

TENDER DOCUMENT FOR

Design, Supply, Installation & Commissioning

of

SPV Water Pumping Systems in all over Telangana State

Under

Off – grid and Decentralized Solar Applications

of JNNSM, MNRE, GOI.

NAME OF FIRM:.....

Tender Notice No.: TSREDCO/SE/SPV Pumps/RC/2018-19, Dated.13.07.2018

Closing Date: 25.07.2018 at 3:00 PM



TELANGANA STATE RENEWABLE ENERGY DEVELOPMENT CORPORATION LTD (TSREDCO)

Corporate Office: D. No. 6-2-910, Visvesvaraya Bhavan,
The Institution of Engineers Building, Khairatabad, Hyderabad - 500 004.
Telangana State, India

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Web site: www.tsredco.telangana.gov.in

BRIEF HIGHLIGHTS OF THE TENDER

- 1) The Tender is intended to select successful bidders for supply and installation and commissioning of 3HP / 5HP / 7.5HP Solar PV Water Pumping systems anywhere in Telangana state for agriculture / water pumping purpose as per MNRE technical specifications of 2015-16 and other guidelines
- 2) The bidders are required to meet the following criteria to be eligible for participation:
 - a. The bidder should be a Registered Company with manufacturing facility in India for: -
 - SPV Cells / Modules OR –
 - Motor-pump Sets OR –
 - Solar Pumps Inverter (Tested & Certified by MNRE accredited lab) (as per certificate from DIC).

AND

A PV System Integrator registered with TSREDCO for year 2018-19

- b. Bidders must possess Test report of the MNRE/MNRE authorized test centers issued as per the MNRE technical specifications of 2015-16 on their name for 3 HP / 5 HP / 7.5HP capacity AC / DC model solar pump sets.
 - c. Bidder should have an average turnover of at least, **Rs 1.00Crores** in last three years. (*A summarized sheet of turnover certified by registered CA should be compulsorily enclosed*).
 - d. The bidder shall have the experience of minimum of **05 nos. of 3P / 5HP / 7.5 HP Solar PV pump sets** (AC or DC) in the last 3 years under **any Govt. programme in the country** for supply, installation, testing, and commissioning and maintenance/after sales service in the field of Off- Grid Solar PV water pumping systems. The details must be submitted in the Format given in Technical- Bid section of tender document with proper valid documents.
 - e. The Bidder should have valid State GST/ TIN registration certificate in that state. A copy of which should be enclosed.
 - f. In addition, *the bidders are responsible to meet all the technical specifications of 2015-16 of MNRE and as amended by MNRE from time to time to avail the subsidy.*
- 3) Bidder should not be blacklisted by any Govt. Agency.

- 4) The bidders are required to participate in the bidding process as per the following guidelines:
- a. Quote the best price for Design, Supply, Installation and Commissioning of SPV water pumping system under turnkey basis adhering to MNRE technical specifications of 2015-16 and including transportation, 5years insurance and Comprehensive Maintenance Contract for a period of 5 years from the date of installation. This price shall be valid for a **period of one year** and TSREDCO shall have the discretion to extend the validity period if so warranted.
 - b. The bidders are advised to submit the component wise cost details with brand name in the proforma enclosed to this bidding document. **The company/brand of components like panels, Pump set, VFD etc shall be as per the certificate issued by MNRE authorized test centres only.**
This shall be enclosed to the financial bid document.
 - c. The tenderers are advised to submit the technical bid, financial bid in separate covers duly super scribing the details as mentioned in the tender document.
- 5) The allocation principles of the bid process are as follows:
- a. The financial bids of all the technically Qualified Bidders shall be opened.
 - b. The lowest financial bid received will be marked L1 and will be treated as finalized price. The purchase orders will be placed as per requests received from the concern departments / beneficiaries and as market mode. For placing PO the bidder's performance in execution of the earlier experiences / works and turn over will be taken into consideration.
 - c. The successful bidders who are not entered the agreements duly paying the security deposits or failed to execute the order, their security deposit will be forfeited and will be black listed under intimation to MNRE and other nodal agencies in the country.
- 6) Bid processing cost (Non-refundable) of Rs. 10,000/- (Rupees Ten Thousand) plus 18% GST by way of DD in favour of TSREDCO is required to be furnished by each bidder at the time of bid submission.
- 7) An Bid Security Deposit / EMD (refundable) of Rs. 2,00,000/- (Rs: Two Lakhs) would be deposited by each bidder in favor of TSREDCO at the time of bid submission by way of DD or by way of Bank Guarantee OR The payment of EMD shall be exempted to the bidders those who are having valid certificates issued by The National Small Industries Corporation Ltd (**NSIC**) / Ministry of Micro Small and Medium Enterprises (**MSME**), Govt. of India.
- 8) Performance security deposit (refundable) of Rs. 2,00,000/- (Two lakhs) for one year period shall be submitted by the Successful Bidder(s) at the time of agreement, which would be released after completion of rate contract period .

- 9) Successful Bidder needs to commission the pump set within 45 (forty five days) days from the date of issue of work order.
- 10) The bidder shall provide **RFID Readers and Water meters** to the inspecting team at the time of the inspection of the installed systems.
- 11) After successful commissioning and on submission of required documents, release of payments will be as follows:
- a) TSREDCO will be released the 70% amount of Purchase order value (i.e. eligible MNRE, State subsidy & beneficiary contribution) after joint inspection of TSREDCO, Beneficiary / Concerned officials and supplier.
 - b) 20% amount will be released after 30 days of Successful performance and satisfactory of beneficiary / concerned authorities.
 - c) The retained 10% (Ten percent) amount will be released completion of five years period without any interest.
- 12) VC & Managing Director, TSREDCO is having all rights to amend/alter any clause or terms and conditions of this tender document and that will be notified in the TSREDCO website before 48 hours of the closing date of the tender
- 13) Any dispute/legal issues arising out of this tender are subject to jurisdiction of High Court Judicature at Hyderabad for the state of Telangana and Andhra Pradesh.
- 14) The time schedule of the Tender is as follows:

Sl. No	Particular	Time line
1	Date of Issue of the Tender Notification/in website	13.07.2018
2	Last date for submission of the Tenders	25.07.2018 at 03.00 PM
3	Opening of Technical Bids	25.07.2018 at 03.30 PM at TSREDCO, Head Office, Hyderabad
4	Opening of Financial Bids	28.07.2018 at 11.00 AM at TSREDCO, Head Office, Hyderabad

TECHNICAL BID
PART – 1
GENERAL DETAILS

<u>PARTICULARS OF TENDER</u>		
S. NO	PARTICULARS	DETAILS
1	Tender Notice No	TSREDCO/SE/SPV Pumps/ RC/2018-19/Dated.__.07.2018
2	Name of the work	Design, Supply, Installation and Commissioning of Solar PV Water Pumping systems comprising of SPV Modules, VFD/Inverter, Remote Monitoring, AC & DC Surface / Submersible Pump, Mounting Structure, Tracking, Cables, HDPE Pipe etc. as per MNRE Technical Specifications of 2015-16 (Test Reports), inclusive of CMC and Insurance for 5 years on turnkey basis
3	Eligibility for participation	<p>a. Bidders must possess Test reports of the MNRE/MNRE authorized test centres issued as per the MNRE Technical specifications of 2015-16 on their name for 3 HP / 5 HP / 7.5HP capacity AC & DC model solar pump sets they are quoting.</p> <p>b. Bidder should have an average turnover of at least, Rs.1.00Crores in last three years. (A summarized sheet of turnover certified by registered CA should be compulsorily enclosed).</p> <p>c. The bidder should have registration with TSREDCO as a PV System Integrator for year 2018-19</p>
4	Period of Contract	Valid for One year from the date of finalization rates
5	Cost of tender document	Rs.10,000/- plus 18% (GST) by way of DD
6	Last date & time of submission	25.07.2018 by 3.00PM
7	Amount of EMD	Rs. 2,00,000/- by way of Demand Draft drawn in favour of TSREDCO , payable at Hyderabad or Rs.4,00,000/- amount of Bank guarantee from a nationalized/scheduled bank.
8	Validity of offer for acceptance	90 days from the date of opening of Tenders.
9	Technical Bid Opening Date and Time	25.07.2018 at 3.30 PM at registered office of TSREDCO, Hyderabad
10	Price Bid Opening Date and Time	28.07.2018 at 11:00 AM at registered office of TSREDCO, Hyderabad.
11	Security Deposit	A) Rs. 2,00,000/- by way of Demand Draft drawn in favour of TSREDCO , payable at Hyderabad OR Bank Guarantee on any Nationalized Bank in favour of TSREDCO valid for one year period. The amount / BG to be refund after completion of rate contract period.

Note:

- The Tender document can be downloaded from <http://www.tsredco.telangana.gov.in> and the cost of tender document should be enclosed by way of Demand Draft of Rs. 10,000/- Plus 18% GST in favour of

TSREDCO, payable at Hyderabad and this D.D. is to be inserted in the technical bid of the tender document.

2. All relevant required documents along with evidences are to be inserted in technical bid, and only quoted rates (as per Format enclosed) is to be inserted in the financial bid.

4. Financial bid will be opened of those bidders who would duly qualify in the technical bid.

(Signature of Tenderers with Seal)

GENERAL PARTICULARS OF TENDERER

Sl. No	Particulars	Details
1	Name of Tenderer/Firm	
2	Postal Address	
3	E-mail address for communication	
4	Telephone, Fax No.	
5	Name, designation & contact number of the representative of the tenderer to whom all references shall be made.	
6	Nature of the firm (Individual/ Partnership/ Consortium/ Pvt. Ltd /Public Ltd. Co. /Public Sector etc.) Attach attested copy of Registration & Partnership deed/ Memorandum of Association	
7	Amount and particulars of the earnest money deposited.	
8	Annual Turnover for last three financial years (Attach balance sheets from CA in this regard)	
9	Name and address of the Indian/foreign collaboration if any.	
10	PAN No., Service Tax Registration No., Telangana GST/TIN/GRN No., CST No., Required MNRE test certificates (if any) etc. (evidences are to be attached).	
11	Has the Tenderer/firm ever been debarred by any institution for undertaking any work?	
12	Any other information attached by the Tenderer (Details and Annexure / page no. where its enclosed)	
13	Does Tenderer have any relative Working in TSREDCO, If yes state the Name and designation.	
14	Details of the Test Certificate(s) issued by MNRE/MNRE authorised test centers. a. Name of the Test Centre b. Certificate Ref No with Date c. Capacity of the Pump set	

Note: Tenderers are requested to give their full particulars legal and financial status

(Signature of Tenderers
with Seal)

DECLARATION BY THE TENDERER

I/We

(Hereinafter referred to as Tenderer/Bidder) being desirous of tendering for the work, under this tender and having fully understood the nature of the work and having carefully noted all the terms and conditions, specifications etc. as mentioned in the tender document do hereby declare that-

1. The tenderer is fully aware of all the requirements of the tender document and agrees with all provisions of the tender document and accepts all risks, responsibilities and obligations directly or indirectly connected with the performance of the tender.
2. The Tenderer is fully aware of all the relevant information for proper execution of the proposed work, with respect to the proposed place of works/ site, its local environment, approach road and connectivity etc. and is well acquainted with actual and other prevailing working conditions, availability of required materials and labor etc. at site.
3. The Tenderer is capable of executing and completing the work as required in the tender and is financially solvent and sound to execute the tendered work. The tenderer is sufficiently experienced and competent to perform the contract to the satisfaction of TSREDCO. The tenderer gives the assurance to execute the tendered work as per specifications, terms and conditions of the tender on award of work.
4. The tenderer has no collusion with other tenderers, any employee of TSREDCO or with any other person or firm in the preparation of the tender.
5. The tenderer has not been influenced by any statement or promises by TSREDCO or any of its employees but only by the tender document.
6. The tenderer is familiar with all general and special laws, acts, ordinances, rules and regulations of the Municipal, District, State and Central Government that may affect the work, its performance or personnel employed therein.
7. The Tenderer has never been debarred from similar type of work by any Government Undertaking /Department. (An undertaking on Non-Judicial Stamp paper worth of Rs. 100/-in this regard shall be submitted).
8. The Tenderers accepts that the earnest money / security deposit may be absolutely forfeited by TSREDCO., if the selected bidder fails either to sign the contract or to undertake the work within stipulated time or failed to execute the works as per the terms and conditions of this tender document.
9. This offer shall remain valid for acceptance for 3 (Three) months from the proposed date of opening of Tender
10. All the information and the statements submitted with the tender are true and correct to the best of my knowledge and belief.

(Signature of Tenderers) with Seal

TECHNICAL BID

PART – 2

INSTRUCTIONS TO TENDERERS

1. ELIGIBILITY OF THE TENDERERS

1.1. The Tenderer shall provide sufficient documentary evidences to satisfy the following conditions that the Tenderer shall have:

- a. The test report/certificate of the MNRE/MNRE authorized test centres on their name issued as per the MNRE Technical specifications of 2015-16 for Solar PV pumping systems that the company is bidding for. The tenderers having the test reports on their name only are eligible to participate in the tender
- b. Adequate financial stability and status to meet the financial obligations pursuant to the scope of work. The firm must have average annual financial turnover of equal or more than of Rs: 1.00 Cr. (One crores) during the last 3 years ending 31st March of the previous financial year (i.e.2017 – 2018) for which balance sheets of the last three years certified by Chartered Accountant shall be enclosed.
- c. Experience of supply, installation, testing, and commissioning and maintenance/after sale services in the field of Off- Grid Solar water pumping PV systems and shall have installed a minimum of 05 nos. of Solar PV pump sets in the last 3 years (Upto 31-05-2018) **under any Govt. programme in the country**. The details must be submitted in the Format given in Technical- Bid section of tender document with proper documentary evidence. TSREDCO may inspect these installed systems or obtain the information from the concerned.
- d. Either adequate field service setups already established in the district's proposed for installation or establishes service centres to provide good after sale services including necessary repair and maintenance.

The above stated requirements are compulsory to be fulfilled by the tenderer and TSREDCO may also ask for any additional information as may be deemed necessary in public interest.

2. THE TENDER DOCUMENT

2.1. CONTENT OF TENDER DOCUMENT

2.1.1. The tender procedure and contract terms are prescribed in the tender document.

The tenderer is expected to examine all instructions, terms and conditions, specifications, forms and formats etc. as mentioned / enclosed in the tender document. Failure to furnish all information required in the tender document or submission of a tender not substantially responsive to the tender document in every respect will be at the tenderer's risk and is likely to result in out – right rejection of the tender. The tenderer must sign on each and every page of tender document.

2.2. CLARIFICATION OF TENDER DOCUMENT

2.2.1. Any prospective tenderer requiring any clarification on the tender document regarding various provisions / requirements/ preparation/ submission of the tender, may contact TSREDCO, in writing by letter or fax/ email before 48 hours of closing time of the tender. Queries received later shall not be entertained.

2.2.2. Verbal clarifications and information shall not be entertained in any way.

2.3. AMENDMENTS IN TENDER DOCUMENT

2.3.1. At any time prior to the due date for submission of the tender or even prior to the opening of the financial bid, TSREDCO., may for any reason, whether at its own initiative or as a result of a request for clarification/ suggestion by a prospective tenderer, amend/alter the tender document by issuing a notice.

2.3.2. The amendments will be notified on the website at least 2 days before the proposed date of submission of the tender. TSREDCO will bear no responsibility or liability arising out of non-receipt of the information in time or otherwise. If any amendment is required to be notified within 2 days of the proposed date of submission of the tender, the last date of submission shall be extended for a suitable period of time.

2.3.3. In case amendments are notified after submission of the tender (prior to the opening of financial bids), all the tenders received by TSREDCO, shall be returned in sealed condition to the concerned tenderers through registered post or courier, for getting their offer revised according to the amended terms and conditions.

2.3.4. All the notices related to this tender which are required to be publicized shall be uploaded only on <http://www.tsredco.telangana.gov.in>

3. PREPARATION OF TENDER

3.1. LANGUAGE OF TENDER AND MEASURE:

3.1.1. The tender prepared by the tenderer along with all the related documents shall be in English. Unit measurements shall be metric in accordance with International System. All correspondence between the tenderer and TSREDCO shall also be in English.

3.2. EARNEST MONEY

3.2.1. The tenderer shall furnish earnest money of Rs. 2.00 (Two) lakhs as mentioned in the "Particulars of Tender" in the form of DD in favor of, TSREDCO., payable at Hyderabad. Tenders without EMD shall be rejected by TSREDCO, as being non-responsive. No interest shall be paid by TSREDCO, on the amount of earnest money deposit deposition as well as deposition of Security Deposit. The tenderers who are having valid registration certificate issued by the National Small Industries Corporation Ltd will be exempted for the payment of the EMD amount on submission of the exemption certificate.

3.2.2. The earnest money may be forfeited if a Tenderer withdraws his tender during the specified period of validity of offer.

3.2.3 The earnest money of all unsuccessful bidders shall be released soon after allocation of selected bidders.

3.3. L1 RATE DISCOVERY AND ALLOCATION OF PUMP-SETS

3.3.1. All the tenders received will be evaluated by a committee constituted for Technical eligibility. The financial bids of the technically qualified tenderers only will be opened on the scheduled date for financial evaluation. The bidders shall be ranked in ascending order based on the quoted price in the "Financial Bid"

3.3.2 The lowest financial bid of the technically qualified bidders shall be marked L1. The next lowest ranked bidder starting from L-2 shall be invited to extend their respective bid and match the bid of the aforesaid L1 price and the pumpsets are allotted to the bidders who give their consent to match L1.

3.3.3 In case the bidders who offer to match L1 in the second round is insufficient for tendered capacity, TSREDCO, at its discretion shall relax the cutoff criteria of maximum number of pump sets each bidder can execute or invite fresh bids.

3.4 SECURITY DEPOSIT

3.4.1 Performance security deposit (refundable) of Rs. 2,00,000/- (Two lakhs) for One year period.

3.4.2 No interest shall be paid by TSREDCO on the amount of security money deposit.

3.4.3 The tenderer has to give an undertaking that the systems will be maintained regularly during the CMC period of 5 Years failing which the Security deposit amount will be forfeited.

3.4.4 The authority reserves the right of awarding the work. The earnest money (EMD) of such selected Tenderer shall also be released after signing the agreement and submission of security deposit money by them.

3.4.5 After receiving the consent to work on the lowest rates, the earnest money of such Tenderers shall be forfeited and also be black listed if they fail to sign the contract

agreement or failed to execute the orders within stipulated period under intimation to MNRE and other nodal agencies in the country.

3.5 Payment to the Tenderers

- Payment will be settled as per the below:

3.5.1 The tenderer has to complete the installation of the system as per specifications of tender and submit the project completion report in MNRE format, Photographs, invoice etc. to TSREDCO for release 70% amount of Purchase order value (i.e. eligible MNRE, State subsidy & beneficiary contribution) after joint inspection of TSREDCO, Beneficiary / Concerned officials and supplier and 20% amount will be released after 30 days of Successful performance and satisfactory of beneficiary / concerned authorities. The retained 10% (Ten percent) amount will be released completion of five years period without any interest. The bidders are responsible to meet all the technical criteria as specified and amended by MNRE from time to time.

The following deductions will be made at the time of release of payment.

The following recoveries will be made towards Taxes.

1. Income Tax at 2.00 % or as applicable
2. 10% performance guarantee amount shall be deducted on the total supply order vale.
3. GST @18 % or as applicable on I&C Component shall be deducted.
4. TSREDCO service charges @ 3% plus 18% GST as applicable will be deducted

3.6 PERIOD OF VALIDITY OF TENDER

- 3.6.1 Validity of the offer should be 90 days from the proposed date of opening of the Technical bid. Tenders without this validity will be rejected.
- 3.6.2 The quoted price shall be valid for a period of one year and TSREDCO shall have the discretion to extend the validity period if so warranted.
- 3.6.3 In exceptional circumstances, TSREDCO may solicit the consent of the tenderers for extension of the period of validity of offer. The request and the response there of shall be made in writing.

3.7 FORMATS AND SIGNING OF TENDER

- 3.7.1 The tender must contain the name and places of business of the firm/person/persons participating in the tender and must be signed and sealed by the Tenderer with his usual signature. The name and designation of all persons signing the tender

document should be written below every signature. Tender by a partnership firm must be furnished with full name of all partners with a copy of partnership deed.

- 3.7.2 The original copy of the tender should be typed or written in indelible ink and must be signed with the legal name of the corporation/ company by the President/ Managing Director/ Secretary of the firm or a person duly authorized to bid. In case of authorized person the letter of authorization by written power-of-attorney should be enclosed with the technical bid of the tender. The person or persons signing the tender shall initial all pages of the tender document.
- 3.7.3 The tender shall contain no interlink actions, erasers or overwriting except as necessary to correct the errors made by the tenderer in the preparation of tender. The person or persons signing the tender shall also sign at all such corrections.

3.8 PRICE AND CURRENCIES

- 3.8.1 The tenderer shall have to submit their rates in Indian Rupees only including all latest applicable taxes & duties of Govt. of Telangana as well as Govt. of India. Moreover, VC & Managing Director, TSREDCO, will not be responsible for providing road permits. It is to be obtained by the selected bidder only and necessary entry tax (as admissible) will have to be borne by the selected bidder if any.
- 3.8.2 The rate should be quoted on the prescribed format for Financial Bid attached to this tender document.

4 SUBMISSION OF TENDER

4.1. SEALING AND MARKING OF TENDER:

- 4.1.1. The tender must be complete in all technical and commercial respect and should contain requisite certificates, drawings, informative literature etc. as required in the tender document.
- 4.1.2. In Technical bid (sealed envelope), following documents are to be inserted:
- a) Copy of Registration
 - b) Cost of the tender document by way of DD
 - c) Copy of GST/TIN, CST, PAN, Service Tax registration no.
 - d) Test Report/Certificate issued by the MNRE/MNRE authorized Test Centers of the proposed system in the name of the bidder.
 - e) Brochures, literature and other documents regarding technical specifications of the proposed equipment along with relevant test certificates
 - f) Annual audited balance sheets of the last 3 years ending 31st March of the

previous financial year (i.e.2017 – 2018) certified by Chartered Accountant.

g) Requisite earnest money deposit

h) Preference of minimum of five districts for operations.

i) Proof of experience of successful supply installation, testing, and commissioning and maintenance/after sale services in the field of Off- Grid Solar water pumping PV systems for a minimum of 10 nos. of Solar PV pump sets under any Govt. programme in the country. The details must be submitted in the Performa given in Technical- Bid section of tender document.

4.1.3 It should be super scribed with “TENDER FOR DESIGN, SUPPLY, INSTALLATION, AND COMMISSIONING OF 3HP / 5HP / 7.5HP SPV WATER PUMPING SYSTEMS IN TELANGANA STATE – EARNEST MONEY AND TECHNICAL BID”

4.1.4 The complete tender document in original (excluding financial bid) issued by TSREDCO, or downloaded from the website should be submitted by the tenderer in the first envelope (Technical Bid) after furnishing all the required information on relevant pages. Each page of the tender document should be signed & stamped. Tenders with any type of change or modification in any of the terms/ conditions of this document shall be rejected. If necessary, additional papers may be attached by the tenderer to furnish/ submit the required information.

4.1.5 Second sealed envelope (Financial Bid) should contain financial bid only as per the financial bid format with component wise cost details in the formats attached. The tenderers shall quote their price for Design, Supply, Installation and Commissioning, insurance and CMC for a period of 5 years and all applicable taxes etc. of Solar PV water pumping system under turnkey basis adhering to MNRE standards.

4.1.6 Any term/condition proposed by the tenderer in his technical bid which is not in accordance with the terms and conditions of the tender document or any financial conditions, payment terms, rebates etc. mentioned in financial bid shall be considered as a conditional tender and will make the tender invalid.

4.2. DEADLINE FOR SUBMISSION OF TENDER

4.2.1. Tender must be received by TSREDCO, till the date & time of submission as specified in tender document.

4.2.2. Any tender received after the specified date & time of submission will be rejected and returned unopened to the Tenderer.

5. TENDER OPENING AND EVALUATION AND FINALISATION

5.1. OPENING OF TENDER

5.1.1. Bid Evaluation Methodology and Selection:

- A. 1st Step – Prequalification (PQ)
- B. 2nd Step – Technical evaluation
- C. 3rd Step – Financial Bid (**Quoted Tariff**) evaluation

A. **1st Step – Prequalification (PQ):** The Bidder shall submit original documents pertaining to EMD and Bid Processing Fee as specified. Bids not accompanied by EMD and Bid Processing Fee as per the terms of the tender document shall be summarily rejected and no further evaluation will be carried out in respect of such Bids/Bidders. For exemption of EMD, the valid original/certified NSIC/MSME certificate shall be submitted.

Any of the following conditions shall cause the Bid to be “Non-responsive”:

- i. Non submission of EMD and Bid Processing Fee in acceptable form/amount along with the bid.
- ii. Bids not received by the timelines as specified in this tender document.
- iii. Any indication of the quoted price in any part of bid, other than in the Financial Bid.

B. **2nd Step- Technical evaluation:** Bids received after the Bid Deadline and Bids submitted without the EMD and Bid Processing Fee will be summarily rejected. Subject to above, all the formats, documents and/or information submitted by the Bidder as a part of the Technical Bid, except Financial Bid will be opened and evaluated at this stage.

The Bid submitted by the Bidder shall be scrutinized to establish technical eligibility as per Qualification Requirements of the tender as detailed below:

- a. ***Test Report issued by MNRE/MNRE Authorised Test Centres for SPV Pumping systems***
- b. ***Annual Turnover details as stated in the tender document.***
- c. ***Experience Certificates***
- d. ***DDs for Bid processing fee and EMD***
- e. ***Valid NSIC/MSME certificate for exemption of EMD, if any***

Bids meeting the Technical eligibility criteria and the Qualification Requirements specified in this tender shall be declared technically responsive and the corresponding Bidder shall be declared as the Qualified Bidders.

C. **3rd Step – Financial Bid Opening and Bid evaluation:** The financial bids of technically qualified bidders will be evaluated based on the unit rate quoted. The lowest tender by itself will not confer any right or will not amount to accept in favour of lowest bidder, as the same is subjected to acceptance by competent authority. Notwithstanding anything to the contrary contained herein, the Authorised Representative, has the right to reject any or all of the Bids, at any stage during the bid process.

5.2 CLARIFICATIONS REGARDING THE SUBMITTED TENDERS

5.2.1. During the process of evaluation of the tender, TSREDCO may at its discretion ask the tenderer for a clarification of their tender. The request for clarification and the response shall be in writing.

5.2.2. Any query regarding any clarification required by TSREDCO on the information submitted by the tenderer, must be replied by the tenderer within the following time schedule.

5.2.3. Email/ fax query should be replied by Email/ fax within 2 days.

5.2.4. Query by letter must be replied by letter within 7 days of receipt of the letter.

5.3. FINALISATION OF TENDERS

5.3.1. Tenders will be finalized by the TSREDCO Tender evaluation committee, for the works along with technical bid evaluation for consideration and in accordance with the conditions stipulated in the tender document and in case of any discrepancy or non-adherence to the conditions, the same shall be communicated which will be binding both on the tender concluding authority and contractor. In case of any ambiguity the decision taken by the VC & Managing Director, TSREDCO on tenders shall be final.

5.3.2. The successful tenderer has to sign an agreement with in a period of 10 days from the date of receipt of communication of acceptance of his tender. On failure to do so, his tender will be cancelled duly forfeiting the E.M.D paid by him without issuing any further notice.

6. NOTIFICATION OF AWARD

6.1. Prior to the expiry of validity period of offer, TSREDCO will notify the successful tenderer by registered Letter/Email/ Fax that his tender has been accepted.

7. RIGHT TO ACCEPT/REJECT ANY OR ALL TENDERS.

7.1. TSREDCO, reserves all the rights to reject any or all the tenders, accept any tender in total or in part.

8. EXPENSES OF AGREEMENT

8.1. The respective suppliers shall pay all the expenses of stamp duties and other requirements for signing the agreement with TSREDCO.

TECHNICAL BID

PART-3

GENERAL CONDITIONS

OF

AGREEMENT

1. DEFINITIONS:

In the deed of agreement unless the context otherwise requires:

- 1.1 "TSREDCO." shall mean The VC & Managing Director or his representative of "Telangana State Renewable Energy Development Corporation Ltd", with its office at khairthabad, Hyderabad. The "Contractor/Bidder/Supplier shall mean the Firm/ Person, whose tender has been accepted by TSREDCO., and shall include his legal representatives, successor in interest and assignees.
- 1.2 The Agreement shall be for Design, Supply, Installation & commissioning of 3HP / 5HP / 7.5HP SPV WATER PUMPING SYSTEMS IN TELANGANA STATE including the CMC and insurance for a period of 5 Years and shall be valid till the completion of all related works. However the validity of rates may further be extended to a specified period of time on the mutual consent of both the parties.
- 1.3 The Tenderer shall be deemed to have carefully examined all papers, drawing etc. attached to the Agreement. If he shall have any doubt as the meaning of any portion or any condition(s)/ specifications etc., they may contact TSREDCO., for clarification.

2. COMPLETION PERIOD

- 2.1 The completion period of the entire lot of work shall be 45 days from the date of issue of work order. The work shall have to be completed within time and shall be binding on the contractor. In case of any urgency, the contractor may be asked to complete the work even earlier and contractor will be bound to fulfill the requirements. On written request with valid reasons, extension of time may be granted by the competent authority.
- 2.2 In case the contractor fails to execute the said work or related obligations within stipulated time, TSREDCO will be at liberty to get the work executed from the open market at the risk and cost of the contractor, without calling any tender and without any notice to the contractor. Any additional cost incurred by TSREDCO during such execution of the work shall be recovered from the contractor.
- 2.3 If the cost of executing the work as aforesaid shall exceed the balance payments due to the contractor and the contractor fails to make good the "additional cost", TSREDCO may recover it from the contractor's pending claims against any work in TSREDCO or in any other lawful manner. All risks & responsibilities related to the execution of the said work and fulfillment of related obligations directly or indirectly connected with the performance of the contract shall be the sole responsibility of contractor.

- 2.4 The calculation of aforesaid “additional cost” will be finalized by the TSREDCO at its sole discretion. The contractor shall have no right to challenge the mode or amount relating to calculation at any forum. For completion of the work through any other agency, in case some changes are required in terms and conditions of the contract, the contractor shall not have any right to challenge the decision of TSREDCO.

3. LIQUIDATED DAMAGES

- 3.1 If the contractor fails to perform the work within the time periods specified in the work orders or within the extended time period if any, without suitable explanation TSREDCO shall without prejudice to its other remedies under the contract, deduct from the contract price as liquidated damage, a sum equivalent to 5% of the price of the un-performed work/ services for each week of delay until actual completion of work, up to a maximum deduction of 30%. Once the maximum is reached, TSREDCO may consider termination of the contract.

4. PERFORMANCE SECURITY

- 4.1 The amount of the performance security as mentioned in the “Payment Terms shall be forfeited in case of violation of any term or condition by the contractor. If required, the other balance payments may also be forfeited, depending on the liabilities on the part of the contractor.

5. FORCE MAJEURE

- 5.1 Notwithstanding the provisions of clauses contained in this deed; the contractor shall not be liable for forfeiture of its performance security, liquidated damages, termination for default, if he is unable to fulfill his obligation under this deed due to force majeure circumstances.
- 5.2 For purpose of this clause, "Force majeure" means an event beyond the control of the contractor and not involving the contractor's fault or negligence and not foreseeable, either in its sovereign or contractual capacity. Such events may include but are not restricted to Acts of God, wars or revolutions, fires, floods, epidemics, quarantine restrictions and fright embargoes etc. Whether a “Force majeure” situation exists or not, shall be decided by the TSREDCO. & his decision shall be final and binding on the contractor and all other concerned.
- 5.3 If a force majeure situation arises, the contractor shall notify TSREDCO., in writing promptly (at the most within 10 days from the date such situation arises). After examining the cases TSREDCO., shall decide and grant suitable extension of time for the completion of the work.

5.4 For other justified cases also, not covered under force majeure conditions, TSREDCO., may consider the request of contractor and additional time for completion of work may be granted.

6. COMPREHENSIVE MAINTENANCE, QUALITY, WARRANTEE / GUARANTEE

6.1 The contractor shall warrant the Solar PV Water pumping system as per applicable standards of quality (MNRE Specifications). Anything to be furnished shall be new, free from all defects and faults in material and workmanship. The manufacturer shall be in accordance with the specified technical parameters and should be of the highest grade and consistent with established and generally accepted standards for material. It shall be in full conformity with the drawing or samples if any and shall operate properly if operable.

6.2 After installation of the Solar PV Water pumping system at site, the contractor shall ensure satisfactory performance of the equipments for a period of time as specified in the scope of work.

6.3 The contractor shall rectify defects developed in the Systems within CMC period promptly. In case the contractor does not rectify the defects within one week of the receipt of complaint, TSREDCO may restore the System in working condition on contractor's expenses.

6.4 Frequent and unjustified delays in rectifying defects may lead to cancellation of the contract, recovery of losses and imposing of additional penalty. In such circumstance TSREDCO., shall have the full liberty to recover the losses/penalty from the contractor pending claims, security deposit or in other law full manner. The amount of losses/penalty shall be decided by VC & Managing Director, TSREDCO., and will be binding on the contractor.

6.5 The PV modules will be warranted for a minimum period of 25 years from the date of supply. (Output wattage should not be less than 90% at the end of 10 years and 80% at the end of 25 years).

6.6 The mechanical structures, electrical components including Motor-Pump Set and overall workmanship of the Solar Water Pumping System must be warranted for a minimum of 5 years. All these items must be as per MNRE specifications and standards.

6.7 The Comprehensive Maintenance (within warranty period) shall be executed by the firm themselves or the authorized service centre of the firm in the concerned district.

- 6.8 It is mandatory for the contractor to open an authorized service center in the concerned district before the supply/installation of the system and operate for a minimum period of 5 years failing which the bidders will be penalised at Rs. 2,00,000/- (Two lakhs) per service center per annum which will be recovered from the retained performance guarantee amount.
- 6.9 Necessary maintenance spares for five years trouble free operation shall also be supplied with the system.
- 6.10 The supplier shall be responsible to replace free of cost (including transportation and insurance expenses) to the purchaser whole or any part of supply which under normal and proper use become dysfunctional within fifteen days of issue of any such complaint by the purchaser.
- 6.11 Depending upon the site soil condition, foundation has to be laid as per standards applicable for installation of the system.

7. STANDARDS

- 7.1 The goods supplied and works executed under this contract shall conform to the standards mentioned in the technical specification and where no applicable standard is mentioned, the latest version of Indian Standard Institution or Bureau of Indian Specification shall be applicable.
- 7.2 TSREDCO., or its duly authorized representatives shall have the right to inspect and /or to test the goods to confirm their quality according to the contract and shall have access to the contractor's works premises and the power to inspect and examine the materials and workmanship of the Solar PV water pumping system at all reasonable times during their manufacture.

8. SPARE PARTS

- 8.1 The contractor shall make arrangement to maintain a sufficient stock of essential spares and consumable spare parts to ensure proper maintenance of the system promptly.

9. PACKING FORWARDING

- 9.1 Contractors, wherever applicable shall properly pack and crate all materials in such a manner as to protect them from deterioration and damage during transportation. The contractor shall be responsible for all damages due to improper packing.
- 9.2 The contractor shall inform the, TSREDCO., HO and Project site officer regarding the probable date of each shipment of materials from his works.

10 . TRANSPORTATION

10.1 The contractor is required to deliver the goods at location as defined in the scope of work.

11. DEMURRAGE, WHARFAGE, ETC

11.1 All demurrage, wharfage and other expenses incurred due to delayed clearance of the material or any other reason shall be on the account of the contractor.

12. INSURANCE

12.1 The goods supplied under the contract shall be fully insured against loss or damage incidental to manufacture or acquisition; transportation and the expenses shall be borne by the contractor.

12.2 The contractor shall arrange security & storage of their materials to avoid any theft or losses during execution of work. TSREDCO., will, in no case, shall be responsible for providing any security/storage for the materials & equipments lying at site during execution of work. Under the contract, contractor shall be responsible for any loss or damage until the systems/ supplies are taken over.

12.3 Any injury and accidents during erection to Technician, Labor, Erection crew, Students, Teacher or any other persons during the time of execution will be liability and responsibility of contractor and they shall make necessary preventive measures.

13. LIABILITY FOR ACCIDENTS AND DAMAGES

13.1 During the Warrantee period, the contractor shall assume all responsibilities for direct damages covering all type of accident, injury or property damage caused by manufacturing defects or faulty installation on the systems.

14. REMOTE MONITORING MECHANISM & INSURANCE AFTER INSTALLATION:

14.1 The Bidders have to maintain the Remote Monitoring mechanism for a period of 5 years duly providing the required SIM card etc for the SPV water pumping systems. The expenditure on account this shall be met by the Bidder.

14.2 The Bidders shall provide Comprehensive Insurance for a period of 5 (five) years from the date of installation of SPV water pumping system.

15. DUTIES AND TAXES

15.1 The rates/ prices mentioned in the price-schedule includes all latest applicable taxes, duties of Govt. of Telangana as well as Govt. of India and applicable taxes will be deducted at source against which necessary tax deductions certificates will be issued as and when required. No additional payments shall be made by TSREDCO., on this account.

16. SPECIAL ATTENTION

16.1 While preparing the Bid-Price the Bidders shall also take into account the following:

- i. Infrastructure & Construction Facilities, Preliminary, Enabling & Ancillary works whatsoever required by them for successful completion of the Project in the specified time schedule.
- ii. Indian Income Tax and Surcharge on Income Tax on Salaries of Expatriates etc.
- iii. Corporate Income Tax.
- iv. All Taxes, Duties and expenses such as Excise Duty, Sales Tax on Indian Supplies, Customs Duty and Custom Clearance on imported items, transportation and storage at site etc.
- v. All local duties, royalties, octroi etc.
- vi. All applicable taxes GST / TDS, Income Tax, Service Tax, cess charges on works contract etc. in the State of Telangana.

17. PATENT RIGHT AND ROYALTIES:

17.1 The contractor shall indemnify TSREDCO., against all third party claims of infringement of patent, royalties, trademark or industrial design rights arising from use of the goods supplied/installed by the contractor or any part thereof.

18. RIGHT TO VARY QUANTITIES

18.1 TSREDCO, reserves all the rights to increase or decrease the quantity of goods mentioned in the contract, at the time of placement of orders without any change in price or other terms and conditions.

19. LOCAL CONDITIONS

19.1 It will be imperative on contractor to have full information of all local conditions and factors which may have any effect on the execution of the works. The contractor shall be

deemed to have collected all the relevant information regarding the proposed place of works/ site, its local environment, approach road and connectivity etc. and be well acquainted with actual working and other prevailing conditions.

20. TOOLS & TACKLES

20.1 The contractor shall provide all necessary tools & tackles for proper execution of work and operation/ maintenance of systems after installation. TSREDCO shall in no way, responsible for supply of any tools & tackles.

21. TERMINATION FOR DEFAULT

- a. TSREDCO, without prejudice to any other remedy for violate of contract, by written notice of default sent to the contractor, may terminate the contract in whole or in part:
- b. If the contractor fails to deliver the Services within the allocated time period(s).
- c. If the contractor fails to perform any other obligation(s) under the contract. However in the event of termination of the contract in part, the contractor shall continue performance of the contract to the extent not terminated.

22. TERMINATION FOR INSOLVENCY

22.1. TSREDCO, may at any time terminate the contract by giving written notice to the contractor without compensation to the contractor if he becomes bankrupt or otherwise insolvent, provided that such termination will not prejudice or affect any right of action or remedy, which has accrued or will accrue thereafter to TSREDCO.

23. TERMINATION FOR CONVENIENCE

23.1 TSREDCO, by written notice may terminate the contract, in whole or in part at any time for its convenience. The notice of termination shall specify that termination is for the purchaser's convenience in the interest of TSREDCO.

24. COMPLETION OF WORK

- a. On completion of the work, the contractor shall submit 3 sets of "Project completion report in MNRE format " along with copies of Invoice, Audited statement of expenditure, photographs etc., to TSREDCO which will include photographs, drawings of various systems containing details of installation from the point of view of future maintenance of the installed systems. This report must also contain all Technical Details, Detailed Circuit Diagram of the Electronic/ Electrical/Motor components of all the system. The report shall include satisfactory performance report from appropriate authority for each site along with photograph of representative of the authority and the party. Any additional information required by MNRE, TSREDCO shall be provided by the contractor/supplier.

25. OTHER CONDITIONS:

25.1 The contractor shall not transfer, assign or sublet the work under this contract or any substantial part thereof to any other party without the prior consent of TSREDCO in writing.

25.2 TSREDCO may at any time either stop the work all together or reduce or cut it down by sending notice in writing to the contractor. If the work is stopped all together, the contractor will only be paid for work done and expenses distinctly incurred by him as on preparation or the execution of the work up to the date on which such notice is received by him. The decision of TSREDCO regarding assessment of such expenses shall be final and binding on the contractor. If the work is cut down, the contractor will not be paid any compensation what to ever for the loss of profit which he might have made if he had been allowed to complete all the work awarded to him.

25.3 Fulfillment of various requirements, not particularly mentioned in the specifications or drawings but necessary for satisfactory and proper completion of the work shall be the contractor's responsibility within the prices offered by him. But additional works beyond the scope and essence of this contract shall be carried out by the contractor as extra items. For such works the rates shall be decided by TSREDCO and shall be binding on the contractor.

25.4 The contractor shall not display the photographs of the work and not take advantage through publicity of the work without written permission of TSREDCO.

25.5 The contractor shall not make any other use of any of the documents or information of this contract, except for the purposes of performing the contract.

25.6 TSREDCO will not be bound by any Power of Attorney granted/ issued by the contractor or by any change in the composition of the firm made during or subsequent to the execution of the contract. However recognition to such Power of Attorney and change (if any) may be given by TSREDCO after obtaining proper legal advice, the cost of which will be chargeable to the contractor concerned.

25.7. VC & Managing Director, TSREDCO is having all rights to amend/alter any clause or terms and conditions of this tender document and that will be notified in the TSREDCO website before 48 hours of the closing date of the tender.

25.8. Any dispute/legal issues arising out of this tender are subject to jurisdiction of High Court Judicature at Hyderabad for the state of Telangana and Andhra Pradesh.

25. 9 In case of the supporting documents are other than in English language, translated copy of the same in English language certified by the Tenderer shall be attached along with the tender document.

TECHNICAL BID

PART-4

GENERAL TECHNICAL SPECIFICATIONS

1. SCOPE OF WORK AND TECHNICAL SPECIFICATIONS

1.1 SCOPE OF WORK

- 1.1.1 Supply, Installation and Commissioning of Complete Solar PV Pumping System comprising of SPV modules, VFD/Inverter, Remote Monitoring, AC/DC Surface / Submersible Pump, Mounting Structure, Tracking, Cables, HDPE Pipe etc. as per MNRE Specifications, inclusive of CMC and Insurance for 5 years

1.2. TECHNICAL SPECIFICATONS

The Solar PV Water Pumping System shall adhere to the MNRE technical specifications for the Solar Photovoltaic Water Pumping Systems under Jawaharlal Nehru National Solar Mission. The firms having the test reports/certificate of the MNRE/MNRE authorised test centres issued as per the technical specifications of 2015-16 of MNRE are eligible to participate in the tender. **The components/items to be supplied for installation of the system are as per the component/items indicated in the test report of the authorized test centres of MNRE including the brand, capacity etc.**

The technical specification of MNRE for the year 2015-16 are given in the Chapter 2 of this Part for reference which are to be followed without any deviation

Additional technical specifications/general terms regarding other balance of system as given in the Chapter 3 of this Part shall also be adhered.

1.3. EQUIPMENT INFORMATION REOUINED WITH THE PROPOSAL

The tender must clearly indicate the name of the manufacturer, the types and model & make of each principal item of equipment proposed to be supplied. The tender may also contain details of specifications and other comprehensive descriptive materials in support of technical specifications.

The above information may be provided by the Tenderer in the form of separate sheets, specifications, catalogues etc.

Any tender not containing sufficient descriptive material to describe the proposed equipment may be treated as incomplete and hence may be rejected. Such descriptive materials and specifications submitted by the Tenderer will be retained by TSREDCO. Any deviations from these will not be permitted during the execution of contract, without specific written permission of TSREDCO.

2. MNRE TECHNICAL SPECIFICATIONS – (2015-16)

2.1 INTRODUCTION:

A Solar Photovoltaic (SPV) Water Pumping System consists of:

- PV Array: Capacity in the range of 2700 Wp to 6750 KWp. These ranges of Solar Photovoltaic (SPV) Water Pumping Systems are basically for “Irrigation” applications. However, these may also be used for “Drinking Water Applications wherever such capacities are required”

PV Array should be mounted on a suitable structure with a provision of tracking the sun.

- Motor Pump Set (Surface or submersible) :
 - D.C. Motor Pump Set (with Brushes or Brush less D.C.)

OR

- A.C. Induction Motor Pump Set with a suitable Inverter

- Electronics :
 - Maximum Power Point Tracker (MPPT)
 - Inverter for A.C. Motors
 - Electronic Protections.
- Interconnect Cables and “On-Off” switch.

II. PERFORMANCE SPECIFICATIONS AND REQUIREMENTS:

Solar PV Water Pumps with PV module capacity in the range of 900 Watt to 5 KWp may be installed on a suitable bore-well / open well / Water Reservoir / Water stream etc.

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

- For D.C. Motor Pump Set with Brushes or Brush Less D.C.(B.L.D.C.) :
 - a) 100 liters of water per watt peak of PV array, from a Total Dynamic Head of 10 metres (Suction head, if applicable, minimum of 7 metres) and with the shut off head being at least 12 metres.
 - b) 50 liters of water per watt peak of PV array, from a Total Dynamic Head of 20 metres (Suction head, if applicable, up to a maximum of 7 metres) and with the shut off head being at least 25 metres.
 - c) 35 liters of water per watt peak of PV array, from a Total Dynamic Head of 30 metres and the shut off head being at least 45 metres
 - d) 21 liters of water per watt peak of PV array, from a Total Dynamic Head of 50 metres

and the shut off head being at least 70 metres.

- e) 14 liters of water per watt peak of PV array, from a Total Dynamic Head of 70 metres and the shut off head being at least 100 metres.
- f) 9.5 liters of water per watt peak of PV array, from a Total Dynamic Head of 100 metres and the shut off head being at least 150 metres.

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

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

▪ For A.C. Induction Motor Pump Set with a suitable Inverter :

- a) 90 liters of water per watt peak of PV array, from a Total Dynamic Head of 10 metres (Suction head, if applicable, minimum of 7 metres) and with the shut off head being at least 12 metres.
- b) 45 liters of water per watt peak of PV array, from a Total Dynamic Head of 20 metres (Suction head, if applicable, up to a maximum of 7 metres) and with the shut off head being at least 25 metres.
- c) 32 liters of water per watt peak of PV array, from a Total Dynamic Head of 30 metres and the shut off head being at least 45 metres.
- d) 19 liters of water per watt peak of PV array, from a Total Dynamic Head of 50 metres and the shut off head being at least 70 metres.
- e) 13 liters of water per watt peak of PV array, from a Total Dynamic Head of 70 metres and the shut off head being at least 100 metres.
- f) 8.5 liters of water per watt peak of PV array, from a Total Dynamic Head of 100 metres and the shut off head being at least 150 metres.

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

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

III. PV ARRAY

The SPV water pumping system should be operated with a PV array capacity in the range of 2700 Watts peak to 6750 Watts peak, measured under Standard Test Conditions (STC). Sufficient number of modules in series and parallel could be used to obtain the required PV array power output. The power output of individual PV modules used in the PV array, under STC, should be a minimum of 125 Watts peak, with adequate provision for measurement tolerances. Use of PV modules with higher power output is preferred.

Indigenously produced PV module (s) containing mono/ multi crystalline silicon solar cells should be used in the PV array for the SPV Water Pumping systems.

- Modules supplied with the SPV water pumping systems should have certificate as per IEC 61215 specifications or equivalent National or International/ Standards
- Modules must qualify to IEC 61730 Part I and II for safety qualification testing.
- The efficiency of the PV modules should be minimum 14% and fill factor should be more than 70%.
- The terminal box on the module should have a provision for “Opening” for replacing the cable, if required.
- There should be a Name Plate fixed inside the module which will give:
 - i. Name of the Manufacturer or Distinctive Logo.
 - ii. Model Number
 - iii. Serial Number
 - iv. Year of manufacture

IV. MOTOR PUMP-SET:

- The SPV water pumping systems may use any of the following types of motor pump sets:
 - a. Surface mounted motor pump-set
 - b. Submersible motor pump set
 - c. Floating motor pump set
 - d. Any other type of motor pump set after approval from Test Centers of the Ministry
- The “Motor Pump Set” should have a capacity in the range of 3 hp to 7.5 hp and should have the following features:
 - The mono block DC/ AC centrifugal motor pump set with the impeller mounted directly on the motor shaft and with appropriate mechanical seals which ensures zero leakage
 - The motor of the capacity ranging from 3 hp to 7.5 hp should be AC, PMDC or BLDC type. The suction and delivery head will depend on the site specific condition of the field
 - Submersible pumps could also be used according to the dynamic head of the site at which the pump is to be used.
- It is recommended that all parts of the pump and the motor of the submersible pumps should be made of stainless steel.
- The manufacturers of pumps should self certify that, the pump and all external parts of motor used in submersible pump which are in contact with water, are of stainless steel. The pumps used for solar application should have a 5 years warranty so it is

essential that the construction of the pump be made using parts which have a much higher durability and do not need replacement or corrode for at least 5 years.

- Provision for remote monitoring of the installed pumps must be made in the controllers or the inverters either through an integral arrangement or through an externally fitted arrangement. It should be possible to ascertain the daily water output, the power generated by the PV array, the UP TIME of the pump during the year, Number of days the pump was unused or under breakdown/repairs.
- The following details should be marked indelibly on the motor pump set
 - i. Name of the Manufacturer or Distinctive Logo.
 - ii. Model Number.
 - iii. Serial Number
- The suction/ delivery pipe (GI/HDPE), electric cables, floating assembly, civil work and other fittings required to install the Motor Pump set.

V. MOUNTING STRUCTURES and TRACKING SYSTEM.

The PV modules should be mounted on metallic structures of adequate strength and appropriate design, which can withstand load of modules and high wind velocities up to 150 km per hour. The support structure used in the pumping system should be hot dip galvanized iron with minimum 80 micron thickness.

To enhance the performance of SPV water pumping systems, manual or passive or auto tracking system must be used. For manual tracking, arrangement for seasonal tilt angle adjustment and three times manual tracking in a day should be provided.

The components of SPV systems are to be installed with anti-theft bolts/nuts.

VI. ELECTRONICS AND PROTECTIONS

- Maximum Power Point Tracker (MPPT) should be included to optimally use the Solar panel and maximize the water discharge.
- Inverter could be used, if required, to operate an A.C. Pump. The inverter must have IP 54 protection or must be housed in a cabinet having at least IP54 protection.
- Controller for BLDC motor driven pumps, if required be used. The controller must have IP 54 protection or must be housed in a cabinet having at least IP 54 protection.
- Adequate protections should be incorporated against dry operation of motor pump set, lightning, hails and storms
- Full protection against open circuit, accidental short circuit and reverse polarity should be provided.

VII. ON/OFF SWITCH

A good reliable switch suitable for DC use is to be provided. Sufficient length of cable should be provided for interconnection of the PV array, Controller / Inverter and the motor pump set.

VIII. WARRANTY

The PV Modules must be warranted for output wattage, which should not be less than 90% at the end of 10 years and 80% at the end of 25 years. The whole system including submersible/ surface pumps shall be warranted for 5 years. Required Spares for trouble free operation during the Warrantee period should be provided along with the system

IX. OPERATION AND MAINTENANCE MANUAL

An Operation and Maintenance Manual, in English and the local language, should be provided with the solar PV pumping system. The Manual should have information about solar energy, photovoltaic, modules, DC/AC motor pump set, tracking system, mounting structures, electronics and switches. It should also have clear instructions about mounting of PV module, DO's and DONT's and on regular maintenance and Trouble Shooting of the pumping system. Name and address of the person or Centre 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.

X. NOTES

- Wherever the "Water table" or the level of water in the reservoir or the water source (e.g. Diggie) from which the water is to be pumped, is within 10 metres depth, 'Surface Motor Pump sets" should be preferred.
- The type of pump set used must match the total dynamic head requirement of the site (i.e. the location at which it is installed). Moreover, it should be appropriately tested and certified by the authorized test centres of the Ministry to meet the performance and water discharge norms specified in section II above.
- There should not be any compulsion to use only one or the other type of Motor-pump set. The beneficiary may select an appropriate Model (i. e. Capacity of PV Array and Type of Motor Pump Set) as per site requirement.

Indicative Technical Specifications of Solar Deep well (submersible) Pumping Systems:

With D.C. Motor Pump Set with Brushes or Brush Less D.C.(B.L.D.C.)

Description	Model-III	Model-IV	Model-V	Model-VI	Model-VII	Model-VIII	Model-IX	Model-X	Model-XI
PV array (minimum)	3000 Wp	3000 Wp	3000 Wp	4800 Wp	4800 Wp	4800 Wp	6750 Wp	6750 Wp	6750 Wp
Motor Capacity	3 hp submersible with controller	3 hp submersible with controller	3 hp submersible with controller	5 hp Submersible with controller	5 hp Submersible with controller	5 hp Submersible with controller	7.5 hp Submersible with controller	7.5 hp Submersible with controller	7.5 hp Submersible with controller
Shut Off Dynamic Head	45 metres	75 meters	100 meters	70 meters	100 meters	150 meters	70 meters	100 meters	150 meters
Water output*	105,000 litres per day from a total head of 30 mtres	63,000 litres per day from a total head of 50 mtres	42,000 litres per day from a total head of 70 metres	100,800 litres per day from a total head of 50 metres	67,200 litres per day from a total head of 70 metres	45,600 litres per day from a total head of 100 metres	141,750 litres per day from a total head of 50 metres	94,500 litres per day from a total head of 70 metres	64,125 litres per day from a total head of 100 metres

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

Notes: 1. For higher or lower head / PV capacity, or in between various models; water output could be decided as per the clause II. (i.e. performance specifications and requirements) specified earlier.

2. If surface pumps are used in lieu of submersible pumps, the water output must match that of the submersible pumps as specified in this table.

3. Module mounting structure shall be MS hot dipped galvanised, with a facility of manual tracking at least three times a day.

Indicative Technical Specifications of Shallow Well (Surface) Solar Pumping Systems ,
With A.C. Induction Motor Pump Set and a suitable Inverter:

Description	Model-III	Model-IV	Model- V	Model- VI
PV array (minimum)	2700 Wp	2700 Wp	4800 Wp	4800 Wp
Motor Capacity	3 hp	3 hp	5 hp	5 hp
Shut Off Dynamic Head	15metres	25 meters	15metres	30 meters
Water output*	243,000 litres per day from a total head of 10 metres	121,500 litres per day from a total head of 20 metres	432,000 litres per day from a total head of 10 metres	216,000 litres per day from a total head of 20 metres

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

Notes:

1. Suction head, if applicable, minimum 7 metres.
2. For higher or lower head / PV capacity, or in between various models; water output could be decided as per the clause II. (i.e. performance specifications and requirements) specified earlier.
3. If submersible pumps are used in lieu of surface pumps, the water output must match that of the surface pumps as specified in this table.
4. Module mounting structure shall be MS hot dipped galvanised, with a facility of manual tracking at least three times a day.

Indicative Technical Specifications of Solar Deep well (submersible) Pumping Systems:

With A.C. Induction Motor Pump Set and a suitable Inverter:

Description	Model-III	Model-IV	Model-V	Model-VI	Model-VII	Model-VIII	Model-IX	Model-X	Model-XI
PV array (minimum)	3000 Wp	3000 Wp	3000 Wp	4800 Wp	4800 Wp	4800 Wp	6750 Wp	6750 Wp	6750 Wp
Motor Capacity	3 hp submersible with controller	3 hp submersible with controller	3 hp submersible with controller	5 hp Submersible with controller	5 hp Submersible with controller	5 hp Submersible with controller	7.5 hp Submersible with controller	7.5 hp Submersible with controller	7.5 hp Submersible with controller
Shut Off Dynamic Head	45 metres	75 metres	100 metres	70 metres	100 metres	150 metres	70 metres	100 metres	150 metres
Water output*	96,000 litres per day from a total head of 30 metres	57,000 litres per day from a total head of 50 metres	39,000 litres per day from a total head of 70 metres	91,200 litres per day from a total head of 50 metres	62,400 litres per day from a total head of 70 metres	40,800 litres per day from a total head of 100 metres	128,250 litres per day from a total head of 50 metres	87,750 litres per day from a total head of 70 metres	57,375 litres per day from a total head of 100 metres

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

Notes: 1) For higher or lower head / PV capacity, or in between various models; water output could be decided as per the clause II. (i.e. performance specifications and requirements) specified earlier.

2) If surface pumps are used in lieu of submersible pumps, the water output must match that of the submersible pumps as specified in this table.

3) Module mounting structure shall be MS hot dipped galvanised, with a facility of manual tracking at least three times a day.

3. General terms and conditions

- 3.1. The Solar PV System shall be very robust and suitable to work in remote rural areas. Anti Theft bolts/nuts must be provided to the system.
- 3.2. A complete list of Bill of Materials shall be provided along with the offer.
- 3.3. The numbers of each component proposed for supply shall be clearly specified.
- 3.4. The bill of materials shall include HDPE pipes for submersible and surface mounted pumps
- 3.5. Minimum Specifications of the suction/delivery pipe shall be as follows:
 - Submersible Pumps – HDPE pipes of 10 Kg/Sq.cm. – minimum of 63mm OD-PE 100 Grade of 100ft length and submersible cable 3 core 2.5sqmm flat cable as per ISI standards of 120ft length.
 - Surface mounted pumps – HDPE pipes of 6 Kg/Sq.cm. – 90/110mm OD (Delivery/Suction)-PE 100 Grade of 50ft length and required cable as per ISI standards.
- 3.6. Spare parts
Bidder shall keep stock of essential spares at their nearest service center and/or at each site at their cost for five years maintenance. A recommended list of such spares shall be provided with the offer.
- 3.7. Installation and commissioning
 - 3.7.1. Detailed project execution plan shall be submitted along with the offer.

The bidder is responsible for arranging all the accessories and measuring instruments required to smoothly commission the system.

3.8. Packing, shipping and marking

- 3.8.1. The bidder shall be responsible for assuring that all commodities shipped are properly packed and protected to prevent damage or deterioration during shipment. Packaging and shipping costs shall be borne by the supplier. Customs clearance and all costs and actions associated with import duties, taxes and processing of documents within India are to be borne by the bidder.

3.9. Insurance

3.9.1. The bidder shall provide insurance coverage ex-factory until commissioning, and acceptance for replacement or repair of any part of the consignment due to damage or loss.

3.10. Delivery

3.10.1. The bidder shall indicate delivery time along with the offer, service centers near the Site or nearest places and ensure that all the essential men and materials are placed to ensure quick and efficient after sales service.

3.10.2. Training and after sales service is an important component of supply. The Village Level technicians and individual rural users shall be properly trained on operation and maintenance.

Annexure –I

CHECKLIST TO ACCOMPANY THE TENDER

Sl. No (1)	Description (2)	Submitted in Cover 'A' (Tech Bid) (3)	Page No. (see Note below) (4)
1	Test Report/Certificate issued by the MNRE/MNRE authorized Test Centers on or after 01-01-2014 of all the proposed SPV pumping systems	Yes / No	
2	Demand draft toward requisite Earnest Money Deposit (issued by any Nationalized bank) Rs.2,00,000/- - DD or Rs.4,00,000/- BG	Yes / No	
3	Demand draft towards Cost of tender document Rs. 10,000/- plus 5% GST	Yes / No	
4	Average Annual Turnover Certificate and Annual Audited Balance Sheets of the last 3 years ending 31st March of the previous financial year. Certified by Chartered Accountant.	Yes / No	
5	Experience Certificates for the last 3 years	Yes / No	
6	Copy of PAN card.	Yes / No	
7	Copy of latest Income Tax Clearance returns submitted along with proof of receipt (Latest SARAL form).	Yes / No	
8	Copies of GST Registration Certificate.	Yes / No	
9	Latest VAT/ Sales Tax clearance certificate	Yes / No	
10	Details of LOCAL Service Centres in the Districts	Yes / No	
11	Information on litigation history in which Bidder is involved.	Yes / No	
12	Any other documents/certificate as specified in tender conditions	Yes / No	

Notes:-

1. All the statements copies of the certificates, documents etc., enclosed to the Technical bid shall be given page numbers on the right corner of each certificate, which will be indicated in column (4) against each item. The statements furnished shall be in the formats appended to the tender document.
2. The information shall be filled-in by the Tenderer in the check list, as applicable and shall be enclosed to the Technical bid for the purposes of verification as well as evaluation of the tenderer's Compliance to the qualification criteria as provided in the Tender document.

Note: The bidders shall sign on all the statements, documents, certificates by him, owning responsibility for their correctness/authenticity.

TECHNICAL BID

PART-5

TECHNICAL BID FORMATS

FORMAT - I

FORMAT FOR TECHNICAL DETAILS OF EACH PROPOSED SPV WATER PUMPING SYSTEMS

(Separate Sheet for each system shall be provided)

(1)	Solar Module:	
1.1	Type and source of Solar Cell (Mono/Multi) :	
1.2	Make and Type :	
1.3	Voc	
1.4	Isc :	
1.5	Wp Rating	
1.6	Fill Factor	
1.7	Module efficiency	
(2)	Motor-pump Set :	
2.1	Make and Type :	
2.2	Rating (Voltage and Horse power) :	
(3)	Solar Pump Controller/ Pump Drive	
3.1	Make and Type :	
3.2	Rating	
(4)	Tracking Mechanism	
4.1	Auto /manual - give details	
(5)	Spares	
	List of maintenance spares for five years trouble free operation to be supplied with the system	
(6)	Water output figures are on a clear sunny day with three times tracking of SPV panel, under the "Average Daily Solar Radiation" condition of 7.15 KWh/ sq.m. On the surface of PV array (i.e. coplanar with the PV Modules).	
(7)	Balance of System Items/Component:	
7.1	Name of the cables , Distribution boxes etc.	

7.2	Name of the manufacturer & Make of Switches/Circuit Breaker/ Connectors/ Surge protection devices	
7.3	Enclosed supporting documents if any	From Page No..... to.....
7.4	Details in case of any deviation from the technical specifications as specified in the tender document.	
7.5	Details of HDPE pipe (For Submersible Pumps – HDPE pipes of 10Kg/Sq.cm. – minimum of 63mm OD-PE 100 Grade of 100ft length and submersible cable 3core 2.5sqmm flat cable as per ISI standards of 120ft length.)	

(Attach additional sheets if required)

All the components including Pumpset system, other components mentioned above should be quoted as a single item. No partial quotes are accepted.

(Signature of Tenderer with Seal)

FORMAT – II
 FORMAT FOR DETAILS OF EXPERIENCE

Please fill in information about Solar PV Systems installed in last three years.

Details	Year			Total
	2015-16	2016-17	2017-18	
Number of Solar PV Water Pumping Systems installed to any Govt organization in the country in the last 3 years				
Type of Solar PV Water Pumping Systems (HP) AC/DC, Surface/Submersible)				
Total contract amount (Rs.)				
Others				

NOTE: Above details without copies of work orders, completion certificates and satisfactory performance reports from the users will not be considered. If required, TSREDCO may inspect these installed systems or obtain the required information from the concerned. The certificates issued by the Govt Dept/Agencies/Organisations will only be considered.

Signature of the Tenderer with Seal

FORMAT – III

FORMAT FOR DETAIL OF THE DISTRICTS OPTED FOR INSTALLATION OF SOLAR PV WATER PUMPING SYSTEMS IN ORDER OF PRIORITY

Sl. No.	Name of the District opted for implementation
1	
2	
3	
4	
5	
6	

Signature of the Tenderer with Seal

FORMAT - IV
FORMAT FOR DECLARATION
(on Rs.100/- non judicial stamp paper)

I / WE have gone through carefully all the Tender conditions and solemnly declare that I / we will abide by any penal action such as disqualification or black listing or determination of contract or any other action deemed fit, taken by, the Department against us, if it is found that the statements, documents, certificates produced by us are false / fabricated.

I / WE hereby declare that, I / WE have not been blacklisted / debarred / Suspended / demoted in any department in Telangana or in any State due to any reasons.

Signature of the
Tenderer with Seal

FORMAT - V
FORMAT FOR TURNOVER DETAILS

Annual Turnover value during the last (3) Financial years by the Tenderer.

Sl. No.	Financial year	Value in Crores (Rs)
1.	2015-16	
2.	2016-17	
3.	2017-18	
4	Cumulative turnover of last three years	
5	Average Annual Turnover of the last three years.	

Attach certificate from the Chartered Accountant along with Annual Balance sheet.

Signature of the Tenderer with Seal

FORMAT - VI
FORMAT FOR DECLARATION ON LITIGATION HISTORY
Information on litigation history in which Bidder is involved.

- 1) Whether black listed/ Debarred/Suspended from execution of work.
- 2) Other litigations. If any including Court litigations. Arbitrations etc.

Department and Concerned officer	Other party(ies)	Case of dispute.	Amount involved.	Remarks showing present status.
1	2	3	4	5

Signature of Tenderer

FINANCIAL BID

PART- 6

FORMAT – I
FORMAT FOR FINANCIAL BID

Name of the Firm: _____

Name of work: Design, Supply, Installation & Commissioning of Solar PV Water Pumping Systems on Turnkey basis for agriculture purpose in the state of Telangana including 5 Years CMC (As defined in the scope of work)

Sl. No	Item	Supply, Installation and Commissioning of Complete Solar PV Water Pumping System comprising of SPV Modules, VFD/Inverter, Remote Monitoring arrangement, AC/DC Surface / Submersible Pump, Mounting Structure, Manual Tracking, Cables, HDPE Pipe etc. as per MNRE Specifications, inclusive of CMC and Insurance for 5 years on turnkey basis.					
		Unit Rate per Pump set (in Rs.) (Inclusive of all applicable taxes, duties etc.)					
		3 HP Pump set		5HP Pump set		7.5HP Pump set	
		AC	DC	AC	DC	AC	DC
1	Surface mounted Solar PV Pumpset						
2	Submersible Solar PV Pumpset						

Note: * Unit Rate (Rs/HP) for Capacity shall not exceed *latest MNRE Benchmark Price.*

Certified that:

1. Above rates are in accordance with the specifications & various terms & conditions mentioned in the tender document and are applicable for installation anywhere in Telangana State.

2. The rates are inclusive of all latest prevailing taxes and duties etc., of Govt. of Telangana as well as Govt. of India. Moreover, TSREDCO will not be responsible for providing Road permits.

The rates are inclusive of all the charges regarding Design, Installation, Commissioning, Transportation, Insurance and CMC for 5 years, remote monitoring mechanism, tracking facility, additional BOS like Suction Pipe, Delivery Pipe, Cable etc., with proper foundation and any other charges mentioned in the Tender Document and also any risks that are foreseen by the Tenderer.

- All the components including PV system, software's and other components mentioned above should be quoted as a single item. No partial quotes are accepted.
- The system test certificates approved by the MNRE authorized test centers of all the systems are furnished in the technical bid
- Site conditions shall be taken care of while laying the foundation for installation of the system.
- The components/items to be supplied for installation of the system are as per the component/items indicated in the test report of the authorized test centers of MNRE including the brand, capacity etc.
- The component wise cost details with brand name are enclosed

(Signature of Bidder)

With seal

FORMAT – 1 A

Statement showing the component wise cost details with brand name, for the quoted price, for supply of Surface/ Submersible solar PV Pumpsets

Sl. No	Item	Brand	3 HP Pumpset (in Rs inclusive of all taxes & duties)		5 HP Pumpset (in Rs inclusive of all taxes & duties)		7.5 HP Pumpset (in Rs inclusive of all taxes & duties)
			Submersible	Surface	Submersible	Surface	Submersible
1	Solar P V Modules as per MNRE/IEC specifications						
2	Solar Inverter / VFD with remote monitoring arrangement						
3	AC / DC Pump 5 star rated						
4	GI Mounting structure with manual tracking as per MNRE norms						
5	<p>A.SUBMERSIBLE PUMP HDPE pipe of 10kg/sqcm-minimum 63mmOD-PE 100 grade of 100 ft length with 3 core 2.5 sqmm flat cable as per ISI standards of 120 ft length.</p> <p>B. SURFACE MOUNTED PUMP HDPE pipe of 6 kg/ Sqcm- 90/110 mm OD(Delivery/Suction)-PE 100 grade of 50ft length with required Cable as per ISI standards</p>						
6	Civil works and all other necessary materials required						

	for installation including transport charges etc at any location in TS						
7	Installation, Commissioning & Insurance charge with CMC for a period of 5 years.						
8	Any other item, if any						
	TOTAL AMOUNT						

* All the above items are as per MNRE specifications and also as per the test report issued by the authorized test centers of MNRE. These rates are applicable for supply & installation of solar pumpsets anywhere in Telangana state.

Note:- The component wise cost details without quoting of financial bid is not valid.

SIGNATURE WITH SEAL