pump as per CREDA's norms shall have to be conducted by SI in presence of representatives of CREDA, if required.
 - 2.16 System Integrators shall have to establish their service stations in the allocated area and shall have to keep sufficient quantity of spares and man power to ensure proper service network for taking care of smooth functioning of SPV Drinking Water Pump installed by them. SI shall have to give a toll free number to register complaints.
 - 2.17 SI should have to install only those pumps that can be installed even in the bore well of 4 inch (100mm) Dia.
 - 2.18 RMS, Data Logger and Surge Protection Device (SPD) is mandatory.
 - 2.19 For the installation of Solar Drinking Water Pumps Bidder should have to follow Quality Assurance and Quality Control (QA-QC) [Annexure – IV].
 - 2.20 For Quality Assurance of Civil structure work in Solar Drinking Water Pump Systems, it is mandatory to submit original Cube Test report from Govt. Approved test centre.
 - 2.21 The system integrator must ensure the cleaning of water tank at the time of commissioning of

the system thoroughly from inside and must lock the cover properly to keep the water tank secure from external agents.

- 2.22 The system shall have to be installed by trained manpower/contractor from a recognised training centre as per guidelines of CREDA. The training certificate can be checked by the officials of CREDA at the time of visit/inspection, if required.
- 2.23 A separate sign board of GI sheet or Aluminium Sheet of thickness 1.2 mm of size 4 feet x 6 feet must be affixed with proper clamping in the structure railing. The matter to be printed on the sign board shall have to be approved by CREDA HO before installation.
- 2.24 Bidder shall also have to construct hand stand post platform to soakage pit to ensure cleanliness around solar drinking water pump.
- 2.25 Bidder has submitted original and valid test report of the pump, tensile test report of the steel used in structure & BIS test report for Water tank.
- 2.26 During installation at the site, the civil work for foundation must be done using Mixture machine & vibrator.

SECTION - 4

SPECIFICATION FOR SOLAR PHOTOVOLTAIC DRINKING WATER PUMPING SYSTEMS

1. SCOPE -

This specification covers design qualifications and performance specifications for Solar Photo Voltaic (SPV) Water Pumping Systems to be installed on a suitable bore-well.

2. TERMINOLOGY -

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

- a) **Static Water Depth**— It is the depth of water level below the ground level when the pump is not in operation.
- b) **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.
- c) **Submergence**— It is the minimum height of water level after drawdown above the pump suction casing.
- d) **Manometric Suction Lift**— Manometric suction lift is the vacuum gauge/suction manometer reading in meter of water column when pump operates at suction lift.
- e) **Static Suction Lift**— Static suction lift/head is the vertical distance between sump water level and centre of pump inlet.
- f) **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 / m² on the surface of SPV array (i.e. coplanar with the SPV Modules).
- g) **Wire to Water Efficiency**— It is the combined system efficiency of SPV Converter/ Controller with Inbuilt MPPT mechanism, Pump set and piping.
- h) **SPV Controller**— Pump Controller converts the DC voltage of the SPV array into a suitable DC power and may also include equipment for MPPT, remote monitoring, and protection devices. They may be inbuilt or external.
- i) **Maximum Power Point Tracker (MPPT)**— MPPT is an algorithm that is included in the pumpcontroller 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 -

A. General -

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/ controller. A SPV Water Pumping system typically consists of *Pump Set* Pump set may be of submersible type.

B. MOTOR & CONTROLLER -

The motor & controller of the pump set may be of the following types -.

- i) **DC Motor** PMSM/BLDC/SRM (with brush or brushless)
 - The motor to be used shall be operated in DC voltage range of 30 to 300 V_{DC}.
 - Overall Efficiency of Submersible pump set should be minimum 50%.
- ii) Provision for remote monitoring (RMS/Data Logger and SPD) for the pumps is mandatory.

It 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 at logged at an interval of 10 minutes
 - RMS must have a back up to store the data locally.

C. SOLAR MODULE/ PHOTO VOLTAIC (SPV) ARRAY -

1. **SPV** arrays contain specified number of same capacity, type and specification modules connected in series to obtain the required voltage or current output. The SPV water pumping system should be operated with a PV array minimum capacity should be **900Wp (Watts peak)**, measured under Standard Test Conditions (STC). Sufficient number of modules in series 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 300 Watts peak with 72 full cell, with adequate provision for measurement tolerances. Use of PV modules with higher power output is preferred.
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. Modules must qualify to IS/IEC 61730 Part I and II for safety qualification testing.
4. The minimum module efficiency should be minimum 15 percent and fill factor shall be more than 70 percent.
5. Modules must qualify to IEC TS 62804-1:2015 for the detection of potential-induced e-gradation - Part 1: Crystalline silicon (Mandatory in case the SPV array voltage is more than 600 V_{DC})
6. The name plate shall conform the IS 14286/IEC61215 must have clear and indelible marking laminated inside the glass as per IS/IEC61730-I, Clause 11
 Name, monogram or symbol of manufacturer
 Model Number
 Unique Serial Number
 Nominal wattage +/- 2%
 Year and country of origin
 Brand name if applicable
7. Module to Module wattage mismatch in the SPV array mismatch shall be within (±) 3 percent.
8. Variation in overall SPV array wattage from the specified wattages shall be within zero percent to +10 percent.
9. The PV Modules must be warranted for output wattage, which should not be less than 90% of the rated wattage at the end of 10 years and 80% of the rated wattage at the end of 25 years.
10. The panel should be supplied with CREDA Logo (Annexure - V) in the form of sticker on the back of SPV panel or duly laminated inside the glass of solar module with the remark "Manufactured for CREDA". Inter connections of solar modules should be through good quality male female joint.
11. **IDENTIFICATION AND TRACEABILITY –**
 Each PV module must use a RF identification tag (RFID), which must contain the following information:
 - (i) Name of the manufacturer of PV Module
 - (ii) Name of the Manufacturer of Solar cells
 - (iii) Month and year of the manufacture (separately for solar cell and module)

- (iv) Country of origin (separately for solar cells and module)
- (v) I-V curve for the module
- (vi) Peak Wattage, I_m , V_m and FF for the module
- (vii) Unique Serial No and Model No of the module
- (viii) Date and year of obtaining IEC PV module qualification certificate
- (ix) Name of the test lab issuing IEC certificate
- (x) Other relevant information on traceability of solar cells and module as per ISO 9000 series.

The RFID must be inside of module lamination. The module laminate, but must be able to withstand harsh environmental conditions.

12. All SPV modules must be indigenously built and made in India.

D. MOTOR-PUMP SET

1. Solar pump must be as per BIS/IEC/CE standards.
2. The SPV water pumping systems consists of DC Submersible pump set.
3. The “Motor-Pump Set” should have a capacity in the range of 0.5 HP to 2HP and should have the following features -
 - a) The DC pump set should be leakage proof.
 - b) The motor of the capacity ranging from 0.5 HP to 2 HP should be DC. The suction and delivery head will depend on the site specific condition of the field.
 - c) The pump should be PMSM/BLDC/SRM (with brush or brushless) and all parts of pump should be made of Stainless Steel. It should be suitable for bore well of minimum diameter of 4 inches. The pump should be operable for a voltage range of 30V – 300V. The dynamic head of the pump should be 90 metres and the minimum shut off head shall be at 120 metres respectively. The minimum discharge is indicated in Annexure – VI.
4. The pump and its external parts of motor used in submersible pump which are in contact with water, should be of stainless steel of grade 304 or higher durability as required. The motor- pump set should have a 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.
5. The suction pipe shall be of HDPE type while the delivery pipe shall be GI column pipes of appropriate size, electric cables, floating assembly, civil work and other fittings required to install the Pump set. For the HDPE suction pipes, the minimum pressure rating shall be 8 kg/sq.cm-PE100 grade.

E. MECHANICAL COMPONENTS MODULE AND TANK MOUNTING STRUCTURE (MTMS)

1. The Structure as per drawings attached in Annexure – VII, should be installed along with the hot dipped galvanized (minimum 80 microns) structure at site. The structure should be capable of withstanding a minimum wind load of 150 km per hour, after grouting and installation. MTMS should be sturdy & designed to assist SPV Modules to render maximum discharge. The hardware (fasteners) used for installation of SPV Modules should be of suitable Stainless Steel (SS 304) grade and that for structure shall be of suitable Stainless Steel (SS 304) grade or shall be GI. Structure should be grouted on pedestals & Foundation as per drawings. Each module should be fastened by four theft proof nut bolt. Only one GI sheets of thickness 1.2mm as per drawing shall be permitted

- for placing of water tank on structure.
2. Module Mounting Structures should have theft proof arrangements with the use of GI Steel C-channel along with the array support structure for locking arrangement of SPV modules for protecting them from theft. Its size should be with reference to the specifications of the SPV modules such that modules can comfortably slide in the channel while installation. It should not hide any portion of the photovoltaic circuit encapsulated in the lamination of the SPV module, there by un-affecting the efficiency & rating of the SPV modules. Anti-Theft Nut Bolts of SS (with washers) should also be used for better theft proofing along with “C” Channel MMS.
 3. The general hardware for structure fitment should be either SS 304 grade or GI. Modules should be locked with antitheft bolts of SS 304 Grade. Foundation should be as per drawing attached.
 4. Modules must be compulsorily fitted with SS anti-theft bolts (with SS washers of 20mm diameter and 2.5mm thickness).
 5. There must be sufficient passage between railing and water tank for free movement of technician around the water tank.
 6. The inlet and delivery pipe line should be separate and fixed by GI clamp to Main Pole.
 7. The ladder must be provided with suitable cage for easy movement technician up to tank tower base to avoid any fatal accidents.
 8. There must be a sufficient distance of 3-4 feet between the tank lid/cap to solar module C-channel for the easy movement of technician for cleaning of water tank.

F. SOLAR DRINKING WATER PUMP CONTROLLER

1. Controller must Minimum IP-54 box and IP-65 for controller is allowed.
2. Controller may be inbuilt or of external type.
3. Maximum Power Point Tracker (MPPT) shall be included to optimally use the power available from the SPV array and maximize the water discharge.
4. The Controller must have IP-65 protection or shall be housed in a cabinet having at least IP-65 protection.
5. Adequate protections shall be provided in the Controller box to protect the solar powered pump set against the following:
 - a) Dry running;
 - b) Open circuit;
 - c) Accidental output short circuit;
 - d) Under voltage;
 - e) Reverse polarity;
 - f) SPD to arrest high current surge; and
 - g) Lightning arrestor.
6. 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 Controller.
7. All cables used shall be as per IS694. Suitable size of cable shall be used in sufficient length for inter-connection between the SPV array to Controller and the Controller to DC pump set. Selection of the cable shall be as per IS14536.
8. The SPV controller must be installed at a height of 8 feet the ground level to keep the controller out of reach from village people to ensure its safety.

G. EARTHING ARRANGEMENT

1. Earthing of the pump/controller shall be done as per IS 9283 in accordance with the relevant provisions of IS 3043. Two separate Earthings will be required. (One for LA and other for SPV pump, Structure & Controller).
2. For safety purpose, it shall be ensured during installation that the earthing is capable of taking care of leakage current.
3. In case of UPVC/HDPE pipes used as discharge pipe, a separate non-corrosive, low resistance

4. Conductor from motor earth terminal to control panel earth terminal shall be provided for earthing.
5. A lightning arrestor shall be provided with every SPV Water Pumping System.

H. SURGE PROTECTION MECHANISM:

Internal surge protection shall consist of three MOV type arrestors connected from +ve and –ve terminals to earth (via Y arrangement) for higher withstand of the continuous PV-DC voltage during earth fault condition. Surge Protection Device (SPD) shall have safe disconnection and short circuit interruption arrangements through integrated DC in built bypass fuse (parallel) which should get tripped during failure mode of MOV, extinguishing DC arc safely in order to protect the installation against fire hazards. Nominal discharge current (In) at 8/20 micro seconds shall be minimum 10 KA with maximum discharge (I_{max}) at 8/20 micro seconds minimum 20 KA with visual indication (through mechanical flag) in modules to monitor the life of SPD. Internal surge protection should be connected to the earthing.

I. LIGHTNING ARRESTOR (LA):

Lightning Arrestor (of overall height being 2 feet more than the module mounting height) should be separate unit from the structure and confirming to IEC 62561 – 1, 2 & 7 detailed as below:

IEC 62561-1-Lightning Protection System Component (LPSC)-Part1- Requirement for connection components.

IEC 62561-2-Lightning Protection System Component (LPSC)-Part 2- Requirement for conductors and earth electrodes.

IEC 62561-7-Lightning Protection System Component (LPSC)-Part 7- Requirement for earthing enhancing compounds.

J. CABLES/WIRE:

All cables should be of copper as per IEC/BIC specification and should be of suitable grade as per requirement. All connections should be properly made through suitable lug/terminal crimped with use of suitable proper cable glands. The size of cables/wires should be designed considering the line losses, maximum load on line, keeping voltage drop within permissible limit and other related factors. The cable/wire should be of ISI/ISO mark for overhead distribution, with prior approval of CREDA. Please refer the below mentioned recommended cables sizes for the Solar Drinking Water Pump:-

| S.N. | Location within the | Size(SQMM) | Cable Type |
|------|---------------------|------------------------|-------------------------|
| 1 | Pump - Controller | 2.5 Sq mm 3 core Flat | Submersible Cable |
| 2 | Module- Controller | 2.5 Sq mm, Single Core | Multi Cable |
| 3 | Tank - Controller | 0.5 Sq mm, Single Core | Liquid Level Controller |

K. SWITCHING DEVICE & FLUID LEVEL CONTROLLER:

Switching Device and Fluid Level Controller should be of the approved make and it should be in accordance with the electrical parameters of the Motor / Pump. Controllers should be fixed in suitable minimum IP 54 box and IP-65 for controller is allowed. Controller must have provisions for Remote Monitoring.

Solar Pump Controller must have 5 years warranty.

- L. Arrangement for cleaning of modules through a valve and flexible pipe from the inlet pipe of the tank at a suitable and safe point.
The same make of Solar Panels, pumps, inverter / controller shall be permitted for which the

original and valid test report is submitted in the bid document should be supplied by the bidder.

M. PERFORMANCE REQUIREMENTS

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 –

REFERENCE:-

- Specification For Solar Photovoltaic Water Pumping Systems JNNISM Solar Photovoltaic Water Pumping Guidelines For Drinking Water Applications (2014-15) for b&c.
- Annexure-I of Circular No. F. No. 41/3/2018-SPV Division dated 17.7.2019 SPECIFICATION FOR SOLAR PHOTOVOLTAIC WATER PUMPING

a) For D.C. Motor Pump Set for drinking water applications(900Wp)-

As per CREDA requirement

1. Water output as per Wp calculation. i.e for
 - a. Capacity 01HP, Pump Dynamic head 90 meter Staging 06 Mtr. with water tank capacity 5000 ltr. – Min 5000 LPD.
 - b. Capacity 01HP, Pump Dynamic head 90 meter Staging 06 Mtr. with water tank capacity 10000 ltr. – Min 10000 LPD

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.

4. TESTS FOR HYDRAULIC AND ELECTRICAL PERFORMANCE OF PUMPSET -

- i. The motor-pump set shall be tested independently/manufacturer’s Certificates 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
- ii. Testing of SPV Water Pumping Systems shall be done as per procedure specified by the MNRE.

5. GUARANTEE OF PERFORMANCE -

- a) 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 3(L) under the “Average Daily Solar Radiation” condition of 7.15 KWh/m² 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.
- b) 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.
- c) Sufficient spares for trouble free operation during the Warrantee period should be made available as and when required.

6. MARKING AND PARAMETERS TO BE DECLARED BYTHE MANUFACTURER -

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

- i. **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) Maximum Current(A);
- j) Voltage Range (V)and;
- k) Type - AC or DC Pump set;

ii. Controller – (if not inbuilt)

- a) Manufacturer's name, logo or trade-mark;
- b) Model Number;
- c) Serial Number;
- d) Voltage Range;
- e) Power Range in kW for Controller ;and
- f) Current rating(A)

7. OPERATION AND MAINTENANCE MANUAL -

An Operation and Maintenance Manual in Hindi, should be provided with the solar PV pumping system. The Manual should have information about solar energy, photovoltaic, modules, DC/AC motor pump set, 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.

Raw material test certificates (MTC) of all types of raw material used in Drinking Water Pump structure as per appropriate IS code should be submitted along with dispatch documents.

8. OVERHEAD WATER STORAGE TANK SPECIFICATION

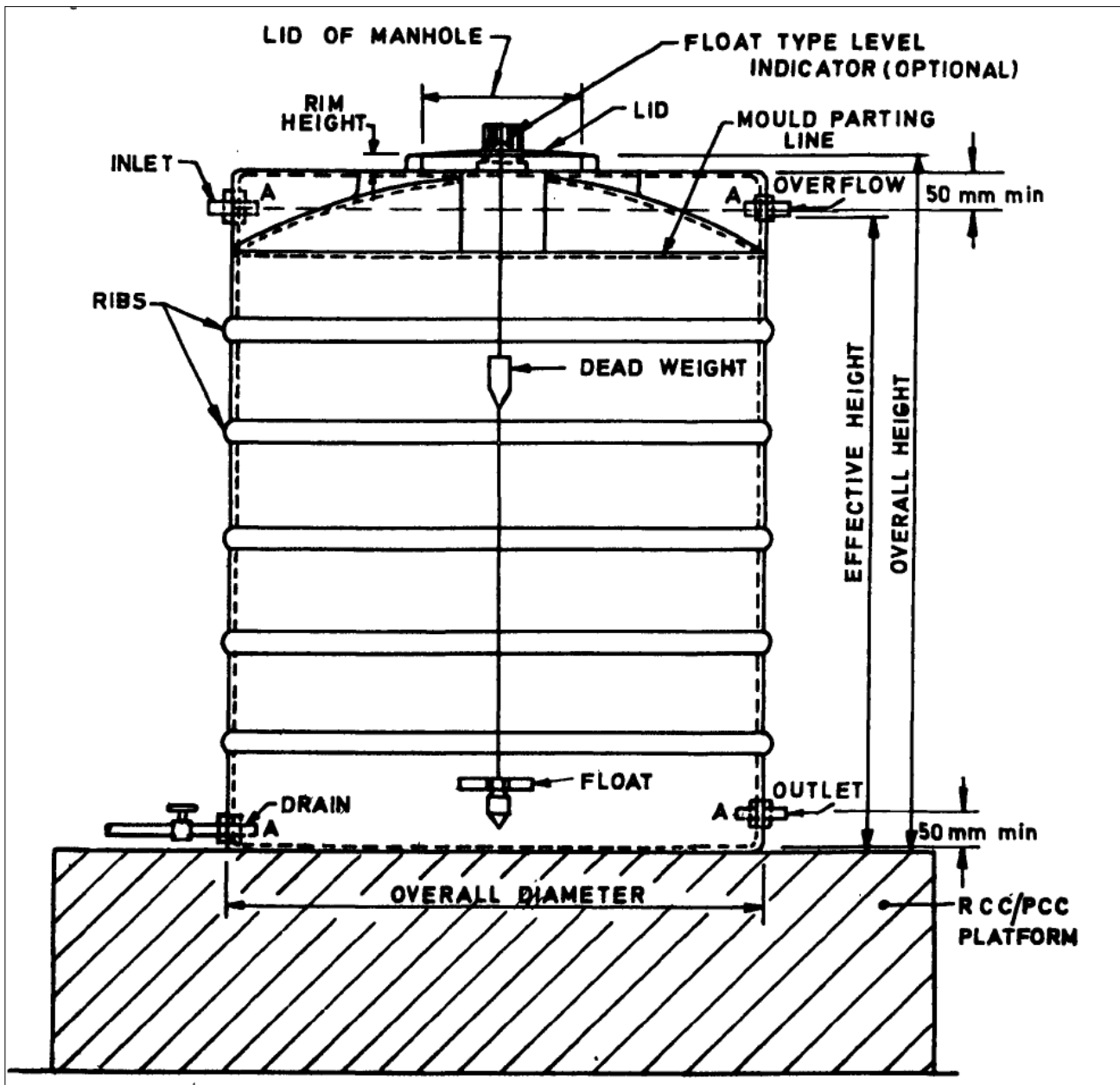
Rotational Moulded Polyethylene Water Storage Tanks Specification: ISI marked Rotational Moulded Polyethylene Water Storage Tank conforming to IS: 12701-1996 with amendment. No 1 . The water storage tank should be as per the IS 12701: 1996 standards and must be able to withstand the stormy weather conditions. The tank material should be in such a way that it should not change the quality of water with increase of temperature. A hole of suitable internal diameter must be provided at the top of the tank for the purpose of inspection and entry into the tank.

1. Bidder shall be required to furnish satisfactory original test certificate from government laboratory such as CIPET etc, as per IS: 12701/96 (Reaffirmed-2006) Edition 2.2 for double layer tanks, for size 5KL before the installation.
2. Bidder is required to produce original documents/invoices/manufacturer's test certificate from O.E.Ms representing the material used in moulding, to the concerned inspectorate at the time of inspection for the lot.
3. Bidder/Manufacturer shall be registered with NSIC or DGS&D to IS: 12701:96 (Reaffirmed 2006) Edition 2.2 specifically indicating the sizes for double layer tanks on or before tender opening.
4. Bidder/manufacturer shall submit original and valid BIS licence specifically indicating the sizes for double layer tanks along with their tender.

5. Bidder shall have to ensure that the water tank for installation shall be CIPET tested dated June 2022 onwards by the manufacturer.
6. The SI shall have to ensure that the water tank is strictly as per the IS: 12701 1996 standards. The water tank must comply with the standards and specifications mentioned in the table below. CREDA reserves the right to test the water tank installed by the bidder. If the water tank fails in the testing, then necessary action shall be taken against the SI. **If any deformity or rupture etc. is found during and after the installation, the manufacturer as well as the concerned SI will be blacklisted for minimum three years from the activities of CREDA including participation in tenders.**

| SN | Clause | Particulars as per IS: 12701 1996 | Unit | Specified Value |
|-------------------------|-------------|--|-------------------|--|
| | | | | 5000 L capacity tank |
| A. Tank Material | | | | |
| 1 | 4.2 | Identification of material | ---- | Shall be Polyethylene |
| 2 | 4.2.1 | Density at 23° C (Base Material) | kg/m ³ | 932 to 943 |
| 3 | 4.2.2 | Melt Flow Rate @ 190° C/load of 2.16 Kg | gm/10min | 2.0 to 6.0 |
| 4 | 4.2.3 (a) | Carbon black content | % | 2.0 to 3.0 |
| 5 | 4.2.3 (b) | Carbon black dispersion | ---- | Shall be satisfactory |
| B. Tank | | | | |
| 6 | 5.1 Table 1 | a. Overall diameter range | mm | 1800 to 2110 |
| | | b. Overall height range | mm | 1800 to 2100 |
| | | c. Min internal diameter of manhole/handhole | mm | 450 |
| | | d. Minimum wall & bottom thickness of tank | mm | 10.7 |
| 7 | 5.3 | Provision of flat area | ---- | Flat area is to be provided on top of the cylinder vertical tanks for worker to stand before entering the tank. |
| 8 | 5.4 | Wall thickness | | |
| | | a) upto the effective height | mm | 10.7 |
| | | b) above the effective height | mm | Shall not be less than 75% of the values give in Table 1 |
| 9 | 5.6 | a) Colour of the inner layer | ---- | Shall be white |
| | | b) Colour of the outer layer | mm | shall be black |
| | | c) thickness of the outer layer | mm | Shall be min 50% of the total thickness of the wall |
| 10 | 6.1 | Finish | | Internal & external surface of tank shall be smooth, clean & free from other hidden internal defects, such as air bubble pits and metallic or other foreign material inclusions. The mold parting line and excess material near the top rim of the tank shall be cut and finished to the required level. |
| 11 | 7.4 | Tensile Strength at Yield | N/sq mm | 12 (Min) |
| 12 | 7.5 | Flexural modulus | N/sq mm | 300 (min) |
| 13 | 9.1 | Type of lid and locking arrangement | --- | Lid shall fit securely over the top rim of the tank and it shall rest evenly on it in order to prevent the ingress of foreign matters. Lid shall also be provided with suitable locking arrangement |
| 14 | 9.2.1 | Lid Fitting to the man-hole | --- | Lid shall fit securely and there shall be no clearance to permit 1.6 mm dia wire between top rim of tank & lid |
| 15 | NA | Height of Inlet in tank | mm | 50 mm below the top surface of the tank. |
| 16 | NA | Height of outlet in tank | mm | 50 mm above the bottom surface i.e. base of the tank. |
| C. Marking | | | | |
| 17 | 10.1 | Water Tanks shall be marked with the following information: | --- | Shall be there |
| | | a) Manufacturer's name, initials or recognised trade mark; | --- | Shall be there |
| | | b) Net capacity in litres; | --- | Shall be there |
| | | c) Lot or Batch number, and year of manufacture | --- | Shall be there |
| 18 | 10.2 | In additions to the marking by painting, the manufacturers name or trade mark and net capacity of the tank shall be moulded on the external surface of the tank during manufacture. | --- | Shall be there |
| 19 | 10.3 | BIS Certifications Marking: The tanks may also be marked with Standard Mark | --- | Shall be there |

Schematic diagram of water storage tank as per IS: 12701 1996



RECOMMENDATIONS FOR INSTALLATION AND FITTING OF TANKS

E-1 Vent pipe/overflow pipe is provided near the top with mosquito and insect proof cap.

E-2 The flat base of cylindrical vertical or rectangular water storage tanks should be fully supported over its whole bottom area by a durable, rigid, flat and level platform sufficiently strong to withstand without deflection the weight of the tank when filled fully with the water. In case, the tank is placed on a suitable M. S. platform then it is essential that the latter is free from sharp edges, corners or surface projections and shall be corrosion resistant.

E-3 Where required the tanks shall be suitably anchored. The tanks may also be provided with clamping devices.

E-4 The pipelines, valves and other fittings should be supported in such a manner that it is aligned properly so as not to produce any distortion in the water tank where the fitting is fixed.

E-5 The checknuts of the threaded connection should be placed after placing rubber gaskets and should not be overtightened. Under no circumstances should jointing compounds or putty be employed in contact with the polyethylene water tanks. PTFE (poly-tetra-fluoroethylene) unsintered tape may be wrapped around the threaded portion of the valves and connections to act as a sealant.

E-6 Circular holes drilled for fixing threaded connections should have a clean edge free from notches. Holes can be drilled with a high speed steel hole saw cutter. Scratching or scoring the wall should not be done for setting out holes.

E-7 Where the section of water tank has a change in profile which is accomplished with a radius, it is essential that the outer extremities of the threaded connections are clear of this radius.

E-8 The water storage tank should not be installed in close proximity to heaters or other direct sources of heat.

E-9 FITTINGS

E-9.1 For providing inlet, outlet and other connections, usually full threaded G.I. brass connections are used which shall not produce any kind of harmful effect on potable water. A typical threaded connections is illustrated in Fig 4. Flat surface may preferably be provided to fix outlet pipes at appropriate locations. The design of threaded connections fixed with the water storage tank may be similar to that shown in Fig 4. The different sizes of threaded connections required to be fixed for different capacities of water storage tanks may be according to Table 6.

E-9.1.1 The overflow pipes should be provided with non-corrodible mosquito-proof device of maximum clearance not more than 1.6 mm.

Table 6 Sizes of Threaded Connections
(Clause E-9.1)

| Sl No. | Capacity of Water Storage Tank | Nominal Bore Size of Threaded Connection (mm) |
|--------|--------------------------------|---|
| i) | Up to 750 | 12.5 |
| ii) | Above 750 and up to 2 000 | 25 |
| iii) | Above 2 000 and up to 4 000 | 40 |
| iv) | Above 4 000 and up to 10 000 | 50 |
| v) | Above 10 000 | 75 |

E-9.2 The dimensions of male and female threads of G.I. PVC/brass full threaded connections and other fittings like elbow, tee, bend, coupling, nipple, etc, shall be conforming to IS 554 : 1985. The sizes and other dimensions of the fittings, such as centre-to-face, face-to-face and centre-to-centre shall conform to IS 1879 : 1987. Manufacturers shall provide instructions for fittings.

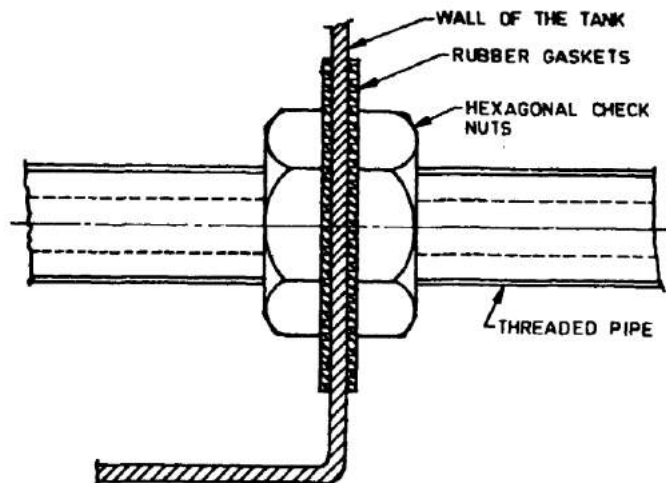


FIG. 4 THREADED CONNECTION

9. TESTS TO BE PERFORMED ON DRINKING WATER PUMP STRUCTURE FOR 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) **(IS822)**
2. For ascertaining hot dip galvanizing of fabricated structure following should be referred -
 - a. Min coating required should be as per IS4759.
 - b. Testing of galvanized material.
 - i. Preece Test (CuSO₄ Dip Test) **(IS2633)**
 - ii. Mass of Zinc **(IS 6745)**
 - iii. Adhesion Test **(IS2629)**

10. WATER SUPPLY SYSTEM& WIRE ROPE

The depth of submersible Pump shall be max 120 Mtrs or as per the depth of the bore with independent riser pipe. HDPE pipe should be as per pump outlet (HDPE pipe of 32 mm dia. considered) pump to hand pump special water chamber. Only GI pipe of 50/32/25 mm size shall be used for over ground connection such as inlet, outlet and over flow connection of overhead tank

11. WIRE ROPE

The wire rope must be used to protect the pump from falling down and easy removal of pump in case of any faults. The wire rope must be made up of stainless steel 6 Sq mm dia with all wire rope fittings, Slings etc .Selection of wire rope should be made in such a way that it should hold the pump perfectly if in any case the pump falls down due to breaking of wire rope then it shall be responsibility of SI to provide the new pump.

12. CIVIL SUPPLY / INSTALLATION:-

Civil supply / installation essential for erection of Overhead Tank Structure as per local site conditions and soil formation and drawing specified in the tender.

13. GALVANIZED TAP STAND:-

1. Tap Stand should be hot dip galvanized with having platform of 2mtr x 2mtr with proper drainage up to 3 mtr as per the drawing specified in tender.
2. Stand should consist of 4 numbers **of 25mm** stainless steel lift-cock type taps at height min. 800 mm.

SECTION - 5
ANNEXURES, SPECIFICATIONS, FORMS

ANNEXURE-I

(EXPERIENCE CERTIFICATE ON THE OFFICIAL LETTER HEAD OF CONCERNED GOVERNMENT DEPARTMENT WITH SEAL AND SIGN BY AUTHORIZED SIGNATORY)

Ref. No.....

Date.....

CERTIFICATE OF COMPLETION - OFF GRID SPV DRINKING WATER PUMPS

This is to certify that **Name of Bidder, Address of Registered Office** has successfully completed the work of design supply, installation & commissioned of **Numbers**. Off grid SPV Drinking Water Pumps (..... Scheme) against various Sanction of Name of Agency at various locations in.....State, as per following details –

| Capacity of water tank(Litre) | Capacity & Type of SPV Pumps (HP / AC / DC / Submersible) | Year & Scheme | Total no. of Pumps | Remarks |
|---|--|---------------|--------------------|---------|
| SPV Drinking Water Pumps 900Wp 1.0 HP DC Submersible with 06 Meters staging and 5000 Litres Storage Tank | | | | |
| SPV Drinking Water Pumps 900 Wp1.0 HP DC Submersible with 06 Meters staging and 10000 Litres Storage Tank | | | | |
| Total - | | | | |

This workmanship and performance of the above installed systems are found satisfactory and are in successful operation.

Seal & Sign
(Authorised Signatory)

CONSORTIUM AGREEMENT

This Consortium Agreement executed on this Day of 2022

BETWEEN

M/S, a Company/Proprietorship Firm/Partnership Firm incorporate under the Law of companies Act 1956/2013 and having its registered/principal office at (GST No.....) through its proprietor S/o (herein after called the “Partner-I”/ “Lead Partner” which expression shall include its successors, executors and permitted assigns).

AND

M/s a Company/Proprietorship Firm/ Partnership Firm under Firm (GST No.) and having its registered/principal office at Through its Partner Mr. S/o (here in after called the “Partner-II”/“Second Partner” which expression shall include its successors, executors and permitted assigns).

This agreement is for the purposes of submission of bid as per the **TENDER DOCUMENT NO. 102066/CREDA/SPVDWP-2/2022-23 DATE: 13-06-2022** and entering into a contract in case of award for the work of Survey, Design, Supply, Installation & Commissioning of Solar Photo Voltaic Irrigation Pumps of various capacities with five years onsite warrantee and CMC anywhere in the state of Chhattisgarh.

AND WHEREAS as per Tender document, Consortium bids will also be considered by the Owner provided they meet the specific requirements in that regard.

NOW THIS INDENTURE WITNESSETH AS UNDER -

In consideration of the above premises and agreements all the partners to this Consortium do hereby now agree as follows:

1. We the partners in the Consortium hereby confirm that the name and style of the Consortium shall be “..... /” “Consortium.”

2. **FORMATION AND PRINCIPLE PLACE OF BUSINESS**

FORMATION -

The partner of the consortium do hereby form a Consortium pursuant to the laws of state of Chhattisgarh in order for the consortium to carry on the purposes for which provision is made herein.

PRINCIPAL PLACE OF BUSINESS -

The Consortium Partner shall maintain principal place of business at The partners of the consortium may re-locate its office from time to time or have additional offices as the partners may determine -

3. **PURPOSE OF THE CONSORTIUM -**

The object of the consortium to bid and perform Tender No. 102066/CREDA/SPVDWP-2/2022-23 DATE: 13-06-2022 from CHHATTISGARH STATE RENEWABLE ENERGY DEVELOPMENT AGENCY (CREDA) For Survey, Design, Supply, Installation & Commissioning of Solar Photo Voltaic Drinking Water Pumps of Various Capacities with Five Years on Site warrantee, CMC & Insurance anywhere in the state of Chhattisgarh and to deal with the same in any manner what so ever.

4. TERM -

The term of the consortium shall commence as of the date hereof and shall be terminated and dissolved upon the earliest to occur of (i) on mutual understanding of partners by executing separate agreement regarding dissolution of consortium (ii) the unanimous agreement of the partners (iii) the order of a court of competent jurisdiction (iv) Competition of the above mention tender

5. PERCENTAGE OF PARTICIPATION -

| CONSORTIUM PARTNER | | PARTNER | PERCENTAGE |
|--------------------|-----------|----------------------------|------------|
| 1) | M/S | Lead Partner (Partner 1) | |
| 2) | M/s | Other Partner (Partner 2) | |
| TOTAL - | | | |

6. PARTICIPATION -

Both the partners have decided to perform the above mention work of CREDA in their above proportionate work.

7. The Lead Member is hereby authorized by the second Member of the Consortium to bind the Consortium and receive instructions for and on their behalf. For this purpose second member will submit a duly signed Power of Attorney.

8. The lead partner of consortium will be solely responsible for any liability, penalty, CMC and other terms and conditions mentioned in this tender document.

9. The Lead Member shall be liable and responsible for ensuring the SPV Drinking Water Pump and collective commitment of each of the members of the Consortium in discharging all of their respective obligations. Furthermore lead member shall be liable for fulfilment of each terms and conditions of the tender document. Each Member further undertakes to be SPV Drinking Water Pump liable for the performance of its part of the obligations without in any way limiting the scope of collective liability envisaged in this Agreement.

10. Subject to the terms of this Agreement, the all member shall be responsible for providing technical and financial support and responsible for execution of project as per agreement to be signed.

11. In case of any breach of the said Contract by any of the partners of the CONSORTIUM, we hereby agree to be fully responsible for the successful execution/performance of the Contract in accordance with the terms of the Contract.

12. Further, if the Owner suffered any loss or damage on account of any breach of the Contract or any shortfall in the completed equipment/ plant, meeting the guaranteed performance parameters as per the technical specifications/ contract documents, the Lead Partner and Second Partner of these presents undertake to promptly make good such loss or damage caused to the Owner, on the Owner's demand without any demur.

13. The financial liability of the partners to this Consortium Agreement, to the Owner with respect to the any or all claims arising out of the performance or non-performance of

the Contract shall, however be not limited in any way so as to restrict or limit the liabilities of either of the partner.

- 14.** This Consortium Agreement shall be governed, construed and interpreted in accordance with Laws of India. Courts of Raipur (C.G.) shall have exclusive jurisdiction in all matters arising there under.
- 15.** It is further agreed that this CONSORTIUM Agreement shall be irrevocable and shall form an integral part of the Contract and shall continue to be enforceable till the Owner discharges the same. It shall be effective on the date first above mentioned for all purposes and intents.

IN WITNESS WHEREOF, the partners to this Consortium agreement have, through their respective authorized representatives, have executed these presents and affixed their hands and common seal of their respective companies on the day, month and year first above mentioned.

FOR, M/s

FOR, M/s

(MR.)
Lead Partner/Partner-1

(MR.)
Other Partner/Partner-2

WITNESS -
1.....
2.....

WITNESS -
1.....
2.....

FORMAT FOR THE AFFIDAVIT

(Note: This affidavit should be on a non-judicial stamp paper of Rs. 100/- and shall be attested by Magistrate/Sub-Judge/ Notary Public)

I,.....(Name of the bidder authorized representative of the bidder) son/ daughter of..... resident of (Full address), aforesaid solemnly affirm and state as under:

1. I hereby certify that all the information furnished with the bid submitted in response to Tender/bid no. 102066/CREDA/SPVDWP-2/2022-23 DATE: 13-06-2022 issued by Chhattisgarh State Renewable Energy Development Agency (CREDA) (authority inviting bids) for Design, Supply, Installation and Commissioning with 5 years comprehensive maintenance of Solar Drinking Water Pump at different locations in Chhattisgarh state (name and identification of work) are true and correct.
2. I hereby certify that I have been authorized by..... (Company name) to sign on their behalf, the bid mentioned in Sr.No.1 above.*
3. Information furnished in the bidding documents is correct in all respects to the best of my knowledge and belief.
4. The near relations, as per clause 30(A) in Section - 02, in CREDA, are not in employment of the firm/company. (Note:-By the term near relatives is meant Wife, Husband, Parents and Son, Brother, Sister, Brother-in-law, Father-in-law, Mother-in-law etc.) (if working mention the name/names)
.....
.....
5. The name of near relative (if any) as per Clause 31(B) who retired/removed within the last two years. (If None, clearly State None)
.....
.....
6. No near relative is working as Financial Accountant in the CREDA. (if working mention the name)
.....
.....
7. No person is working in the company in any capacity, who are near relatives to any Officer in Chhattisgarh State Renewable Energy Development Agency (CREDA) (If working mention the name)
.....
.....
8. Our company/firm/ or otherwise is not under the clarification of ineligibility for corrupt and fraudulent practices by the Central Government, the State Government or any public undertaking, autonomous body, authority by whatever name called under the Central or the State Government as mention in clause 1(F) of tender document.

9. I hereby authorize the CREDA Officials to get all the documents verified from appropriate sources (s).

Deponent

Place:

Date:

* Not applicable if the bidder is an SPV Drinking Water Pump and is signing the bid on his own behalf.

Verification

I..... S/o.....do here by affirm that contents stated in Para 1 to 09 above and contents submitted in technical & financial bid are true to the best of my knowledge and believe and are based on my/our record.

Verified that this date of at (Place).....

Deponent

I&C PROCEDURES FOR SOLAR WATER PUMPING

Purpose

This document describes the Quality Assurance/Quality Control (QA/QC) procedures that should be used for the entire duration of the construction of a Photovoltaic (PV) pumping systems. These procedures are to be completed by the appropriate site personnel (project quality team) – District Officer, Service Providers, Contractors, subcontractors, and third party test & inspection representatives deployed for the project.

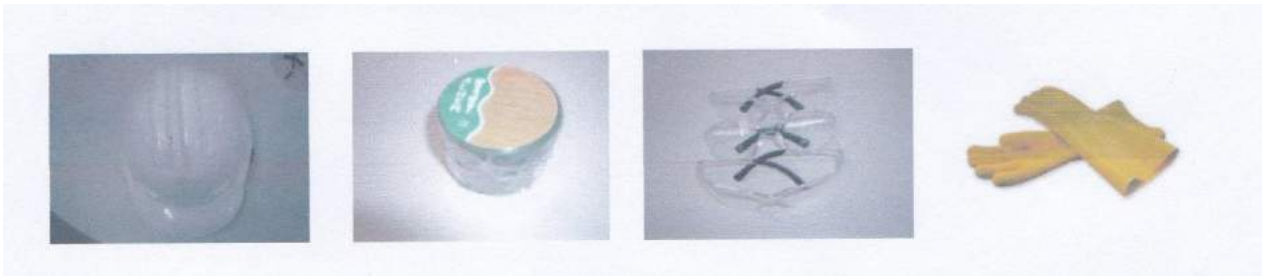
These procedures enable the project team to deliver a quality project that meets the CREDA design and construction standards, plus prevents defects that could affect quality, reliability, and performance of the Photovoltaic (PV) pumping system benchmarking performance and, thereby increasing useful life of the system.

Pumping System Project Operating Procedures

Safety

ELECTRICITY IS DANGEROUS- HANDLE WITH CARE. WHEN SEVERAL PANELS ARE CONNECTED TOGETHER THERE CAN BE HIGH VOLTAGES PRODUCED.

- Do not short circuit solar modules without any reason, a short circuit can lead to spark and even cable damages. All open ends of cables are insulated
- Ensure personal safety during excavation, erection and material handling.



Survey Works

- For excavation, the marking of the block needs to be done as per the approved block drawing. Visual/Physical inspection is to be undertaken as per drawings
- Foundation marking needs to be undertaken as per approved construction drawings. The position of the foundation with respect to the module mounting needs to be ascertained by physical measurement

Excavation works

- Nature and type of soil needs to be ascertained visually before excavation
- Initial ground level needs to be marked before start of the excavation as per the approved construction drawings
- Final Shape and dimension of the excavation along with final excavation level needs to be measured as per the technical specification in the construction drawing.



Compaction of filled soil

- Soil quality and water level needs to be visually inspected for each site before PCC bedding. Soil compactness needs to be visually checked for each site.

Construction Materials

- Cement needs to be procured from ISI certified brand with minimum grade of cement of **OPC 53 grade/ PPC mixed as per M-20 mixed proportion**. Cement storage needs to be done in weather tight covered storage platform and stacking of cement bags needs to be proper. Random inspection to be undertaken.
- Coarse aggregate particle size needs to be **less than 20mm**.
- Fine aggregate/MS sand particle size needs to be around 5 mm with mix of foreign materials.
- **One Cube test by every contractor** needs to be tested for compression strength and basis results, compaction ratio and grade of material will be established, which will be followed throughout the project. If required, basis site requirements, separate cube test can be undertaken to establish site specific compaction ration/material mix.

Reinforcement Steel and Placement

- Reinforcement steel needs to be free of cracks, surface flaws and lamination as per technical specification under IS: 1786, IS:432 and IS:1852
- Bending of Bars and tolerance levels needs to be established as per IS:2502
- Spacing of bars, reinforcement cage placement is to be visually inspected as per IS:2502 and approved construction drawings
- Reinforcement bar centre line alignment, depth and verticality needs to be reviewed as per approved foundation drawings.



Concrete

- Concrete trial mix and design mix is to be tested in lab as per IS:456, SP:23, IS:10256. One cube test per contractor is to be tested for crushing strength as per IS:456
- Dimension and visual examination for finished concrete with minimum curing time of 7 days is to be undertaken. The cured concrete block should be free from foreign and oversized aggregates.

Raw Materials Inspection

- Raw material is to be procured from reputed manufacturer with ISI branded, CM/L branded with material test certificate to be submitted for inspection and clearance.



Item : HDPE –pipe.

Ref. standard: IS 4984/ Drawing. Application- Irrigation ASTMD for Drinking Water.

Quality check: ISI mark, Grade, thickness, diameter, visual check on crack/ ovality, lumps, colour change, thickness variation, RTC

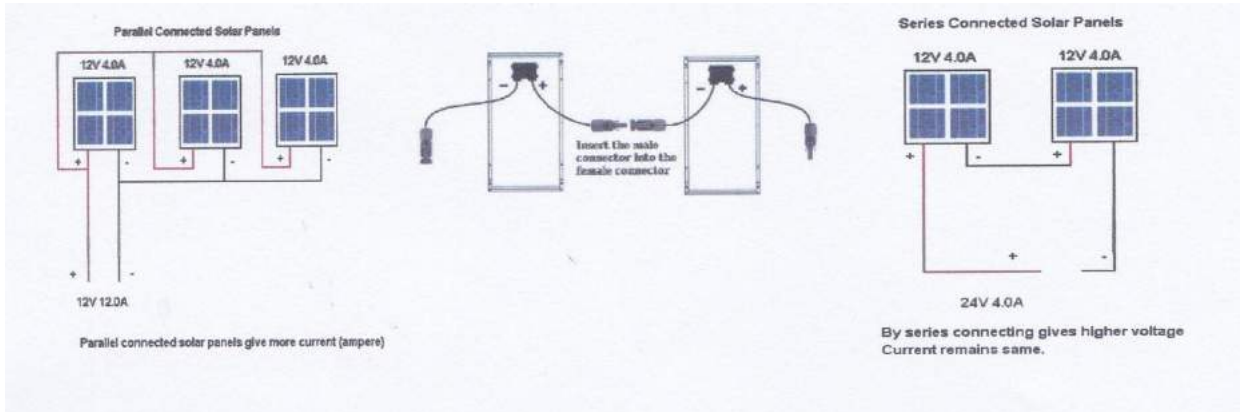
MMS and Module Assembly

- Structure parts needs to be numbered along with SS hardware. Assembly is to be undertaken as per steps illustrated by Manufacturer. First system per contractor will be treated as a demo system to establish key work practices for each contractor.
- Module mounting on tilt angle and orientation needs to be carefully done with hardware tightening as per standard operation procedures. Torque wrench is required for tightening all module hardware. MMS assembly to be done in line with the installation drawing and ensure proper alignment and tightness with torque wrench. Ensure antitheft hardware locking with torque for each bolt to be ensured as per below mentioned table. After tightening the nut, permanent marking to be done to ensure that proper tightening done.



- **Round washer/Square washer** used for Module fixing to structures as square washers have a larger surface area than round washers. This type of washer is also specified for handling vibrations especially in high speed wind zones.
- Module wiring as per wiring diagram to be undertaken taking care thatn no physical damage to insulation is to be accepted.

- String and array testing for designed Voc needs to be checked.
- Ground clearance with degree of tilt and rotation is to be clearly identified to avoid damage to modules. Each modules frame is to be grounded with structure earthing.



Pump Assembly and Testing

- Bore wells needs to be checked for quality of water and cleanliness. Inclination angle needs to be confirmed as per manufacturer’s manual.
- To test the pump in, you can test it dry by watching the pump shaft and running it for only a few seconds. The metal label on the pump has an arrow to indicate the proper direction of rotation. It can be run dry safely for about 5 seconds. This gives more than enough time to observe the direction of the shaft.
- Splicing of wires needs to be undertaken as per manufacturer’s recommendation. Adequate length of insulation is to be removed so that multi-core cable joints can be visually separated with crimped connectors. Rubber sleeve needs to cover the crimped connector for additional protection with electrical protective tape on it.








- Each SPV Drinking WaterPumpshould be tested as per details in manufacturer’s manual.

Final Inspection and Testing

- Voc check across each module string for each installation is to be verified for each installation
- Earthing check for insulation resistance to be check with calibrated instrument. Approved drawing to be consulted with earthing resistance less than 5 Ohms.

List of equipment required for Installation & Commissioning of Pumps

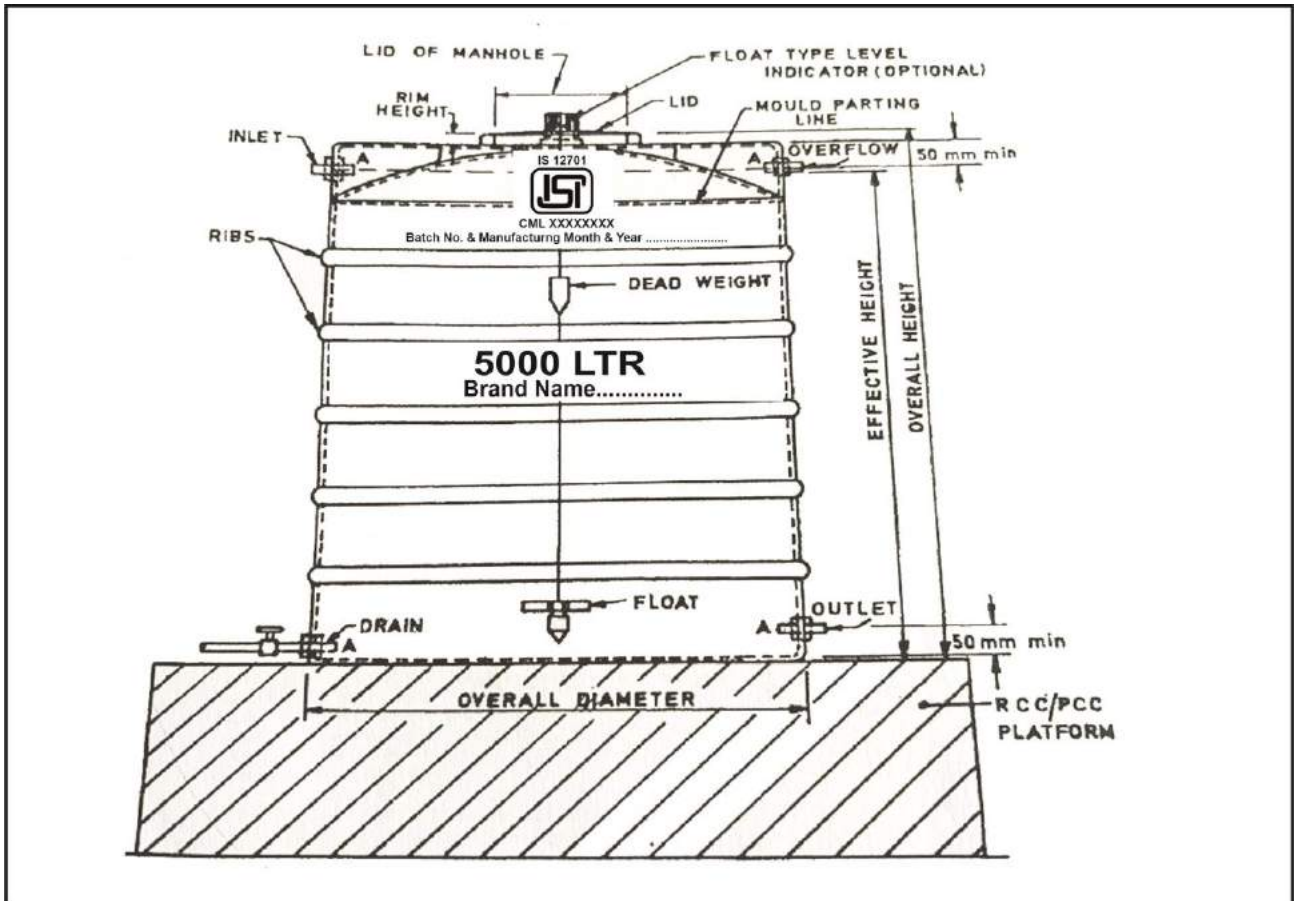
| Equipment for Solar Pumping System | | | | | | |
|------------------------------------|---------------------|-------------------|---------|-------|----------------|---------|
| S. No. | Instrument required | How it looks like | Purpose | Range | Quantity (min) | Remarks |
| | | | | | | |

| | | | | | | |
|----|-------------------------|--|--------------------------------|--|------------------|------------------------|
| 1 | Cube mould |  | For making cubes | 150x150x150 | 36 no.s | One mould can be kept. |
| 2 | Measuring Tape |  | For measurement | 0-5mtr 0-10mtr | 01 | |
| 3 | Spirit level |  | For level checking | Sensitivity 2 mm for a tilt of 0.005 degree | 02 | |
| 4 | Inclinometer |  | Incline measurement | Measurement range 0- 360° (4 x 90°) | 01 | |
| 5 | Torque Wrench | Reputed Make i.e Taparia  | For tightening module hardware | Measurement range 0-100 N -m | 01 | |
| 6 | Earth resistance tester | Reputed Make | Waco make or equivalent | < 0-1-10 -50 ohms | 01 | |
| 7 | Tong tester | Reputed Make | Mico | 0-20 A, 0-1000 V | 01 | |
| 8 | Flow tester | Reputed Make as per requirements. | | | 01 | |
| 9 | Digital Multimeter | Reputed Make | Mico | 0-20 A, 0-1000 V | 01 | |
| 10 | Tools | Spanner, ratchet, cutting piler, wire stripper, insulation tape, crimping tool, hammer. | Reputed make | As per requirements | 1 set/contractor | General tool |

ANNEXURE – V

Indicative markings on Water Storage Tank and CREDA Logo to be pasted on SPV module.

A. Markings on Water Storage Tank to be ensured by the Bidder
1.5000 Litres



B. CREDA Logo to be pasted on SPV modules of SPV drinking Water Pumping System



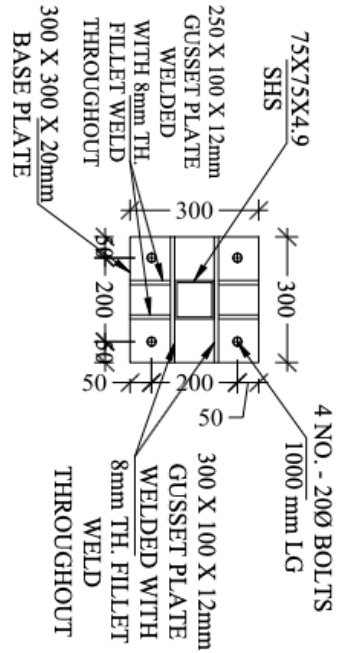
Indicative Discharge Requirement of Solar Deep well (submersible) Pumping Systems with D.C. Motor Pump Set [PMSM/BLDC/SRM (with brush or brushless)]

| S. No. | Description | Required Water Output |
|--------|--|-----------------------|
| 1 | Solar Drinking Water Pump PV array 900 Wp minimum motor Pump-set capacity 01HP, Pump Dynamic head 90 metres Staging 06 Mtr. with water tank capacity 5000 ltr. | 5000 Liter per day |
| 2 | Solar Drinking Water Pump PV array 900 Wp minimum motor Pump-set capacity 01HP, Pump Dynamic head 90 metres Staging 06 Mtr. with water tank capacity 10000 ltr. (5000 ltr. x 02) | 10000 Liter per day |

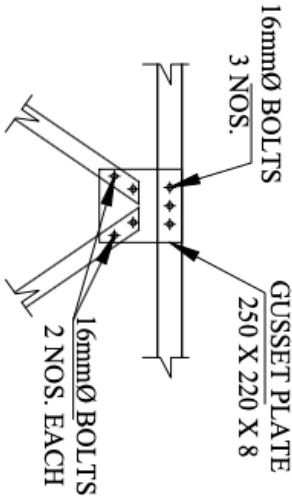
*Water output figures are on a clear sunny day of SPV panel, under the “Average Daily Solar Radiation” condition of 7.15 kWh/sq. m on the surface of PV array (i.e. coplanar with the PV Modules)

Note -

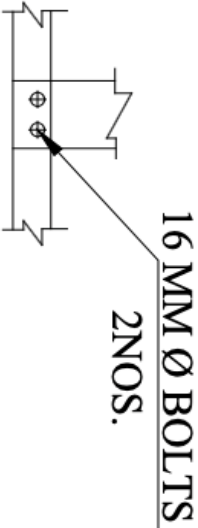
For higher or lower head, or in between various models; water output could be decided as per the clause 4 (i.e. Performance Requirements) specified earlier.



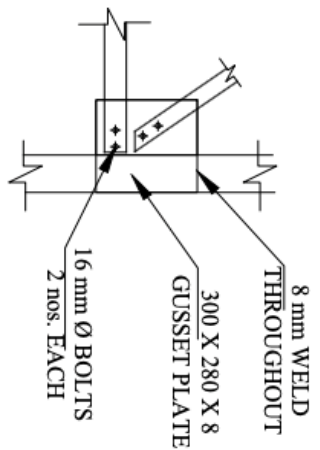
DETAIL - 01



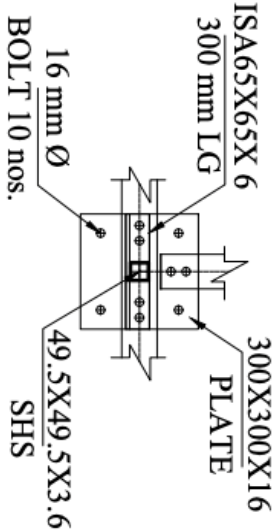
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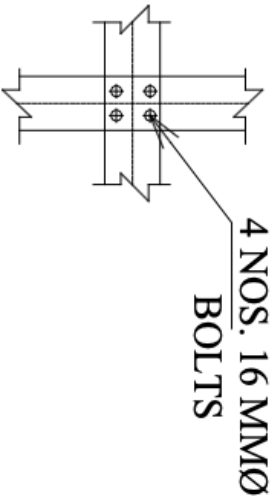
DETAIL - 05



DETAIL - 02



DETAIL - 04



DETAIL - 06

GENERAL NOTES

1. ALL DIMENSIONS ARE IN MILLIMETER. WRITTEN DIMENSIONS ARE TO BE FOLLOWED. DIMENSIONS OF STRUCTURAL DRAWING SHOULD NOT BE SCALED.
2. STRUCTURAL DRAWING SHOULD BE READ IN CONJUNCTION WITH THE GENERAL NOTES AND SPECIFICATIONS. ARCHITECTURAL AND STRUCTURAL DRAWING SHOULD BE IMMEDIATELY BROUGHT TO NOTICE OF CONSULTANT.
3. ALL CONCRETE DESIGN SHALL BE CONCRETE AND REINFORCEMENT SHALL BE AS PER THE SPECIFICATIONS.
4. TIES SHOULD BE BEND INSIDE WITH 90 LENGTH, ANGLE 135 IN BEAM & COLUMN.

REINFORCING STEEL

1. ALL REINFORCING STEEL SHALL BE AS PER THE SPECIFICATIONS.
2. REFER TO HIGH YIELD STRENGTH DEFORMED BARS WITH CHARACTERISTIC STRENGTH OF 500 N/SQMM.
3. THE CLEAR COVER TO REINFORCEMENT SHALL BE AS PER THE SPECIFICATIONS.
4. REINFORCEMENT SHALL BE AS PER THE SPECIFICATIONS.
5. REINFORCEMENT SHALL BE AS PER THE SPECIFICATIONS.
6. REINFORCEMENT SHALL BE AS PER THE SPECIFICATIONS.
7. REINFORCEMENT SHALL BE AS PER THE SPECIFICATIONS.

STEEL WORK

1. USE ALL INDIAN STANDARD ROLLED SECTIONS.
2. IF THERE ANY JOISTS IN LONG MEMBERS NOT TO BE PROVIDED AT CENTER AND TO BE PROVIDED FOR FULL STRENGTH.
3. ALL BOLTS AND NUTS TO BE MACHINE CUT.
4. ALL BOLTS AND NUTS TO BE MACHINE CUT.
5. ALL CLEAR OR ANGLE SECTIONS TO BE ISA.
6. ALL WELDS TO BE PROVIDED 8MM FILLET FOR FULL STRENGTH.
7. ALL COVER & STRENGTHENING PLATE ARE OF 8MM THICK.
8. YIELD STRENGTH - 250 N/MM².
9. ALL COVER & STRENGTHENING PLATE ARE OF 8MM THICK.
10. FILLING IS 2002 FOR HOT ROLLED MEMBRS AND HIGH TENSILE STRUCTURAL STEEL SPECIFICATION.
12. FILLING IS 101 FOR RECTANGULAR HOLLOW SECTIONS.

PROJECT SPECIFICATION

1. THE NET SAFE BEARING CAPACITY OF SOIL IS TAKEN AS 9 TONN/M² AT 2000 DEPTH FROM THE VGL.

SIGNING AUTHORITY

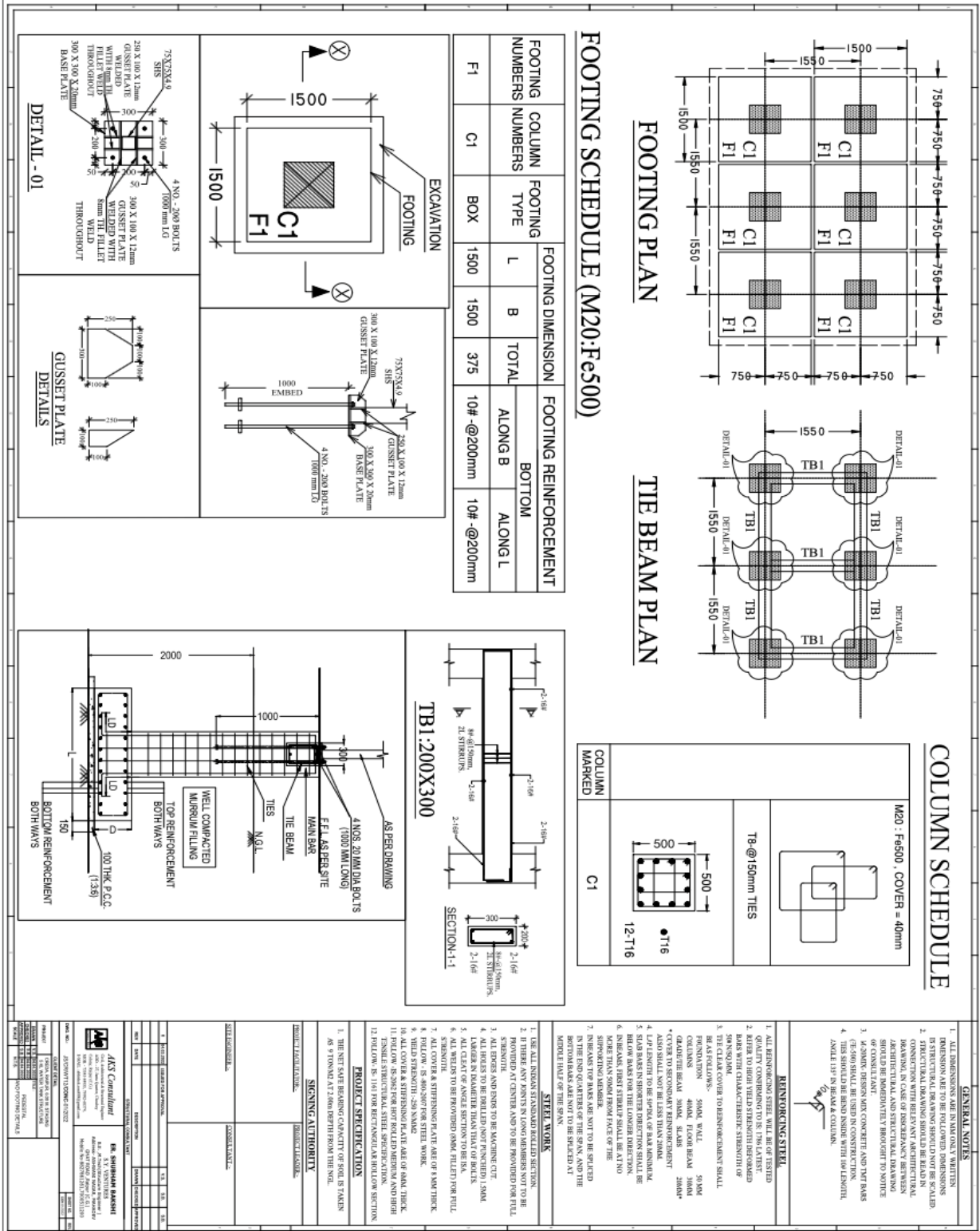
| | |
|-------------------|-------------------|
| PROJECT LOCATION: | PROJECT LOCATION: |
| DATE: | DATE: |
| SCALE: | SCALE: |
| DESIGNER: | DESIGNER: |
| CHECKER: | CHECKER: |
| APPROVED: | APPROVED: |

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 10/10, 1st Floor, Anna Salai, Chennai - 600 002
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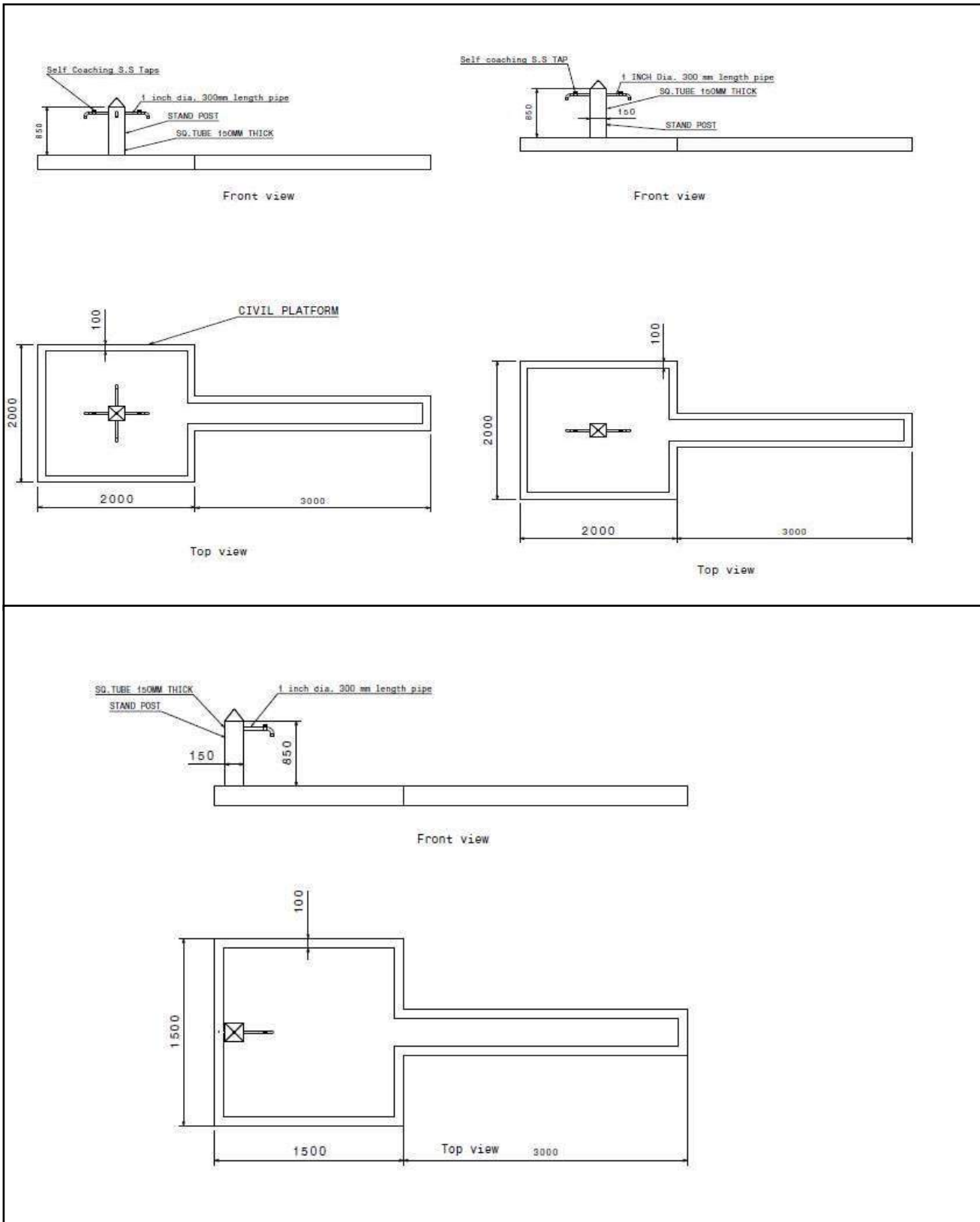
| | | | |
|------|------------|-----------------------|-----------------------|
| NO.: | DATE: | BY: | CHKD BY: |
| 01 | 10/10/2022 | DR. SURESH K. MURUGAN | DR. SURESH K. MURUGAN |
| 02 | 10/10/2022 | DR. SURESH K. MURUGAN | DR. SURESH K. MURUGAN |
| 03 | 10/10/2022 | DR. SURESH K. MURUGAN | DR. SURESH K. MURUGAN |

B. Complete indicative drawing of 900 Wp/1 HP, 06Mtr Staging, 10KL Solar Drinking Water Pump structure & civil works [High resolution version can be found in ‘Other Documents’ titled ‘Doc2’ as well as on the e-bidding portal as attachment]



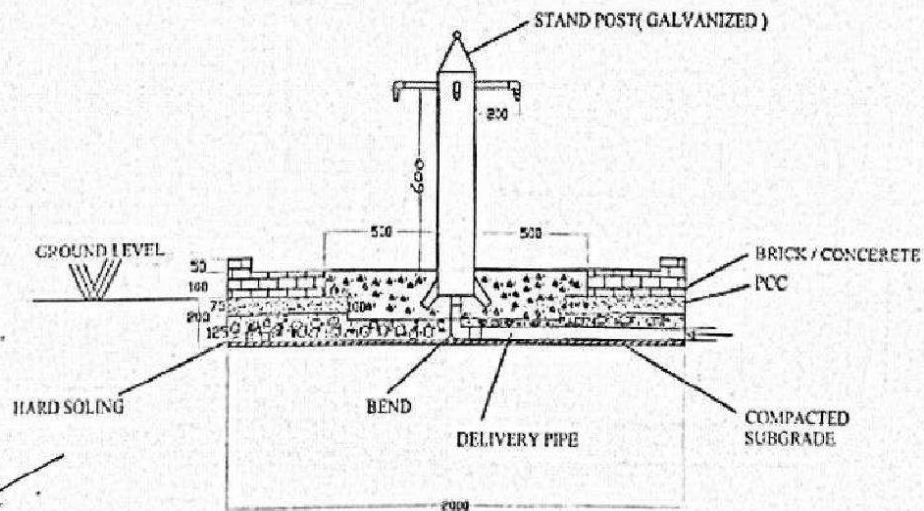
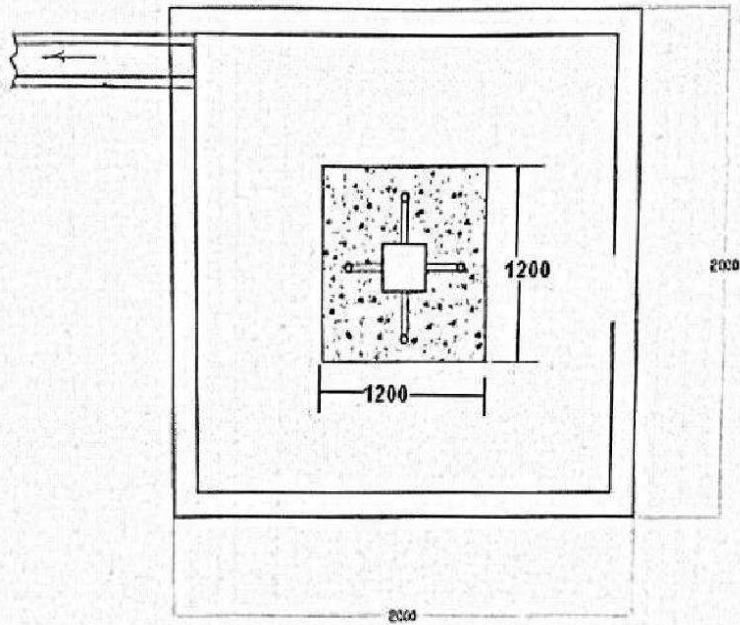
| | | | | | | | | |
|---------------------------|---|---------------------------|-------------|------------|------------|--|-------------|--|
| <p>DETAIL - 01</p> | <p>DETAIL - 02</p> | <p>DETAIL - 03</p> | | | | | | |
| <p>DETAIL - 04</p> | <p>DETAIL - 05</p> | <p>DETAIL - 06</p> | | | | | | |
| <p>DETAIL - 07</p> | <p>GENERAL NOTES</p> <ol style="list-style-type: none"> 1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED. 2. STRUCTURAL DRAWINGS SHOULD NOT BE SCALE DRAWINGS. 3. CONNECTIONS WITH RELEVANT ARCHITECTURAL DRAWING IN CASE OF PACKAGE BETWEEN CONTRACTOR AND ARCHITECT SHOULD BE BROUGHT TO NOTICE OF CONSULTANT. 4. MASONRY DESIGN MIX CONCRETE AND TYP BARS (FOR BRICK) SHALL BE DESIGN CONSTRUCTION CODE AND SHALL BE AS PER IS 10262. 5. ANGLE LIPS IN BEAM & COLUMN <p>REINFORCING STEEL</p> <ol style="list-style-type: none"> 1. ALL REINFORCING STEEL SHALL BE OF TESTED QUALITY CORROSION TO IS: 1786 LATEST. 2. REFER TO HIGH YIELD STRENGTH REINFORCED BARS WITH CHARACTERISTIC STRENGTH OF 500 MPa. 3. THE CLEAR COVER TO REINFORCEMENT SHALL BE AS FOLLOWS: <ul style="list-style-type: none"> 50MM WALL PENETRATION 40MM FLOOR BEAM 50MM COLUMN 50MM BEAM 50MM COVER TO SECONDARY REINFORCEMENT ASAP SHALL NOT BE LESS THAN 25MM. 4. LAP LENGTH TO BE 50% OF BAR MINIMUM. 5. SOLID BARS IN REINFORCING OPERATIONS SHALL BE IN BEAMS, FIRST STABILY SHALL BE AT NO MORE THAN 50MM FROM FACE OF THE SUPPORTING MEMBER. 7. REINFORCING BARS ARE NOT TO BE SPACED MORE THAN 150MM FROM THE TOP AND THE BOTTOM BARS ARE NOT TO BE SPACED AT MORE THAN 150MM FROM THE TOP AND THE BOTTOM HALF OF THE SPAN. <p>STEEL WORK</p> <ol style="list-style-type: none"> 1. USE ALL INDIAN STANDARD ROLLED SECTION. 2. IF THERE ANY JOINTS IN LONG MEMBERS NOT TO BE PROVIDED AT CENTER AND TO BE PROVIDED FOR THE ALL EDGES AND ENDS TO BE MACHINE CUT. 3. ALL EDGES AND ENDS TO BE MACHINE CUT. 4. ALL EDGES TO BE FILED NOT FINISHED 1.5MM. 5. ALL CLEAR OR ANGLES SECTION TO BE ISA. 6. ALL CLEAR OR ANGLES SECTION TO BE ISA. 7. ALL COVER & STIFFENING PLATE ARE OF 8MM THICK. 8. STIFFENING PLATE ARE OF 8MM THICK. 9. WELD STRENGTH IS 250 NMM2. 10. WELD STRENGTH IS 250 NMM2. 11. FOLLOW IS 808 FOR HOT ROLLED SECTION AND HIGH TENSILE STRUCTURAL STEEL SPECIFICATION. 12. FOLLOW IS- 1191 FOR RECTANGULAR HOLLOW SECTION. <p>PROJECT SPECIFICATION</p> <ol style="list-style-type: none"> 1. THE NET GATE BEARING CAPACITY OF SOIL IS TAKEN AS 9 TONS/M² AT 2000 DEPTH FROM THE SOIL. <p>SIGNING AUTHORITY</p> <table border="1"> <tr> <td>DESIGNED BY</td> <td>CONSULTANT</td> </tr> <tr> <td>CHECKED BY</td> <td></td> </tr> <tr> <td>APPROVED BY</td> <td></td> </tr> </table> <p>DATE SCALE</p> | | DESIGNED BY | CONSULTANT | CHECKED BY | | APPROVED BY | |
| DESIGNED BY | CONSULTANT | | | | | | | |
| CHECKED BY | | | | | | | | |
| APPROVED BY | | | | | | | | |

Complete drawing of Stand Post with all civil works



WATER STAND POST FOUNDATION

TOP VIEW



FRONT VIEW

Rajiv Khare
RAJIV KHARE
Superintending Engineer
C.G. State Renewable Energy
Development Agency (CREDA)
H. O. RAIPUR

Approved Drawing of
Standpost and its Foundation

CREDA HO RAIPUR

2) CONCRETE FOUNDATION COMPOSITION AS 1 PART CEMENT : 2 PART SAND : 4 PART METAL
3) FOUNDATION PLAN WILL VARY AS PER CONDITION OF GROUND FORMATION

Complete drawing Special Water Chamber for installation of Solar Drinking Water pump in existing hand pump

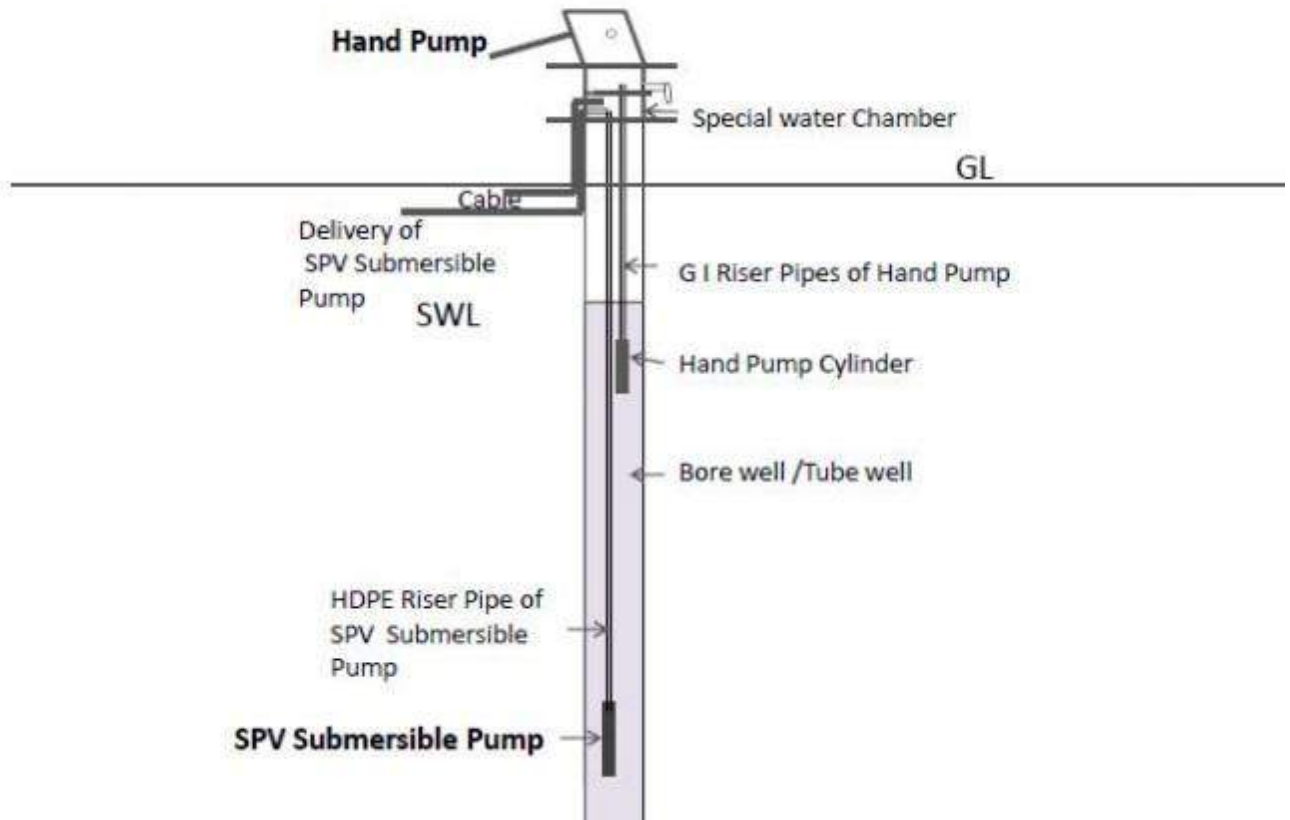
Special Water Chamber



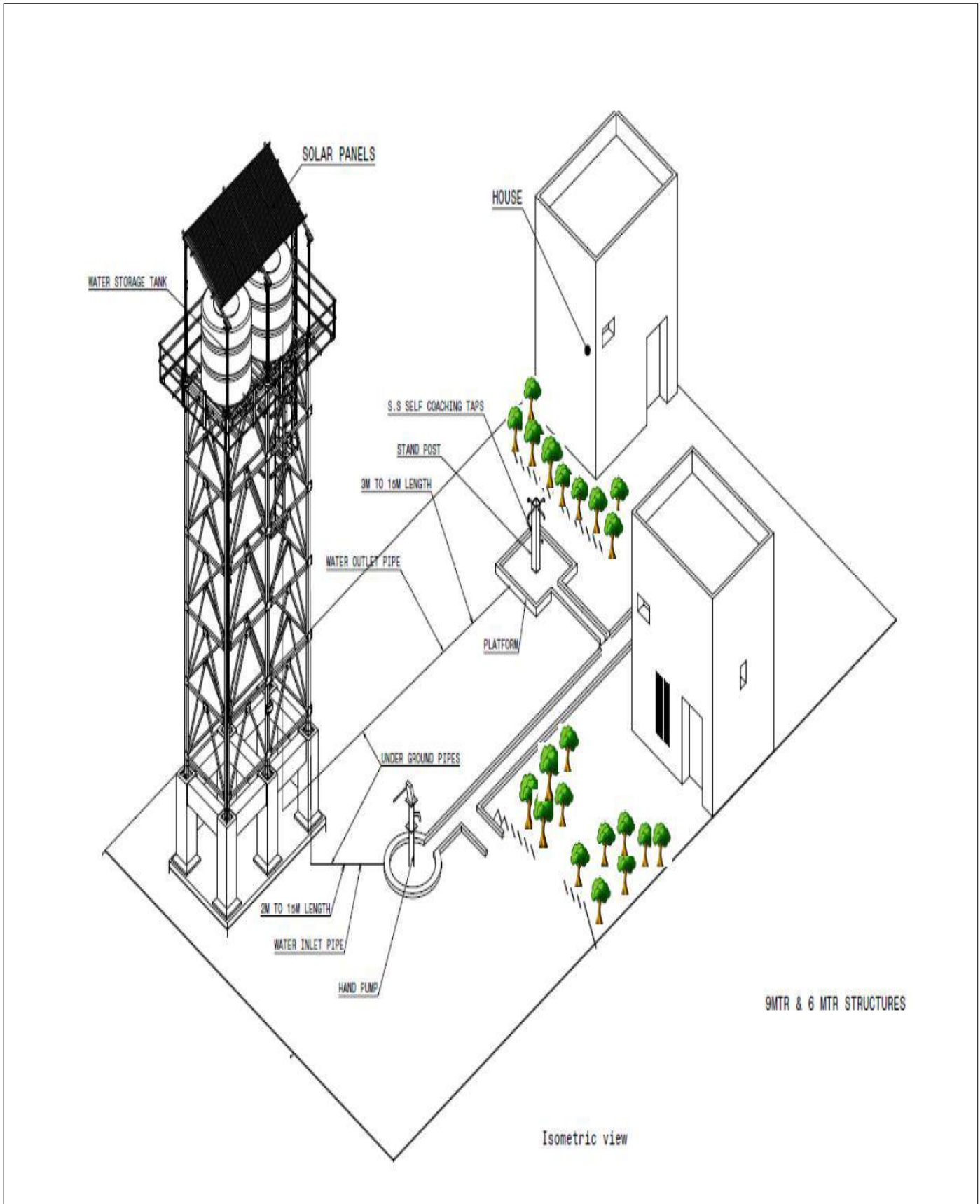
Inlet for rooftop rainwater harvesting



**Schematic Drawing of Solar Energy based Dual Pump System.
Arrangement of two pumps in one Bore well**



Indicative Layout of solar Drinking Water Pump Installation



ANNEXURE-VIII

e – Price Bid

Schedule of Rates for SPV Drinking Water Pump (Submersible Pumps)

(e – Bidding as per Specifications & Scope of Work of No.102066/CREDA/SDWP/2022-23 Dated: 13.06.2022)

Rates for design, Supply, Survey, Installation and Commissioning of **Solar Photovoltaic Drinking Water Pumps (SPV DRINKING WATER PUMP)** anywhere in the State of Chhattisgarh as per tender specifications.

| S. N. | Particulars | Rates for supply of Solar Drinking Water Pumping System with Solar Module, Controller, MTMS Structure, L.A, Earthing-02 Numbers., Rope wire, Cable, PVC & GI Pipes and other required BOS with five years unconditional onsite warrantee, System, testing (Excluding GST and CMC) | Rates for Installation and commissioning of solar Drinking Water pump system including Civil work (Structure), excl. GST | TOTAL AMOUNT IN RS. (Ex. GST) | Rates of 05 years CMC during the warranty period (excl. GST) |
|-------|---|---|--|-------------------------------|--|
| | | A | B | C=A+B | D |
| A | SPV Drinking Water Pumps 900 Wp / 1.0 HP DC Submersible with 06 Meters staging and 5000 Litres Storage Tank | | | | |
| B | SPV Drinking Water Pumps 900Wp / 1.0 HP DC Submersible with 06 Meters staging and 10000 Litres Storage Tank | | | | |

Certified that rates quoted above are as per the requirement, specifications, and terms & condition mentioned in the bid document.

Above rates are FOR anywhere in the State of Chhattisgarh inclusive of roadworthy packing, loading, unloading, all types of incidental expenses, insurance, duties and any other job required to properly execute the work with 5 years warrantee as mentioned in the bid document (Above rates applicable for pump models for each category as per MNRE and CREDA Specifications stated in Bid document (Page 24-60)). The GST payable on the bill produced for payment to CREDA shall be paid in addition to above quoted price as per rate of GST applicable at the time of billing.

(No other cost will be claimed above the price quoted & the applicable GST).

Signature of the Authorized Signatory:

Seal of company:

Date:

DRAFT AGREEMENT

CONTRACT AGREEMENT BETWEEN Chief Engineer Chhattisgarh State Renewable Energy Development Agency (CREDA) Raipur AND M/s..... Represented by THIS CONTRACT AGREEMENT against Bid No. 102066/CREDA/SPVDWP-2/2022-23 DATE-13-06-2022 (also referred to as “Service Contract”) is made on the XXth day of ----- ---- 2022.

BETWEEN

(1) Chief Engineer Chhattisgarh State Renewable Energy Development Agency (CREDA) Raipur a society incorporated under the laws Society Registration Act 1973 , (1973 , Sr. No. 44) (with amendment from time to time) and having its Registered Office at VIP Road Near Energy Education Park, Village- Fundhar, Raipur and (hereinafter called “The Employer” and also referred to as “CREDA”)

And

(2)Represented bya company incorporated under the laws of Companies Act 1956/2013/ Partnership firm/ Proprietorship firm/Consortium (as applicable, with amendment from time to time) and having its Principal place of business at.....and Registered Office at.....hereinafter called “The Contractor” and also referred to as “.....”

Whereas the contractor has offered to enter into contract with the said CREDA for the Supply of Solar Drinking Water Pumps and for installation, commissioning and comprehensive maintenance of Solar Drinking Water Pumps with 5 years Warrantee for the capacities of Min.900 Wp/1 HP/6Mtr with 5KL Water Storage tank and Min.900Wp/1HP/06Mtr with 10KL Water Storage tank.

Vide Bid No. 102066/CREDA/SPVDWP-2/2022-23 DATE-13-06-2022on the terms and conditions herein contained and the rates approved by the CREDA (Letter No..... dated annexed here to) have been duly accepted and whereas the necessary security deposit shall be furnished in accordance with the provisions of the Bid document and whereas no interest will be claimed on the security deposits.

Now these presents witness and it is hereby agreed and declared by and between parties to these presents as follows -

- 1) The Contractor shall, during the period of this contract, that is to say from toor completion thereof, until this Contract shall be determined by such notice as is hereinafter mentioned, safely carryout, by means of labours employed at his own expenses and by means of tools, implements and equipment etc. to be supplied by him to his labour at his own expenses, for installation of “Solar Drinking Water Pumping systems” as described in Bid documents. (Annexed to the agreement).
- 2) The NIT (Notice Inviting Bid), Corrigendum to NIT, Notices, Bid documents (Qualifying, Technical and Financial), approved rates annexed hereto and such other additional particulars, undertaking, instructions, general conditions of contract, Scope of work, Technical specifications of Solar Pumping Systems and Annexures therein, engineering documents, detailed specifications of BOS & drawings, so far they relate to the Bid No. 102066/CREDA/SPVDWP-2/2022-23 DATE-13-06-2022 as may be found requisite to be given during execution of the work shall be deemed and taken to be an integral part of the

contract and shall also be deemed to be included in the expression "The Agreement or "The Contract "wherever herein used.

- 3) The contractor shall also supply the requisite number of workmen with means & materials as well as tools, appliances, machines, implements, vehicles for transportation, cartage etc. required for the proper execution of work within the time prescribed in the work orders and /or as per the Bid conditions.
- 4) The Engineer-in-Charge or his authorized representative (s) shall be entitled at all reasonable times to inspect and supervise and test during installation and commissioning. Such inspection will not relieve the eligible SI from their obligations under this contract.
- 5) Material can be inspected before dispatch or in transit by the authorized representatives of CREDA at the factory at the cost of the eligible SI, if desired by CREDA. CREDA reserves right to inspect the material at Godowns / Temporary Stores before dispatch and also at works sites.
- 6) CREDA shall deduct TDS for Income Tax, applicable cess on Civil Work etc. under various acts and deposited with the appropriate authority. Costs and taxes before execution of agreement with CREDA so as to ensure tax deposition as per Government Rules accordingly.

7) **ELIGIBLE SYSTEM INTEGRATOR'S DEFAULT LIABILITY -**

CREDA may by written notice of default to the eligible SI, terminate the contract in circumstances detailed hereunder -

- (a) If in the opinion of the CREDA, the eligible SI fails to complete the work within the time specified in the Work Order or within the period for which extension has been granted by CREDA to the eligible SI.
- (b) If in the opinion of CREDA, the eligible SI fails to comply with any of the provisions of this contract.
- (c) In the event of CREDA terminating the contract in whole or in part as provided in paragraph (a) above, CREDA reserves the right to engage another eligible SI or agency upon such terms and in such a manner as it may deem appropriate and the eligible SI shall be liable to CREDA for any additional costs or any losses caused to CREDA as may be required for the completion of erection of the SPV Pumps and or for penalty as defined under this Bid document until such reasonable time as may be required for the final completion of the work.
- (d) In the event CREDA does not terminate the contract as provided in paragraph (a) the eligible SI shall continue performance of the contract, in which case he shall be liable to CREDA for penalty for delay as set out in this Bid document until the work is completed.

8) **FORCE MAJEURE -**

The eligible SI shall not be liable for any penalty for delay or for failure to perform the contract for reasons of FORCE MAJEURE such as of God, acts of public, enemy, LWE problems, acts of government, cyclone, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes provided that if SI shall submit delay notice with appropriate cause of delay to the CREDA in writing within **15 days** of force majeure. CREDA shall verify the facts and may grant such extension as facts justify. Delay in supply of any accessories of Solar Pumps etc. by the related vendors, to whom the Bidder has placed order, shall also not be treated as force majeure.

9) **REJECTION OF WORKS -**

In the event of any of the material supplied/work done by the eligible SI is found defective in material or workman ship or otherwise not in conformity with the requirements of this contract specifications, CREDA shall either reject the material and/or work and advise the eligible SI to rectify the same. CREDA may impose penalty for such rejection up to the 200% cost of the entire system. Habitual/repeated offenders shall be black listed/debarred to participate in the any Bid/ Activity of CREDA till further orders. The eligible SI on receipt of such notices shall rectify or replace the defective material and rectify the work free of cost. If the eligible SI fails to do so CREDA may -

- a) At its option replace or rectify such defective materials and/or work and recover the extra cost so involved from the eligible SI plus **15%** service charges of the cost of such rectification, from the eligible SI and/ or terminate the contract for balance work/supplies with enforcement of penalty as stated above.
- b) Defective materials/workmanship will not be accepted under any conditions and shall be rejected outright without compensation. The eligible SI shall be liable for any loss/damage sustained by CREDA due to defective work **with enforcement of penalty as stated above.**

10) EXTENSION OF THE TIME -

If the completion of installation is delayed due to any reason beyond the control of the eligible SI, the eligible SI shall without delay give notice to the CREDA in writing of his claim for an extension of time. CREDA on receipt of such notice may or may not agree to extend the contract/delivery date of the solar Drinking Water pump as may be reasonable but without prejudice to other terms and conditions of the contract.

11) PENALTY FOR DELAY IN COMPLETION OF CONTRACT -

- a. If the eligible SI fails to complete the assigned work within the schedule time specified in the Work Order or any extension granted there to, CREDA will recover from the SI as penalty a sum of up to **One per cent (1%)** of the system price excluding GST for every delayed system per month. For this purpose, the date of taking over shall be reckoned as the date of completion. The total penalty shall not exceed **5% (Five Per cent)** of the cost.
- b. Review of the progress of installation of SPV Drinking Water pump allocated to SIs shall be done time to time by CREDA and if the progress of installation is found unsatisfactory, the allocation of entire remaining uninstalled pumps or their part of can be re-allocated to other SI as per discretion of CREDA.

12) RESPONSIBILITY OF ELIGIBLE SI -

Notwithstanding anything mentioned in the specifications of subsequent approval or acceptance of the SPV Drinking Water Pump by CREDA, if any, the ultimate responsibility for satisfactory performance of the entrusted work shall rest with the eligible SI. If in any case the eligible SI does not complete the work as per the Work Orders issued to them then CREDA may take over the task & complete the project at the risk and cost of eligible SI.

13) PENALTY DUE FROM THE ELIGIBLE SI -

All costs of damages and delays for which the eligible SI is liable to the CREDA will be deducted from any money due to the eligible SI including the security deposit and other pending payments of any project under CREDA.

14) RESPONSIBILITY TO RECTIFY THE LOSS AND DAMAGE -

If any loss or damage occurs to the work or any part thereof or materials/plant/equipment's for incorporation therein the period for which the eligible SI is responsible for the cause thereof or from any cause whatsoever, the eligible SI shall at his own cost rectify/replace such loss or damage, so that the permanent work confirms in every respect with the provision of the contract to the satisfaction of the Engineer. The eligible SI shall also be liable for any loss or damage to the work/equipment's occasioned by him in course of any operation carried out to him during performing the contract.

15) RESPONSIBILITY TOWARDS THE WORKMAN OR OUTSIDERS –

- A. **The eligible SI shall have to take insurance coverage from any authorized Insurance Company against Workmen compensation due under Workmen Compensation Act and submit copy of the insurance document before issuance of Work Order.**
- B. The eligible SI shall ensure all safety measures during execution and repairs of the work. CREDA, will, in no case be responsible for any accident fatal or non-fatal, caused

to any workman or outsider in course of transport or execution or repairs of work.

- C. All the expenditure including treatment or compensation will be entirely borne by the eligible SIs. The eligible SI shall also be responsible for any claims of the workers including, labour payments PF, Accidental Insurance, Gratuity, ESI & other legal obligations.
- D. CREDA shall have all rights to deduct such claims of payments from SI in case of complaints of such violations.
- 16) Contractor shall provide 05 years Warrantee in installed solar pump from the date of commissioning as per the terms & conditions prescribed in the Bid No. 102066/CREDA/SPVDWP-2/2022-23 DATE-13-06-2022.
- 17) **DECLARATION OF CONFLICT OF INTEREST –**
- A. Any regular employee working or worked on basis of contract or through placement agency cannot work directly or indirectly in any scheme of CREDA. If such a person is found working with any SI or through sublet then, such SI shall be blacklisted for three years.
- B. The bidder shall not be permitted to Bid for the work if the section of HO CREDA (responsible for implementation of work) in which his near relative is posted. Furthermore, the successful bidder shall not be given work in the district in which his near relative is posted. The bidder shall also intimate the names of his near relatives working in CREDA. Bidder shall also intimate the name of persons who are working with him in any capacity and who are near relatives to any employee in CREDA. Any breach of this condition by SI would render himself liable to be blacklisted for three years and removed from approved list of SIs in CREDA.
Note:- By the term near relatives are meant Wife, Husband, Parents and son, Brother, Sister, Brother-in-law, Father-in-law, and Mother-in-law etc.
- C. Bidder must produce an affidavit (Annexure – IX) stating the names of retired/removed employee of CREDA (if any) in his employment who retired /removed within last two years, if in case there is no such person in his employment, his affidavit should clearly state this fact. This affidavit is mandatory, if it is not produced along with the bid, the bid shall be rejected.
- 18) The contractor shall arrange insurance coverage for the materials and SPV Drinking Water Pumps at his/beneficiary's custody for the work under execution and successful commissioning and subsequent handover to the beneficiary. The contractor shall take up insurance or such other measures for the manpower so as to cover the claim for damage arising under workmen's compensation Act and other applicable State/ Central laws. CREDA shall not bear any responsibility on this account.
- 19) The contractor shall abide by the terms and conditions, rules, guidelines, construction practices, safety precautions etc. stipulated in the Bid document including any correspondence between the contractor and the **CREDA** having bearing on execution of work and payments of work to be done under the contract.
- 20) The contractor shall be responsible to follow all the laws including Workmen Compensation Act and all other laws in force & shall be responsible for all the obligations towards labour including EPF, ESI, etc.
- 21) All the taxes deductible at source as per Acts in vogue shall be recovered by **CREDA** and deposited with the appropriate authorities
- 22) Contractor agrees to abide by any decision/instruction passed by the appropriate authority under Anti-profiteering rules notified by the state/central government under GST act.
- 23) Any dispute arising out of the contract shall be subject to the jurisdiction of Hon'ble High Court of Chhattisgarh.

"Herewith everything and anything contained in Bid document no. 102066/CREDA/SPVDWP-2/2022-23 DATE 13-06-2022 is part of this agreement which has been dully signed by both bidder and authorised signatory of CREDA".

In witness whereof the parties present today has hereby entered into agreement.

Signed & sealed on behalf of the above

Named contractor

Name :

Designation :

Signed on behalf of CREDA

Name:

Designation:

Witness:

1. Name:-.....

Address:-.....

.....

2. Name:-.....

Address

.....

Ref. Bid Document No.:_____.

DECLARATION FOR USING SAME MAKE OF EQUIPMENTS AS PER THE TEST CERTIFICATE

From:
M/s _____

Sub: Declaration for using same make of equipment's as per the test certificate

We are agreeing to accept that the same make of solar panels, pumps, VFD/inverter/controller for which the test report is to be submitted under this Bid to CREDA, is as per Guidelines and Procedures mentioned in the bid and will be supplied by us. We declare to procure the components mentioned above only from the Vendors registered with CREDA.

In case if some different make of solar panels, pumps, VFD/inverter/controller will be supplied during the implementation or CMC period, we will submit the test report for that particular make component(s). We also agree that such test reports shall be issued by the National Institute of Solar Energy and any other lab accredited by NABL for testing of solar PV water pumping system as per MNRE specifications and testing procedure.

Name of Authorized Signatory

**Signature of suppliers
(With stamp)**

SCHEDULE - I

PART 'A': GENERAL INFORMATION

(Strike off whichever is not applicable. Separate sheets should be used, wherever necessary)

- 01.** Name & Address of the Bidder :
- 02.** Name & Address of the firm/Company etc. :
- a) Registered office :
- b) Factory/works address :
- c) Fax Numbers. :
- d) Telephone / Mobile Numbers. :
- e) Email id :
- 03.** Confirm whether Bidder is Manufacturer : Yes/No
- 04.** Only manufacturer to give following particulars
- a) Address of factory :
- b) Year of starting manufacture :
- c) Whether same/similar materials :
Manufactured earlier
(if yes, give reference)
- d) Yearly/monthly production capacity :
- e) Maximum yearly production :
Achieved so far
- 05.** Whether the firm is SSI Unit of : Yes/No
Chhattisgarh State:
- a) If yes, write registration No. :
- b) Whether documentary evidence :
Regarding registration enclosed
- c) Items for registration :
- d) Period of registration :
- d) Whether latest copy Competency/ : Yes/No
Certificate furnished
- 06.** Whether the firm is 100% owned by
- a) State Government : Yes/No
- b) Central Government : Yes/No
If yes, Notification/certificate issued from : Yes/No
The competent authority to this effect is
Enclosed
- 07.** a) Whether the bidder is old participant : Yes/No
with CREDA
- b) If yes, whether documentary : Yes/No
Evidence is enclosed.
- 08.** Any other information that bidder may like : If yes, give details
to give in order to highlight his bid

PLACE :

SIGNATURE OF BIDDER

NAME IN FULL

DATE :

DESIGNATION/STATUS

FIRM/COMPANY SEAL

SCHEDULE - II

PART 'B' : COMMERCIAL INFORMATION

(Strike off, whichever is not applicable. Separate sheets should be used. Wherever necessary)

- 01 i). Earnest Money Details : Bank draft/Bankers cheque payable to "CREDA", Raipur
- ii) Amount of E.M.D. & full details :
- 02. Whether the offer is valid for 6 months from the date of opening of commercial/technical bid. : Yes/No
- 03. Rate of Sales Tax on the date of bid (exclusive in the rate quoted) :
- 04. **DISCOUNT:**
 - a) Whether any rebate/discount is offered. : Yes/No
 - b) If yes, whether the rebate is unconditional/conditional Rate/amount of rebate/discount : Yes/No
 - c) If conditional State condition : Yes/No
- 05. **PAYMENT TERMS:** Whether CREDA's terms of payment is acceptable to Bidder : Yes/No
- 06. **COMPLETION PERIOD OF WORK:** Whether Bidder is agreeing for completion period of work as Specified in the Bid : Yes/No
- 07. **PENALTY CLAUSE:** Whether agreeable to CREDA's Penalty Clause : Yes/No
- 08. Whether agreeable to CREDA's clause of warrantee period : : Yes/No
- 09. **SECURITY DEPOSIT:** Whether Security Deposit clause is understood : Yes/No
- 10. Indicate State, Central Sales Tax Registration NumberState/ Central : Yes/No
(Please Note that in case of non-registration with Commercial Tax, Department Purchase Tax as admissible shall be deducted by the Purchaser from the Bills of the supplier)
- 11. Please mention whether rates offered are applicable for part quantities. : Yes/No

PLACE:

SIGNATURE OF BIDDER

DATE:

NAME IN FULL
DESIGNATION/STATUS
FIRM/COMPANY SEAL

SCHEDULE - III

PART 'C' : TECHNICAL INFORMATION

(Strike off whichever is not applicable. Separate sheets should be used. Wherever necessary)

01. Whether material offered is exactly as per technical specification : Yes/No
02. Whether the copies of completion certificate received during last 3 years : Yes/No
from other State Nodal Agency or from other Organization for Solar pumping
systems (if yes, give details) enclosed.
03. Whether pamphlets/technical details literatures along with drawing etc. : Yes/No
furnished with the offer (if yes, give details)
04. Whether the Bidder agrees to furnish material test certificates in : Yes/No
respect of chemical composition and physical properties from Govt./
Govt. approved lab with each batch of supplies.
05. Whether the Bidder has furnished details of manufacturing : Yes/No
equipments and short history of plant (if yes, give details)
06. Whether details of manufacturing process furnished with offer. : Yes/No
(if yes, give details)
07. a) Whether all testing facilities are available. : Yes/No
If so, give details and in case of non-availability of facilities indicate
approved lab available in surrounding areas where tests are proposed to be conducted.

PLACE

SIGNATURE OF BIDDER

DATE

NAME IN FULL

DESIGNATION/STATUS

FIRM/COMPANY

SEAL

SCHEDULE - IV
TECHNICAL DEVIATIONS

From,
Bidder Name & Address -

To,
The CE,
CREDA, HO,
Raipur

Sub – Technical Deviations.

Dear Sir,

The technical deviations & variations to the specifications stipulated in the Bid, for the item quoted are as under -

| Sl. No. | Condition of Bid document | Clause No. of Bid document | Page No. | Statement of deviations and variations |
|----------------|----------------------------------|-----------------------------------|-----------------|---|
|----------------|----------------------------------|-----------------------------------|-----------------|---|

-

-

2. Except aforesaid deviations, the entire order, if placed, on us shall be executed in accordance with your specifications and other conditions. Variation/deviations etc. if found, elsewhere in our offer should not be given any considerations while finalizing the Bid.

PLACE

SIGNATURE OF BIDDER

DATE

NAME IN FULL

DESIGNATION/STATUS

FIRM/COMPANY SEAL

NOTE - Continuation sheet of like size & format may be used as per bidder's requirements and shall be annexed to this schedule.

Site Selection Form

FORM-A

Date : _____

Name of Village _____

Name of Block _____

Name of District _____

Location of Borewell _____

(eg. Distance from house _____
owner, temple or any _____
other landmark.)

Type of Existing Pump Hand Pump Submersible Pump None
Diameter of Borewell 4 inch 6 inch other _____

Depth of Borewell as per record (eg. 30 mtrs.) _____ meters

Existing Depth of Borewell (eg. 30 mtrs.) _____ meters

Length of Casing Pipe (eg. 20 mtrs.) _____ meters

Yield of Borewell (Min, 2,500 lit/hr) _____ liters/hour

Static Water Level (eg. 10 mtrs.) _____ meters below ground level

Pumping Water Level (Max. 40mtrs. Where water Level is stable while pumping) _____ meters below ground level

Material Delivery Contact _____ Material Delivery _____
(person to approach when detiv- _____ $\frac{Name}{Mobile}$ Place (location to store
erring equipment & material)

..... & its contractors are allowed to work for the installation of Solar Hand Pump System.

**Assistant Engineer/District Incharge
CREDA, District Office**

**Beneficiary Department
representative**

**Surveyor/Representative of
Company**

(Signature & Seal)

(Signature & Seal)

(Signature & Seal)

Name

Name

Name

Mobile number

Mobile number

Mobile number

Date : _____

FORM-B

Site Selection Criteria

Name of Village

Name of Block

Name of District

- Yield of the bore well should not be less than 2,500 litres/ hour
- Pumping Water Level should not be more than 40 meters.
- Identified bore well should not have any obstacles such as tree roots, stones, etc.
- Identified bore well diameter should not be less than 100mm. or 4 inches.
- Water from the identified bore well should not be muddy at the depth at which the pump is expected to be installed.
- Tank tower location should not have any tree in the 15 meter periphery.
- The tank tower location should not have any transmission lines in the vicinity.
- Building structures more than 3 meters tall should not be near the tank tower location so that no shadow of any tree or house falls on the tank tower throughout the day.
- Distance between the stand post and tank tower should not be more than 15 meters and the distance between bore well and tank tower should not be more than 15 meters.
- The stand post location should have natural slope for drainage of accumulated water.

**Assistant Engineer/District Incharge
CREDA, District Office**

**Beneficiary Department
representative**

**Surveyor/Representative of
Company**

(Signature & Seal)

(Signature & Seal)

(Signature & Seal)

Name & Mob. Number

Name & Mob. Number

Name & Mob. Number

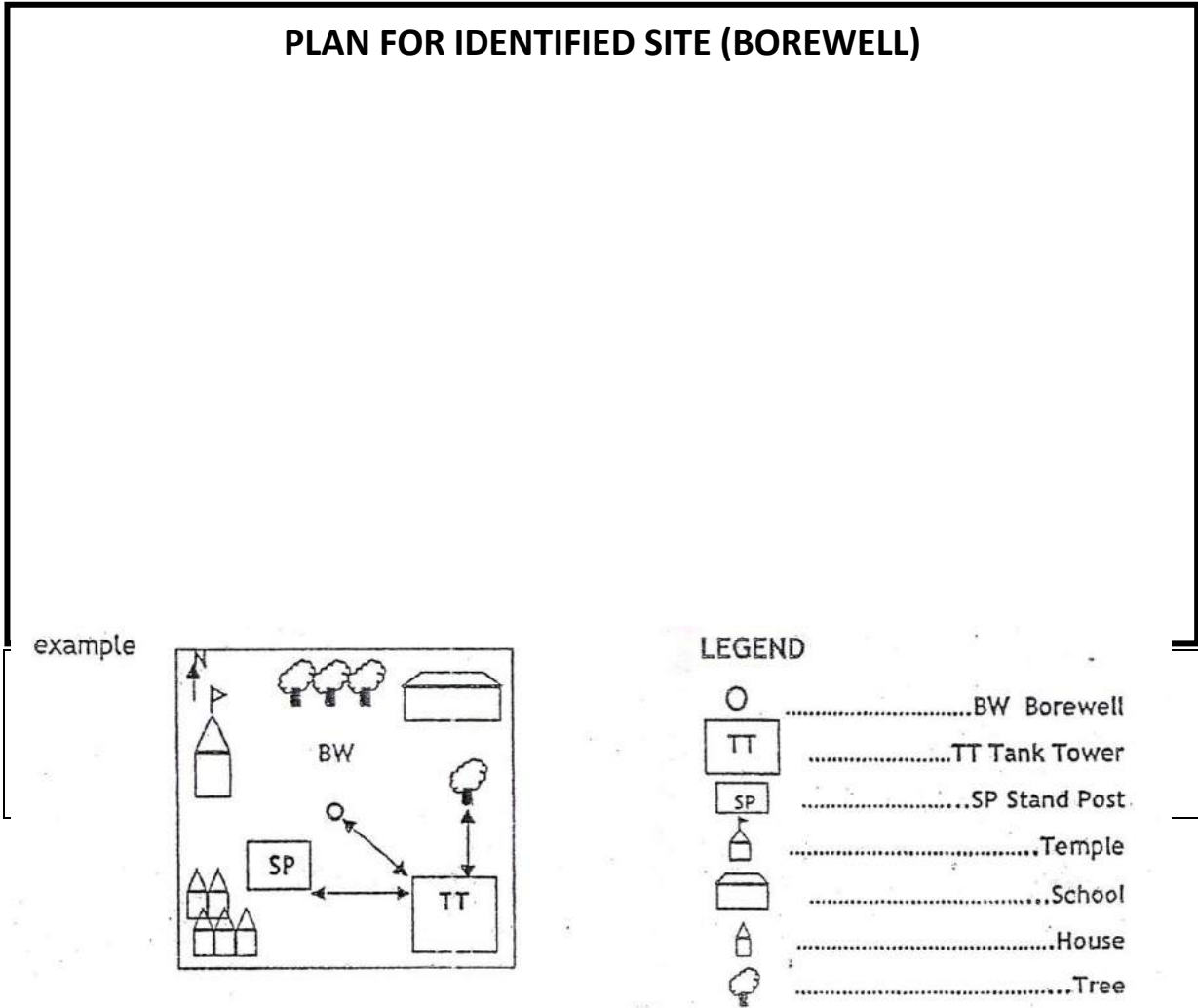
Plan of Site

FORM-C

Block _____ for installation of

District _____ **Solar Pump**

Date : _____



**Assistant Engineer/District Incharge Beneficiary Department
CREDA, District Office representative**

**Surveyor/Representative of
Company**

(Signature & Seal)

(Signature & Seal)

(Signature & Seal)

Name & Mob. Number

Name & Mob. Number

Name & Mob. Number

END