Online tenders are invited in two stage bid system i.e. Technical bid and Financial Bid as per the details given below in Schedule-A

SCHEDULE-A

(Effective w.e.f 11.12.2019)

Sr. No.	PARTICULARS	REMARKS
1	Tender Notice No.	17/ 2020-2021
2	Sr. No. of Tender.	02
3	Superscribed No. of Tender.	54/HR/RC/E-4/2020-21
4	Online submission of EMD, Tender fee & e-Service Fee **Option-1: Through Net Banking and Debit card**	On or before last date of submission of Technical Bids upto 12:00 Noon
5	Online submission of EMD **Option-2: Through RTGS/ NEFT-** *(In case of above, the bidder has to pay Tender Fee & e-Service Fee Through Net Banking and Debit card as per the given date & time schedule)*	On or before 16.07.2020 Upto 02:00 P.M.
6	On line Bid Preparation & submission.	Upto 20.07.2020 at 02:00 P.M.
7	Date & time of opening of Technical Bids/s.	On or after 20.07.2020 at 02:30 P.M.
8	Date & time of opening of Financial Bids/s	To be decided later on
9	**Tender Fee:**	
	(I) For Haryana based manufacturing Micro and Small Enterprises (MSEs) & Khadi Village Industries Unit eligible as per the "Haryana State Public Procurement Policy for MSME - 2016" notified vide G.O. No. 2/2/2016-4I BII(1) dated 20-10-2016 and as amended from time to time.	NIL
	(II) For Haryana based Startups/First Generation Entrepreneurs eligible as per State policy "Concession/benefits in Public Procurement to Startups/First Generation Entrepreneurs of State" issued vide G.O No.2/2/2016-4I B-II dated 03.01.2019.	NIL
	(III) For remaining bidders both from the Haryana and Non Haryana	Rs. 5000/-
10	**Earnest Money Deposit (EMD) required:**	
	(I) For Haryana based manufacturing Micro and Small Enterprises (MSEs) & Khadi Village Industries Unit eligible as per the "Haryana State Public Procurement Policy for MSME - 2016" notified vide G.O. No. 2/2/2016-4I BII(1) dated 20-10-2016 and as amended from time to time.	NIL
	(II) For Haryana based Startups/First Generation Entrepreneurs eligible as per State policy "Concession/benefits in Public Procurement to Startups/First Generation Entrepreneurs of	NIL

	State" issued vide G.O No.2/2/2016-4I B-II dated 03.01.2019.	
	(III) Central or Haryana Public Sector Enterprises and "approved sources" as declared by the Industries Department, Haryana	NIL
	(IV) For remaining bidders both from the Haryana and Non Haryana	2,00,000/-
11	E-Service Fee	Rs. 1000/-
12	Date and time of receipt of samples (if required)	N.A
13	Rates to be kept valid for acceptance upto:	31.12.2020

A. Information to Bidders:

The Bidders can download the tender documents from the Portal: https://etenders.hry.nic.in

1. Date and Time of making payment of tender fee, earnest money deposit (EMD) and e-service fee is as under:

A	Online submission of EMD, Tender fee & e-Service Fee **Option-1: Through Net Banking and Debit card**	On or before last date of submission of Technical Bids upto 12:00 Noon
B	Online submission of EMD **Option-2: Through RTGS/ NEFT-** *(In case of above, the bidder has to pay Tender fee & e-Service fee Through Net Banking and Debit card as per the given date & time schedule)*	**On or before 16.07.2020 Upto 02:00 P.M.**

2. As the Bids are to be submitted online and are required to be encrypted and digitally signed, the Bidders are advised to obtain Digital Signature Certificate (DSC) at the earliest. For obtaining Digital Certificate, the Bidders should follow Point No.- 2 under "Instructions to bidder on Electronic Tendering System" and available at the link: https://etenders.hry.nic.in
3. The Bidders shall have to pay for the Tender Documents Fee, EMD Fees & e-Service Fee online by using the service of secure electronic payment gateway. The secure electronic payments gateway is an online interface between bidders and online payment authorization networks.
4. The bidders must have Net Banking account in order to pay Tender Document Fee and e-Service Fee.
5. **Payment of Tender Fee:-** The payment for the Tender Document Fee shall be made by the interested bidder online directly through Net Banking with the available Banks at e-GRAS e-Payment Gateway.
6. **Payment of e-Service Fee:-** E-Service Fee payment shall be made separately by the interested bidders/ contractors online directly through Net Banking Account.
7. **Payment of EMD:-** The payment of EMD can be made through Net Banking or RTGS/ NEFT as per details at Para-3 above. In this regard please refer to 'Online Payment Guideline' available at the link: https://etenders.hry.nic.in
8. Intending bidders will be mandatorily required to sign-up online (create user account) on the website https://etenders.hry.nic.in to be eligible to participate in the e-Tender. In case the intended bidder fails to pay EMD fee under the stipulated time frame, he/she shall not be allowed to submit his/ her bids for the respective event/ Tenders.
9. In case of payment of EMD through RTGS/ NEFT, the interested bidders must remit the funds at least T+1 working day (Transaction + One Day) in advance i.e. on or before **16.07.2020 upto 2.00 P.M;** and make payment via RTGS/NEFT to the beneficiary account number specified under the online generated challan. The intended bidder/ Agency thereafter will be able to successfully verify their payment

online, and submit their bids on or before the expiry date & time of the respective events/ Tenders at https://etenders.hry.nic.in

10. However, the details of the EMD, Tender document Fee & E – Service Fee are required to be filled/ provided at the time of online Bid Preparation.
11. Online Technical Envelope—Reference details of the Earnest Money Deposit, Tender Document Fee & e - Service Fee instrument and scanned copies of supporting documents and QR/technical criteria with proper index and page numbering on all the documents have to be provided as per **Annexure-IA** of this document.
12. If the tenders are cancelled or recalled on any grounds, the Tender Document Fee and e-Service Fee will not be refunded to the bidder.

B. Brief Description of Procuring/ Rate Contract item:

Sr. No.	Description of Stores	Quantity/ Value of Rate Contract	Place of Delivery
1	**Design, Supply, Installation, Commissioning along with Operation & Maintenance for 5 Years for replacement of existing AC pumpsets with grid connected DC Solar Pumping Systems.**	On Annual Rate Contract basis (Approx. 466 pumps of various capacities with an estimated value of Rs. 1650.00 Lakh).	Biana (Karnal district) and Marupur (Yamunanagar district) or anywhere in Haryana

The capacity wise tentative requirement of the pumps are as under:

Number of grid-connected farmers	Biana feeder **(Karnal district)**	Marupur feeder **(Yamunanagar district)**
Distribution of (registered) Connected Load:		
- 3 HP	12	108
- 5 HP	23	61
- 7.5 HP	126	5
- 10 HP	73	6
- 12.5 HP	44	0
- 15 HP	8	0
TOTAL	**286**	**180**

The detailed technical specification/ description of the above stores are available at **Annexure-I** of this document.

C. Specific Terms & Condition/ Eligibility Criteria related to above Store:

1. The Bidder should be either a body incorporated in India under the Companies Act, 1956 or 2013 including any amendment thereto or a proprietary/partnership/LLP firm. A copy of certificate of incorporation shall be furnished along with the bid in support of above.

2. Bidder should be a registered manufacturer of Solar PV Module OR solar water pump.

3. It will be mandatory to use indigenously manufactured solar panels with indigenous solar cells and modules. Further, motor-pump-sets, inverter/controllers and balance of system should also be manufactured indigenously. The vendor has to declare the list of imported components used manufacturing of equipment used in the solarisation system. Bidder shall submit proof for manufacturer of solar PV module OR solar water pump.

4. The bidder should have minimum average annual turnover 30% of the estimated value in the last three years, ending 31st March of the previous Financial Year i.e. up to 2018-19 duly certified by Charted Accountant.

5. The bidder should be profitable in last financial year i.e. 2018-19 and any of the one of the financial year out of 2016-17 or 2017-18.

6. Experience of having successfully completed, similar purchase/contracts costing not less than the amount equal to 40% of the estimated value of the indent, during last three years ending 31st March of the previous Financial year (2018-19), to Govt. / Semi Govt. Organizations. Similar items mean:-

    (i) Off-grid solar water pumping systems
    (ii) Grid connected solar water pumping systems

7. The bidder shall have to mandatorily submit the acknowledgement of the sample submitted in their name for quoted capacity (ies) of solar Pumping Systems from the National Institute of Solar Energy or any other lab accredited by NABL/MNRE for testing of solar PV Water Pumping System as per MNRE specifications 2019-20 and testing procedure and are authorized to issue approval certificate on successful testing of a solar PV water pumping system.
   The successful bidder(s) shall have to submit the test certificated for each capacity pump in which they are qualified as per MNRE specifications 2019-20 and testing procedure within 30 days of issuance of rate contract, failing which their contract will be terminated without giving any notice.

8. The manufacturing firm should have a valid ISO 9001:2015 Certificate in the field of quoted item and copy of valid ISO 9001:2015. Certificate must be attached with offer.

9. Bidder should have not been debarred/blacklisted by any Govt. Deptt's / organization/ PSU's / institutions/ agencies/ autonomous Organizations.

10. The Bidder should have valid GST registration certificate. A copy of which should be enclosed.

11. The Successful Bidder shall be required to establish at least one Service Centre at District Level in their area of operation in Haryana & the contact details of the same should be available on bidder's website. The successful bidder should maintain the inventory of required spare parts at the service center(s).

12. Bidders should provide an undertaking that after the expiry of warranty period, they will provide necessary spare and services for the maintenance of items up to the period of additional five years.

13. Technical Catalogue of the product is required to be provided along with the material to the end user & same should be available on bidder's website.

14. Rate contract will be made / valid for one year from the date of issue.

15. The rates quoted should be inclusive of all other charges like FOR, insurance etc. (whichever applicable**) and inclusive of GST**.

16. **Delivery period (includes supply, installation & commissioning):-** 4 months from the date of placement of work order.

17. **Warranty: -** Five years from the date of commissioning and PV module(s) will be warranted for a minimum period of 25 years from the date of supply**.** PV modules used must be warranted for their output peak watt capacity, which should not be less than 90% at the end of Ten (10) years and 80% at the end of Twenty five (25) years.

18. ***Payment :-***

    i. *60%* payment will be released within one month time on submission of material receipt of physical delivery of inspected/ accepted goods in physically good condition at consignee godown on submission of bill of material supported by material receipt duly signed by PO/APO of the **concerned district**.

    ii. 29% will be released after satisfactory installation / working of the items on submission of Joint Commissioning Report (JCR) as per the prescribed format duly signed by the user, representative of DISCOM & PO/APO of the consignee department/ office with countersignature of Additional Deputy Commissioner-cum-CPO of the concerned district.

    iii. Balance 10% against submission of BG of equal value, valid for 5 years or 2% on completion of each year subject to submission of satisfactory report from the respective district offices.

    iv. Balance 1% after expiry of 25 year warranty period of modules.

19. In case of any complaint in the working of the items during the warranty period, the firm shall **attend the same within 24 hours** from the time of logging of first complaint/call by the consignee and the items must be repaired **within three days** thereafter. The complaints would be logged by the Department officers by e-mail/fax in order to keep the proper delivery records. Further in case of failure to do so, penalty @ 0.1% of the system cost per day (subject to max. 10% of the cost) after expiry of 72 hours shall be imposed. If the firm does not attend the complaint within the max penalty period then the system may be got repaired/replaced from the performance security amount. In case whole performance security amount is utilized and complaint/s are still pending then an online/registered notice will be sent to the firm to attend the complaint and if failed to attend the **complaint within 7 days then firm may be blacklisted for repeated violation (more than 3 times)** and a legal proceedings may be initiated against the firm for breach the agreement.

20. Material shall be strictly as per DNIT specifications/requirements. If there is any left out specification, the same shall be considered as per the latest specifications/requirements

applicable as per MNRE/ BIS/International Standards. The bidders are advised to be well conversant with these specifications/requirements for their compliance.

21. The make of major parts of system i.e. Module, Pump, Controller, Grid tied inverter (as mentioned in a separate test report) should be strictly as per the make mentioned in the test reports and accordingly, the same be mentioned in the technical bid. The tenderer may submit more than one test report (maximum three) for a particular capacity of pump with different makes of major component i.e. Modules, pumps and pump controller, grid tied inverter and the same will be acceptable.

22. BUYBACK OF OLD PUMP SET: The Successful bidder(s) shall buy back the old pump set i.e. the pump set which is to be replaced from the farmer.

23. INSURANCE: The successful bidders will have to get the insurance of the systems done during the entire warranty period of 5 years **from any of Public/Private Sector Insurance Companies.**

The solar water pumping systems shall be insured for natural calamities, theft & burglary during 05 years warranty period.

Note: The format of the Technical Bid/ Index for the Technical Bid Documents will be as per **Annexure-IA** of this document and the bidders are requested to upload their Technical Bids on the Portal with index as provided in **Annexure-IA.**

In case of non submission of required Eligibility Documents as at Annexure-IA, the bid of the firm will not be considered and no further chance will be given for the submission of these documents. However, clarification, if any, of already submitted documents may be obtained in case required as per the rules.

D. Standard Terms and Conditions (wherever applicable these terms & conditions will overrule the specific terms and conditions as at Para 'C' above):-

1. All the annexure from 'Annexure-III to XIII' including 'Schedule-B of Supply' are part of this DNIT and are available as 'Tender Forms' at Link http://dsndharyana.gov.in/Portals/0/documents/Tender%20Forms%20DSnD_11042019.zip?ver=2019-06-20-103057-847 or the same can be downloaded from home page of http://dsndharyana.gov.in/en-us/ under 'Downloads' > 'Tender Form'.

2. **Procurement of Stores through Rate Contract System:-**
Where ever Government considers expedient that more than one supplier/ manufacturers should be kept on rate contract, it may so decide on case to case basis subject to conditions available at **Annexure 'III'**.

3. **EMD:-**
The firms are required to deposit Earnest Money as indicated above failing which the tenders are liable to be rejected. Manufacturing Micro & Small Enterprises (MSEs) of the State, Central or Haryana Public Sector Enterprises, "approved sources" as declared by the Industries Department, Haryana, and Startups/First Generation Entrepreneurs are exempt from the deposit of EMD. The condition at Sr. No. 7 of "Instructions to Tenderers of the TENDER FORM" shall be deemed to be amended to this extent as per provisions contained at Para 13 (i) (ii) of G.O. No.2/2/2010-4I-BII of dated 28.05.2010 and Para no 3(A)(ii) of G.O. No. 2/2/2016-4I BII (1) of dated 20.10.2016 (or as amended from time to time in this regard)

The condition at Sr. No. 6 of Annexure "A" – "Conditions with TENDER FORM" shall be deemed to be cancelled. (amendments with effect from may 28, 2010)

4. **Performance Security:**

The successful tenderer shall be required to deposit Performance Security Deposit as per provisions contained in Govt. of Haryana G.O. No. 2/2/2016-4I BII(2) dated 20-10-2016 as under:-

Sr. No.	Type of Firm/Enterprises	Value of Performance Security Deposit
1	Haryana based firms:- (i) **#** Haryana Based Micro and Small Enterprises (MSEs) (ii) Haryana based other firms/enterprises	 (i) @0.2% of the order value or estimated value of Rate Contract (where maximum value of rate contract (RC) is indicated, it will be on the basis of the same) (ii) @2% of the order value or estimated value of Rate Contract (where maximum value of rate contract (RC) is indicated, it will be on the basis of the same)
2	Other States/ UTs based firms	@5% of the order value or estimated value of Rate Contract (where maximum value of rate contract (RC) is indicated, it will be on the basis of the same)
# Haryana based MSEs will be eligible for performance security deposit @ 0.2% who have filed Entrepreneurs Memorandum (Micro or Small Enterprise category) in the Industries Department Haryana and who participate directly in the tendered/quoted items and offering to supply the entire quoted quantity manufactured from their own Haryana based unit.		

The performance security in excess of the EMD already deposited can be submitted in the shape of Demand Draft/Call Deposit Receipt/Banker's Cheque or in the shape of equivalent Bank Guarantee of any scheduled bank with branch in Chandigarh/ Panchkula. The condition at Sr. No. 8 of "Instructions to Tenderers of the TENDER FORM" shall be deemed to be amended to this extent as per provisions contained G.O. No. 2/2/2016-4I II(2) dated 20-10-2016 **as at Annexure IV** (or as amended from time to time in this regard)

5. **Price Fall Clause:**

Price fall clause will be as per condition no. 15 of "General Conditions of Supply" as available at **Annexure-V**. The same is that the price quoted in the tender/quotation or approved in the Rate Contract for the stores shall not exceed in any way the lowest price at which the tenderer quote for the supply the stores of identical description to DGS&D, New Delhi/ State Government Institutions/Undertakings/any other person during the delivery period/currency period of the rate contract. If, at any time during the delivery period/currency period, the successful tenderer reduces the rates/sale price of the quoted stores to any person at the price lower than the price chargeable under the supply order/ rate contract, the tenderers should forthwith notify such reduction and inform this office and the price payable under the supply order/contract for the stores supplied after the date of coming into force of such reduction of the rates shall stand correspondingly reduced to that level. The successful tenderers shall promptly notify the reduction of rates to this office as well as to the concerned Indenting Officer/ Consignees. The tenderer shall also give a certificate on their bills that the rates charged by them are not in any way higher to those quoted by them to the DGS&D, New Delhi and other State Government etc., during the corresponding period. The Indenting Officer shall be required to ensure that requisite certificate is given by the concerned firm on the bills before releasing their payments.

6. **Penalty to firm on Delay in delivery:** Should the contractor fail to deliver or dispatch any consignment within the period prescribed for such delivery or dispatch stipulated in the supply order, the delayed consignment will be subject to 2% penalty per consignment per month recoverable on the value of the stores supplied. The other details will be as per provision contained in Sr. No. 14 of "Schedule-'B' Condition of Contract".
7. The bidders are required to quote the basic rates, the delivery/ transportation costs/ applicable GST and duties etc, and the place of billing for the supply of stores clearly and separately. The bidders are required to intimate the place of billing.
8. **Penalty Clause for Department/ Govt. Agencies for delay in Payment**
   Delay in payments to the suppliers beyond the stipulated credit period indicated in the supply order, unless supported by cogent reasons and approved by a higher authority, will attract penal interest on the defaulting amount @ Rs. 25/- per rupees one lakh per day of delay beyond the stipulated credit period. Non provision of adequate budget will be no ground for delay in payments to the supplier. This is as per provisions contained at Para 17 of G.O. No.2/2/2010-4I-BII of dated 28.05.2010 (or as amended from time to time in this regard).
9. **Negotiation of Rates**
   Regarding negotiations of rates, policy issued by the State Government vide G.O. No.2/2/2010-4-IB-II dated 18.06.2013 (**Annexure-VI**), G.O. No.2/2/2010-4-IB-II dated 16.06.2014 (**Annexure-VII**), G.O. No.2/2/2010-4-IB-II dated 09.02.2015 (**Annexure-VIII**) will be applicable.
10. The State Government has notified "Haryana State Public Procurement Policy for MSME -2016" vide G.O. No. 2/2/2016-4I BII(1) dated 20-10-2016 (**Annexure-IX**) and amendment vide G.O. No. 2/2/2016-4IB-II dated 11.12.2019 (**Annexure-X**) which will be applicable in respect of concessions to Haryana based MSMEs and KVIs. For claiming the relevant concession/s like Tender Fee, Earnest Money Deposit (EMD), Turnover, Exemption in respect of Past Performance & Experience, Purchase Preference and Performance Security, the bidders are required to submit the documentary proof from Government authorities showing that they come under Haryana based manufacturing MSME/KVI units as the case may be e.g. *****Entrepreneurs Memoranda/Udhyog Aadhar in Haryana in bidder's name and further subject to fulfillment of eligibility criteria as provided in the said Policy of 2016.
11. **Concession/benefits to Startups/First Generation Entrepreneurs of State:**
    The State Government has notified "Concession/benefits in Public Procurement to Startups/First Generation Entrepreneurs of State" issued vide G.O. No. 2/2/2016-4I B-II dated 03.01.2019 (**Annexure-XII**) which will be applicable in respect of concessions to Startups/First Generation Entrepreneurs of State. For claiming the relevant concession/s like Tender Fee, Earnest Money Deposit (EMD), Turnover, Exemption in respect of Past Performance & Experience, Purchase Preference and Performance Security, the bidders are required to submit the documentary proof as per the said policy.
12. In case of evidence of cartel formation by the bidder(s), the EMD is liable to be forfeited along with other actions as are permissible to Government like filing complaints with the Competition Commission of India and/ or other appropriate forums.
13. **Purchase Preferences for approved Sources**
    The Director, Supplies & Disposals, Haryana, reserves the right to allow purchase preference to the approved sources, including Central or Haryana State Public Sector Undertakings/Enterprises, provided that such approved source takes part in the bidding process and the quoted prices of the approved source is within 10% of the lowest acceptable price, other things being equal. However, such purchase

preference would be available to the approved source only at the lowest acceptable price. The latest list of Approved Source is contained in Government Order no. 6/03/2007-4IB-II dated: 14-02-2008 of the Industries Department and is subject to further amendment from time to time.

14. **Penalty clause for rejected samples/ material offered by the Bidder:**
In case, the material offered for inspection by the firm fails to meet the specifications stipulated in NIT/Order/Contract and the samples are rejected by the Inspecting Committee, the Indenting Department will have the right to levy a penalty at 0.1% of the total order value. In case, the material offered for inspection fails during the 2nd inspection also, the Indenting Department will have the right to increase the penalty to 0.25% of the total order value. In case, the material offered fails during the 3rd and final inspection also, the firm will be liable for penal action including forfeiture of security, risk purchase, debarring/ blacklisting in future, and no further opportunity for inspection would be provided to the supplier firm.

15. Grievance Redressal Mechanism for dealing with the representations/ complaints/ letters of the participating bidders/ firms:
A time bound Grievance Redressal Mechanism for dealing with the representations/ complaints/ letters of the participating bidders/ firms in the tendering process in the State Public Procurement will be governed by State Government Policy issued vide G.O No.2/2/2016-4I-B II of dated 25.07.2016 (**Annexure-XI**). All the bidders/ firms who want to make any representation/ complaint against any issue related to their technical scrutiny of the bids may do the same within 5 working days (up to 05:00 P.M. of the Fifth Working day) of the date of issue of letter/ intimation regarding their **As per NIT/ Not as per NIT status.** They have to ensure that their communication is delivered/ reached within 5 working days and delay in postal will not be counted as a valid reason. No representation/ complaint in whatsoever manner from the bidders/ firms will be entertained after the opening of Financial Bid.

16. Arbitration Clause
The Arbitration if any will be decided as per the provision contained at Sr. No.18 of "Schedule 'B' Conditions of Contract"

17. Jurisdiction
All disputes will be settled within the jurisdiction of the Head Quarters of Director, Supplies & Disposals, Haryana at Panchkula.

E. OTHER TERMS AND CONDITIONS

1. The firms are required to mention bifurcation of their rates showing the detail of Basic Rates, GST, Duties etc. in their bid. In case, the supplies are delayed by the firm beyond the stipulated delivery period & there has been any upward revision in the rates of GST/ Duties ON THE CONTRACTED ITEM, no such increase will be allowed. However, if there has been any reduction in GST/Duties, the same will be availed. No variation in GST/ Duties on raw material will be applicable.
2. All documents to be submitted by the tenderers with their offer should be self attested in case the same are copies of original documents.
3. The Earnest money of the tenderers will be forfeited to Govt. account and blacklisting/ debarring besides other penal action, if they withdraw their offer/ rates or modify the terms & conditions of the same at any time during the validity of their offer before acceptance.
4. The Bid i.e. Technical Bid as well as Financial Bid is to be submitted online on web portal https://etenders.gov.in/eprocure/app. The Technical Bids uploaded on the portal should have proper indexing and page numbering on all the documents forming the Technical bid. However, the firms have option to submit the supporting documents as required to be supported along with Technical Bid either in on-line mode along with their Technical Bids or in offline mode in physical form to the office of DS&D by due date and time. In case supporting documents are to be supplied in physical mode, then it should be so specified in their Technical Bid and the supporting document must be deposited in the office of Supplies & Disposals, Haryana before the due date & time of opening of Technical Bids.

5. The Financial bid/s of only those bidders/ items will be opened who qualify on the basis of their Technical Bids. The date & time of opening of the financial bids will be intimated in the due course.
6. The offer without prescribed earnest Money, tender Fee & E-Service fee is liable to be summarily rejected. The deficiency in the remaining documents and tender requirement can be made subject to the rules in this regard and decision by Director, Supplies & Disposals, Haryana, Panchkula
7. The quantity of Stores can be increased or decreased.
8. Notwithstanding anything contained in the Tender, Supplies & Disposals Department Haryana reserves the right to accept or reject any Bid, and to cancel the bid process and reject the Tender, at any time, without thereby incurring any liability to the affected Bidder or Bidders and without any obligation to inform the participating/affected Bidder (s) the reason for such decision.
9. **Other terms & conditions as contained in various Annexure/ Documents as available under the folder "TENDER FORMS" as available at the link http://dsndharyana.gov.in/Portals/0/documents/Tender%20Forms%20DSnD_11042019.zip?ver=2019-06-20-103057-847 or the same can be downloaded from home page of http://dsndharyana.gov.in/en-us/ under 'Downloads' > 'Tender Form' form part of this DNIT.**
10. **Instructions to bidder on Electronic Tendering System.**
    Registration of bidders on e-Procurement Portal, Information about Digital Certificate, Instructions about Online Payment of Tender Document fee/e-Service Fee/Earnest Money, Important Instructions & Help manual for online bidding and other General issues option available on Home page of NIC e-procurement portal i.e https://etenders.hry.nic.in.

    In case bidders need any clarifications or if training required participating in online tenders they can contact office Timings of Help-desk support & Contract Details:-
    The detail may be seen under " Contract US" option available on Home Page of NIC e-Procurement portal i.e https://etenders.hry.nic.in.
    For support related to Haryana Tenders in addition to Helpdesk:-
    In addition, For support related to Haryana Tenders in addition to helpdesk you may also contract to following:-
    E -mail: eproc.nichry@yahoo.com
    Desk: 0172-2700275

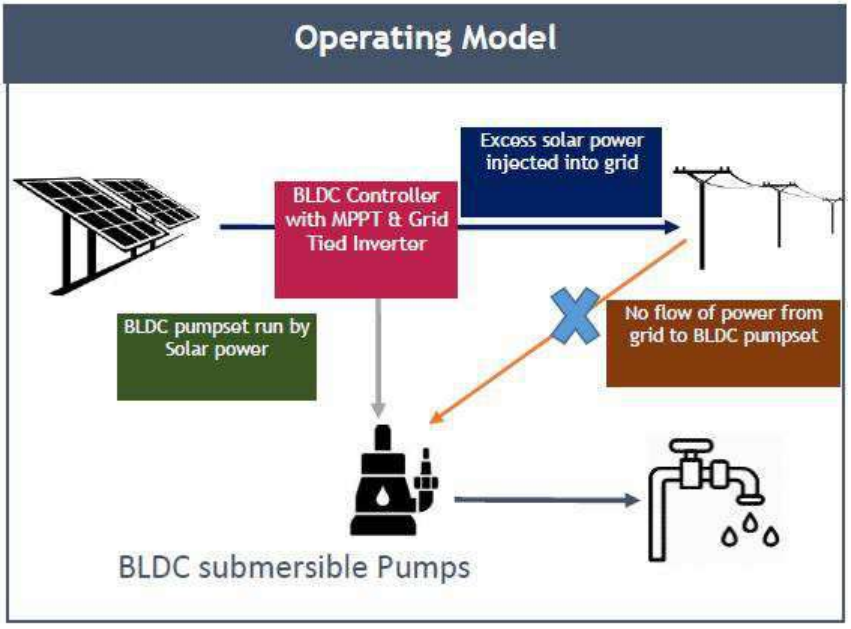
Assistant Director,
For & on behalf of Governor of Haryana.

Annexure-I

The detailed Specifications of the Store items as mentioned in Para B of the Schedule-A/NIT are as under:-

BLDC/PMSM/SRM Grid Connected Solar Water Pumping System

Following is the operating model of the solar photovoltaic water pumping system:



DC power from solar panels is passed through controller with MPPT to operate BLDC/PMSM/SRM submersible pump. Excess solar power shall be converted to AC power using inverter and is injected into the grid. **However, farmer cannot withdraw energy from grid as BLDC/PMSM/SRM pump set requires DC power to operate.**

These solar water pumping system should meet the minimum technical specifications of the **MNRE, GOI issued vide circular no. 41/3/2018-SPV Division dated 17.7.2019** (as amended from time to time) for standalone solar water pumping systems, these specifications also cover specifications for pump/motor, solar modules, Module Mounting Structure and other balance of system for upto 10 HP capacity pumps. The same shall be adopted as minimum system specifications for solarisation of these grid connected agriculture pumps. For grid-tied inverters etc., applicable BIS/MNRE/IEC specifications shall be followed. Protection equipment including surge protection devise, lightning arrestors, earthing, MCB/MCCB/RCCB, etc., shall be provided as per BIS/IEC standard.

A. DISCHARGE OF GRID CONNECTED SOLAR WATER PUMPING SYSTEMS AT VARIOUS HEADS

SN	Type Of Pump	Cap	Watt	Discharge Liters Per Day at various Head (m)					
				30	50	70	100	150	200
1	DC Submersible	03 HP	3000	114000	69000	45000	--	--	--
2	DC Submersible	05 HP	4800	--	110400	72000	50400	--	--
3	DC Submersible	7.5 HP	6750	--	155250	101250	70875	--	--
4	DC Submersible	10.0 HP	9000	--	207000	135000	94500	--	--
5	DC Submersible	12.5 HP*	11250	--	258750	168750	118125	95625	73125
6	DC Submersible	15.0 HP*	13500	--	310500	202500	141750	114750	87750

*As conveyed by MNRE to HAREDA. The other specification for these 12.5 and 15.0 HP BLDC/PMSM/SRM pumps, the minimum technical specifications of the **MNRE, GOI issued vide circular dated 17.7.2019 shall be applicable**

B. Requirements of Remote Monitoring System

1. State Implementing Agency (SIA) will have a common SWPS (Solar Water Pumping System) Management platform for monitoring of operation and performance of SWPS installed under PM KUSUM Scheme.
2. Remote Monitoring System (RMS) of SWPS should have following minimum features or modules:
    a. Solar System Performance: DC Voltage, DC current, AC output Current, Power, Drive frequency, Energy (including energy injected into the grid), etc.
    b. Pump Performance: Running Hours, Water Discharge (Output), etc.
    c. RMS Performance: %Device Connectivity, %Data Availability, etc.
    d. Geo Location: Real time latitude and longitude should be captured
    e. Events and Notifications: Faults related to Pump Operation, Solar generation, Controller/Drive faults like overload, dry run, short circuit, etc.
    f. Consumer Management: Name, Agriculture details, Service No. Contact Details, etc.
    g. Asset Management: Ratings, Serial Number, Make, Model Number of Pump, Panel and Controller, Geo Location, IMEI number (of communication module) and ICCID (of SIM).
    h. Complaint and Ticket Management- HAREDA will provide state level Solar water pumping system (SWPS) software to integrate multiple remote monitoring system of KUSUM component A, B & C. Complaint & Ticket Management system is one of the software module of SWPS. This software module will auto-generate tickets and notifications if data is not available for consecutive 3 days.
        a. Consumer Mobile Application: Generation, Running Hours, Water Discharge, Complaint logging, etc.
3. RMS provided by all bidder's should connect to State Level Solar Energy Data Management platform, which will have interface with National Level Solar Energy Data Management platform.
4. Scope of work for Remote Metering and Communication system

4.1. The Bidder shall supply the following hardware, software along with necessary licenses (wherever required) to the Client:

(a) Bidirectional and unidirectional energy meters with specifications (including CTs and communication formats) as per DISCOM requirement

(b) An 'internet of things' (IoT) device consisting of device communication interfaces and field interfaces (inputs/ outputs), microprocessors, data storage, remote communication and auxiliary features as per specification in this section.

(c) A comprehensive 'Metering Console' to house the energy meters, IOT device internal power and communication wiring, busbars, auxiliary equipment, etc. in an enclosure as per specification in this section. The Bidder shall supply the Metering Console after integrating all equipment within the Metering Console into plug and play 'sets' as per the requirement of this Tender. Further, the Metering Console shall be commissioned at site as a single unit. Energy meters of metering unit will be standardized to communicate either on DLMS or MODBUS protocol.

Remote Monitoring System shall capture data from

1. Energy meters using DLMS/Modbus RTU Protocol
2. Inverter using Modbus RTU Protocol
3. Pump Controller using Modbus RTU Protocol

For standardization of communication between RMS and state level SWPS software, common JSON message format of Energy Meters/Inverter/Pump Controller will be provided by HAREDA

4.2. The Bidder shall undertake the integration, operation and maintenance of the above components along with its proof of concept (PoC) and user acceptance test (UAT).

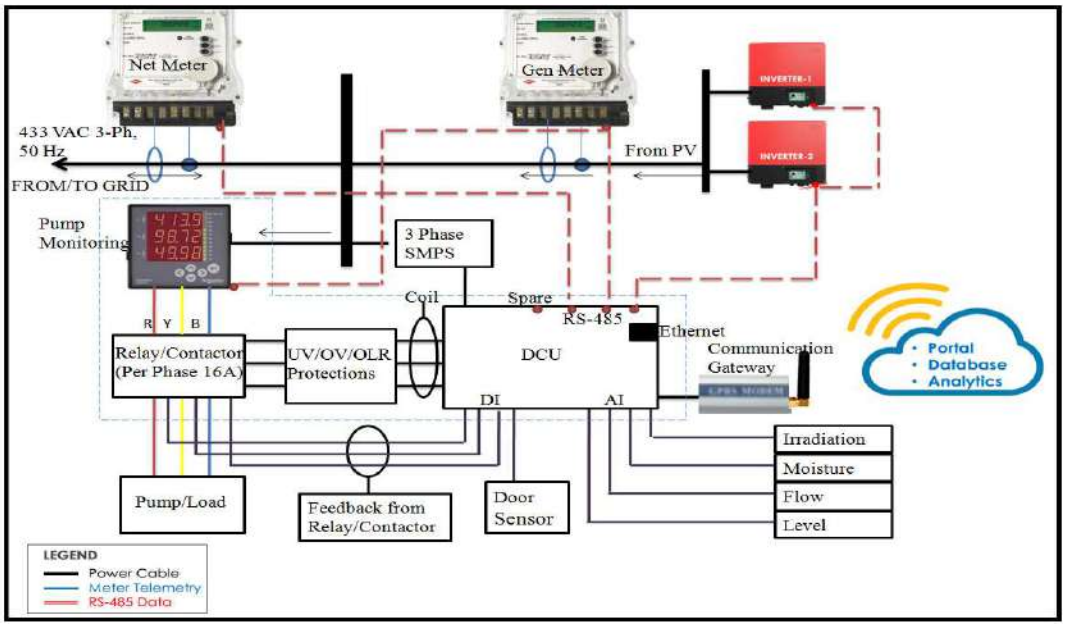
4.3. The Bidder shall provide the Approach Paper highlighting the compliance of the hardware and software to be supplied along with their designs, features, procedures, timeframes of supply, and so on. The Approach Paper shall have to be approved by the Client prior to commencement of supply by the Bidder.

4.4. Field Maintenance Services of 5 years including SIM cards should be in scope of Bidder

5. The following are the technical specifications:

5.1 General Arrangements of Metering Console

5.1.1 The general arrangement of the Metering Console is in line with the schematic given in Figure below The Metering Console shall consist of energy meters with required CTs, IoT-based DCU, aluminium bus bars of appropriate ampere ratings, device mountings, internal wiring for power, measurements and data communication, requisite terminals and ports, auxiliary equipment, etc.



5.1.2 The Metering Console shall be an SMC Box with facilities to be wall mounted in an agriculture field of the intended consumer. The complete SMC box shall be fixed at the existing point of supply of the consumer. However, if existing service cable and the load side power cable are not of enough length, then DISCOM shall supply the new service wire to the Metering Console.

5.1.3 The Metering Console shall consist of energy meters in sets as defined in this Tender. The Solar Meter (or Generation Meter) and Net Meter (i.e. Billing Meter), shall all be bi-directional meters. The Solar Meter will record generation of energy by solar PV power plant; the Net Meter will record import and export energy to grid. Apart from Solar Meter and Net Meter, The Metering console shall have provision to monitoring Pump Electrical and Energy parameters as per 6.11.

5.1.4 All installations and replacements of meters within the Metering Console shall be as per the standard operating procedures (SOP) defined by State Regulator. The dismantling & wrapping of the existing energy meter of the consumer and inspection of commissioning & testing of new metering console shall be done in presence of DISCOMs engineers.

5.1.5 The SMC box of the Metering Console shall be consist of double doors, inner and outer. The outer door shall be accessible to the consumer for physical meter reading, while the inner door shall be sealed by the DISCOM and shall be opened only in the presence of the DISCOM's representative.

5.1.6 The Metering Console shall have a door sensor to sense whether the inner door is open or closed, and the signal for the same shall be relayed to the cloud server via the IoT device.

5.1.7 Each and every Consumer participating in the Scheme will be provided a Metering Console including new energy meters of respective capacity and type, IoT-based DCU and auxiliary components. The dismantling of the existing energy meter of the consumer shall be in the scope of the DISCOM as per their prevailing practice. The Contractor shall provide the metering set as per the contract load of the consumer.

5.1.8 The Contractor shall also provide installation and commissioning services for metering console i.e. grid connection of the DISCOM supply, interconnection of the PV system, and termination of motor wiring to their existing system as per the instructions the DISCOM's in-charge engineers.

5.1.9 There shall be the MODBUS communication between all the meters with IoT base DCU. Also, refer to clause 4.1 c)

5.1.10 The system should be capable of acquiring Instantaneous, data on programmable interval of 15 minute (push mode) and can pull the data as and when required from meters connected to IoT base DCU by GPRS connectivity. Pre-defined alerts such as low generation, various alerts generated by inverter, etc. should be pushed automatically at the pre-defined remotely configurable interval of 15 minutes. It shall also propose to obtain the instantaneous data with time stamp from each installed meter, through Modbus RTU protocol to IoT base DCU at predefined interval (as of now 15 minutes). The IoT base DCU shall push these acquired data to the Central Client and Cloud servers through GPRS communication. HAREDA will provide state level Solar water pumping system (SWPS) software to integrate multiple remote monitoring system of KUSUM component A, B & C.

5.1.11 The register mapping for instantaneous parameters, Load Survey and Tamper events shall be uniform for all the meter manufacturer. Bidder must provide all the parameters irrespective of the make of the meter only in the standard format to confirm the seamless interoperability in future for the whole system. Interoperability here shall mean, Meter of various make shall be capable to communicate with the IoT based DCU & vice versa.

5.1.12 The scope also contain the confirmation from the bidder for the onsite data acquisition in case of communication failure and unavailability of data on server. The data can be accessed from the IoT base DCU with the help of Ethernet port AND/OR from individual meters with the help of MRI through optical port. The data shall be uploaded to the server immediately through "SINK" option as the device assure the connectivity with the server. No other option for data transfer shall be allowed.

5.1.13 Real-time Monitoring of important parameters of Solar Inverter by RS-485 communication through Modbus protocol to the IoT Base DCU and from DCU to server via GPRS/3G/LTE communication with cloud server.

5.2 Components and Combinations of Metering Sets

5.2.1 Metering Set -1 : Up to 7.5 HP Pumps

Sr. No	Description	Qty
1	Solar Generation Meter, 0.2s class with test report from NABL accredited laboratory, Bi-directional, with RS485 port, compatible to communicate through DLMS/MODBUS protocol, LT 3 Ph 4 Wire, as per Technical Specifications.	1
2	Net Energy Meter, Bi-directional, with RS485 port and compatible to communicate through DLMS/MODBUS protocol, LT 3 Ph 4 Wire, Whole Current 10-60 Amp as per Technical Specifications.(Accuracy Class as per DISCOM)	1
3	IoT-based DCU to communicate with all meters, BLDC pump controller and Inverters through MODBUS protocol and with cloud server through secure communication protocol **(as per 6)**	1
	3.1 Pump Electrical Parameter Monitoring Unit	
	3.2 Electrical Protections	
	3.3 Relays/Contactors for Remote Operations up to 7.5 HP Pump	
4	Three Phase SMPS	1
5	Surge Protection Device for Power Supply	1

Note:

(i) Respective SNA/DISCOM may have multiple such Metering sets of different capacity for On Grid Solar Pumps having more than 7.5 HP ratings.

(ii) In all sets, Bidder should provide Energy Meters, CT, Bus Bar and SMC box as per DISCOM requirements and standards

5.2.2 The register mapping for instantaneous parameters, load survey and tamper events shall be uniform for all the meter makes and models. Contractor shall provide all the parameters irrespective of the make of the meter only in the standard format to confirm the seamless interoperability in future for the entire solution.

5.3 Metering Console (SMC Type): All meters shall be housed in single SMC Box with its other components like IoT base DCU Device, Ring Type CTs, Bus Bar of required ampere capacity, Power and Control wiring etc. The SMC Box shall be wall mounted or shall have facility to install on the agriculture field at the consumer installation. The complete SMC box shall be required to fix at the existing point of supply of the agriculture consumer.

6. Communication Architecture should be as per following:

The near real time Communication within the metering console between all the meters with IoT base DCU and from DCU to the cloud server software for data acquisition and management is very critical for the success of the operation, monitoring and controlling of the whole scheme. The IoT shall collect data from all four meters inside the metering console and from inverter at regular interval of 15 minutes(can be modified in the slab of 1 minute to 1 day if required in future) using RS 485 port and MODBUS protocol. The sufficient internal memory storage shall be required in meter for storing data of load survey of 15 min. interval for at least 45 days and IoT DCU to store the required data in case of communication failure. Following are the specific components of the communication system and its minimum architecture requirement

6.1 IoT-based DCU:

The IoT-based DCU (also referred to as "DCU") shall be capable of on interfacing with the energy meters, solar inverters, peripheral devices/ sensors and other communication devices with respect to the Metering Console as per the specification in this section.

6.2 Communication with energy meters and solar inverters:

(i) The DCU shall communicate with the energy meters and inverters using DLMS/MODBUS protocol over RS485/RS 232. The PV installer shall provide the RS485 cable from the BLDC pump controllers/inverters to the Metering Console.

(ii) The DCU shall log power and energy-related data as well as fault/ tamper signals from the energy meters and solar inverters as well as BLDC pump controllers.

(iii) The DCU shall consist of at least 4 numbers isolated RS485/RS 232 ports to communicate with the meters and pump controllers/inverters. Each meter shall be connected independently to an RS485/RS 232 port. The inverters from the field may be daisy-chained and signal to the

Metering Console may be brought through a single RS485 cable, in which case, the inverters may be connected to the DCU through a single RS485 port.

Bidder may carry out their own field survey to decide the maximum length of communication cable. Also, refer to clause no 6.2(vi) Apart from Isolation, RS485 Communication ports for inverter should have surge protection up to +/- 6kV by internal or external mechanism and submission of type test reports for surge protection as per IEC 61000-4-5 is mandatory and refer to figure shown in clause 5.1.1 to determine no of RS485 ports

(iv) MODBUS communication shall be over a **2-wire as specified under TIA/EIA-485-A**. The DCU shall be able to communicate on a baud rate of 9600, 19200, 38400, 57600 and 115200 bps as per the requirement of the individual connected equipment.

(v) All RS485 communication ports should have minimum **2000 Vrms Isolation** from Input Power Supply, Field IO and Controller

(vi) Apart from Isolation, RS485 Communication ports for inverter should have **surge protection up to +/- 6kV** by internal or external mechanism and submission of type test reports for surge protection as per **IEC 61000-4-5** is mandatory.

6.3 Communication with other Field Interfaces:

(i) The DCU shall provide for additional field interfaces through **8 Dry/Potential Free digital inputs** with optical isolation up to 2000 Vrms for integration with multiple digital sensors (3 Inputs for 3 Phase operation feedback, 1 for Door Sensors, Level Sensor, Moisture Switch etc.)

(ii) The DCU shall be supplied with **4 analog Inputs with 0.1% FSR accuracy** for sensor integration (e.g. Irradiation, Moisture, Level Transmitter, Flow Transmitter). Current scope of work does not include supply of sensors but bidder should provide provision of 4 Analog inputs with 0.1 FSR accuracy

6.4 Remote Operations with Different Operation Modes:

(i) The DCU shall have internal or external arrangements to operate three phase motor. In default configuration it shall be capable of handling **rated currents up to 16 A** (to operate 3 phase pump **load up to 7.5 HP)** , In rush currents up to 80 A, isolation up to 4000 VAC, electrical endurance of at least 100,000 cycles and mechanical endurance of at least 10,000,000 cycles.

(ii) In case of higher pump ratings additional relay / contactors of AC3 category shall be used.

(iii) DCU shall have provision to operate Pump in different modes selected by farmer using mobile application to conserve water level

a. Remote On / Off with configurable “ON hours” : To turn on or off pump remotely using mobile application
b. Local On / Off : To turn on or off pump locally
c. Automatic Operations for water conservation:
    a. Schedule Based Operations of desired duration

b. Moisture Sensor Based Operations for Micro Irrigation method
c. Level Sensor based operations in case of local water storage

(iv) DCU shall have provision to configure Operation Mode Priority remotely

6.5 Communication with Cloud/Central Server:

(i) Communication Medium: Remote communication of DCU with Server shall be established using SIM based GSM/GPRS/2G/3G **cellular connectivity.**

(ii) Communication Protocol: DCU shall communicate with server using **MQTT protocol**

(iii) Communication Format: DCU shall provide data in **JSON message format**. Required JSON message formats shall be provided during engineering to successful bidder.

(iv) Communication Security: Multilayer security shall be implemented for the communication between DCU and Central/Cloud Server

a. Communication between DCU and Server should be **secured and encrypted** using TLS/SSL/X.509 certificate etc.
b. As a part of IoT protocol, **Authentication and Authorization** should be implemented using token/password mechanism
c. **OTP based token and key exchange** mechanism should be established between DCU and Central / Cloud Server where **every 15/30 minutes new token and key** shall be generated against a specific device ID which is required as a part of JSON message.

(v) Communication Modes:

a. Push Data on Event/Notification: such as pump on, pump off, protection operated etc.

b. Push Data Periodically : important parameters of solar pump (as mentioned in tender) should be pushed to central server on configurable interval
c. Pull On demand : If required, central server can fetch data from device on user demand or request
d. Command On Demand : It should be possible to send commands to Remote monitoring system either to control pump operations or to update configuration

(vi) Remote Diagnostics: The DCU shall be capable of supporting remote diagnostics such as **RSSI** (signal strength), **network status, GPRS status, connectivity status** and shall be capable of remotely restarting the GPRS module. The DCU shall also be capable of local RS485 master diagnostics including number of communication failures per port, number of errors per port, meter-level and inverter-level communication error, and so on.

(vii) Over The Air Capabilities: Configuration over the air update shall be provided for important parameters such as IP, APN, Data Logging frequency, Set points for events and protections etc.

(viii) Data Storage and Retrieval: In case of temporary non availability of GPRS network, DCU shall store data locally in SD card / Flash based storage. Once GPRS connectivity is restored, the DCU shall synchronize with cloud / central server and communicate all missing data.

(ix) SMS based connectivity: DCU shall send SMS for important billing and energy parameters which are critical for processing of billing

6.6 Local Communication Connectivity:

(i) Ethernet: Local Ethernet based wired Connectivity shall be provided with built in Web Server and Security for DCU configuration as well as data retrieval. Ethernet connectivity should be compliant to **IEEE 802.3 with 1500 Vrms magnetic isolation**. Communication shall be done using HTTP protocol. Ethernet port shall be used for DCU programming and firmware update as well.

(ii) Wi-Fi: The DCU shall have the capability of being connected locally through its own secure WiFi. Access to this WiFi shall be through a hand-held device such a mobile phone. The Contractor shall provide an appropriate mobile application (the "Mobile App" or "App") to connect with this WiFi in a secure password-protected manner in order to connect to the DCU. Only meter reading shall be allowed over WiFi; the capability of programming the DCU over WiFi shall be disabled.

6.7 Functionality for local meter reading:

(i) It is assumed that the Ethernet connectivity will only be used occasionally at the time of commissioning of the Metering Console, and later whenever there is any replacement of meters, inverters, etc.

(ii) On the other hand, WiFi may be used more often especially in areas with poor mobile data connectivity. In such cases, the DisCom's meter reader will have to physically go to the Metering Console to fetch the meter (and inverter) data.

(iii) Once the DisCom's meter reader (or the DisCom/ Client/ Contractor via the Ethernet port) locally transfers the DCU's data into its mobile device, the Mobile App shall be capable of transferring and synchronizing this data with the cloud server and its database in order to ensure a seamless database.

6.8 Clock of the DCU:

(i) The DCU shall have an internal real-time clock (RTC) with 10-year battery backup.

(ii) The DCU shall collect all data from local equipment (meter, inverter, other inputs/ output, etc.) based on the time of the RTC and NOT as per the timing of the local equipment.

(iii) The DCU shall apply the time-stamp to all communication data as per its own RTC and communicate the same to the cloud server.

(iv) The DCU shall have internal or external arrangements to automatically synchronize RTC with GPS Time Stamp to avoid drift of RTC

(v) In case of drift, The DCU shall synchronize its RTC with reference to the timing of the cloud server automatically

(vi) There shall also be a provision for manually synchronizing the DCU's RTC

6.9 Internal Memory Storage:

(i) The DCU shall have sufficient internal memory (SD Card / Flash based) to store data at 15-minute interval for at least 3 months.

(ii) In addition, the internal memory shall be able to store up to 1,000 events logged via the meters and inverters along with their time stamp.

6.10 Power Supply:

(i) DCU shall be powered up from a 3-phase, 4-wire SMPS having 24 VDC output using any two wire operations.

(a) Input Supply Voltage: 3-Phase, 85-520 VAC

(b) Output Supply Voltage: 12/24 VDC

(c) Output Power: at least 5 W

(ii) DCU Primary Supply Voltage: up to 36 VDC

(iii) Isolation: Up to 1500 Vrms Three Way Isolation

a. Input Supply to Micro Controller Supply Isolation
b. Input Supply to Communication Isolation
c. Microcontroller to Communication Isolation

(iv) Surge Protection Device for Three phase Input Power Supply to be provided separately.

(vi) Separate Earthing for metering console is essential for effective operation of Surge Protection Device.

(vii) To initiate Grid supply failure alert, there shall be battery backed power supply of required capacity.

6.11 Electrical Parameter Monitoring:

(i) DCU shall have internal or external arrangements to measure and monitor various electrical parameters with accuracy class 0.5s or better related to pump such as:

a. Voltage, Current, Power, Frequency

b. Active Energy, Apparent Energy

c. Quadrant wise Reactive energy (Q1, Q2, Q3, Q4)

f. Voltage/Current/Power - Fundamental and % THD values

g. Phase Angle – Voltage to current, phase to phase.

6.12 Electrical Protections:

(i) DCU shall have internal or external arrangements to activate various electrical protections such as:

a. Under Voltage / Over Voltage Protection

b. Voltage Un Balance / Current Un Balance Protection

c. Overload Protection

d. Short Circuit Protection (optional)

(ii) All protections shall have provision to enable/disable protection as well as configure set points and limits remotely

(iii) All protections shall have auto re closure, locking and remote reset mechanism

6.13 Embedded Features:

a. Built in Web Server to configure device using web browser using MODBUS over HTTP. As per tender clause no 6.6 (i) and 6.13 (b) built in web serve is required to configure DCU as well as to retrieve locally stored data
b. Event/Alarm Processing:
   i. To configure and process events against any measured parameter (Load/Power Factor/KVAR)
   ii. In case of Event, Alarm server will push message to remote server with snapshot of all meter parameters in that group.
   iii. Built in Temperature Sensor with alarms and notifications against temperature rise.
c. Electrical System Diagnosis, Status update and Notifications: Grid Supply Availability, Three Phase Supply, Single Phase Supply, Pump Status, Over Load, Short Circuit, Over Voltage, Under Voltage, Voltage Un balance
d. Performance Calculations: Water Discharge calculations based on pump characteristics, %CUF calculations
e. Running Hours: Power On Hours, Three Phase Supply on Hours, Single Phase Supply Hours, Pump Running Hours, Over Voltage Hours, Voltage Unbalance Hours, Over Load Hours, Low PF Hours etc.
f. Remote Inverter Configuration: DCU shall have capabilities of updating inverter set points remotely from server mainly Voltage, Active Power, Reactive Power, Frequency etc.

6.14 EMI/EMC Certifications:

1	Surge Immunity Test (IEC 61000-4-5) : Level 3, +/- 2kV	A
2	Electrical Fast Transient (IEC 61000-4-4) : Level 3, +/- 2 kV	A
3	Electrostatic Discharge (IEC 61000-4-2) : Level 2, 4 kV	A

4	Radiated Electromagnetic Field Test (IEC 61000-4-3) : Level 3, 10 V/m	A
6	Power Frequency Magnetic Field (IEC 61000-4-8) : Level 3, 30 A/m	A
7	Conducted Disturbances induced by radio frequency (IEC 61000-4-6) : Level 3, 10 V	A
8	Voltage Dips, short interruptions(IEC 61000-4-11) : Level 2	A
9	Dry Heat test (IEC 60068-2-2), continuous operations @ 55 deg C	O
10	Damped Heat Test (IEC 60068-2-78), @ 95% RH and 40 deg C	O

Remote monitoring shall be inline with new technical specification of solar water pumping system issued by MNRE in 2019 and it's subsequent amendments.

Besides above parameters, successful bidder(s) shall also make available the following data to DNRE & HAREDA using remote monitoring in 15 minutes time block. Data shall be extracted locally and uploaded to the server in the event of loss of communication. Software associated with remote monitoring should also provide location of SPV pumping system. Controller should have support of sufficient Internal memory/ SD card / memory card to support remote monitoring in case of network failure.

Format for data to be captured by Successful Bidder(s) after COD (all details captured for every 15 minute time block)*

Farmer Name	Farmer Service No.	Feeder and Substation details	Gross generation (kWH)	Energy consumed by pump (kWh)	Water discharge (Lts.)	Pump availability time (minutes)	Pump run time (minutes)	Net injection into grid (kWh)

*In addition to the parameters mentioned above.

Note:- Passing Criteria

A: Temporary degradation or loss of function or performance which is self-recoverable

O: Normal performance within the specified Limits

As described in tender clause no 5.1.1 and CEA guidelines for grid connected solar plant, bidder shall provide standard/routine energy meters having RS232/RS485 communication port. Smart meter is not required as per sepcifications of this tender. To reduce capital and operating cost of multiple data loggers / modems and sim cards, single Remote monitoring system capable of integrating energy meter, inverter and pump controller data using single sim card is proposed.

C. SPECIFICATIONS FOR INVERTER:

As SPV array produce direct current electricity, it is necessary to convert this direct current

into alternating current and adjust the voltage levels to match the grid voltage. Conversion shall be achieved using an electronic Inverter and the associated control and protection devices. All these components of the system are termed the "Inverter". In addition, the inverter shall also house MPPT (Maximum Power Point Tracker), an interface between Solar PV array & the Inverter, to the power conditioning unit/inverter, if necessary. Inverter output should be compatible with the grid frequency. Typical technical features of the inverter shall be as follows:

Specifications of Inverter	
Parameters	Detailed Specifications
Switching devices	IGBT/MOSFET
Capacity	The Rated Capacity of the Inverter shall not be less than the solar PV array capacity subject to variation of 5%.
Control	Microprocessor /DSP
Nominal Voltage	230V / 415V as the case may be
Voltage range	Single Phase: Shall work from 180 Volts to 270 Volts; Three Phase: Shall work from 180 Volts to 270 Volts per phase
Operating frequency/ range	50 Hz (47 to 52 Hz)
Grid Frequency Synchronization range	± 3 Hz or more
Waveform	Sine Wave
Harmonics	AC side total harmonic current distortion < 5%
Ripple	DC voltage ripple content shall not be more than 1%.
Efficiency	1. The inverters should be tested as per IEC standards. The following criteria should be followed : 1. The benchmarking efficiency criteria for the Grid tied (string inverters) inverter • At nominal voltage and full load is >95% • For load >25% is >92% . 2. No load losses should not be more than 5%.
Losses	Maximum losses should be less than 1% of the rated power of the inverter/controller
Casing protection levels	Degree of protection: IP 65 certification
Temperature	Should withstand from -10 to +50 deg Celsius
Humidity	Should withstand up to 95% (relative humidity)
Operation	Completely automatic including wake up, synchronization (phase locking) and shut down
MPPT	Maximum power point tracker shall be integrated in the inverter to maximize energy drawn from the array. MPPT range must be suitable to individual array voltages in power packs

Protections	Mains Under / Over Voltage
	Over current
	Over/Under grid frequency
	Over temperature
	Short circuit
	Lightening
	Surge voltage induced at output due to external source
	Anti Islanding (for grid synch. mode)
System Monitoring Parameters	Inverter voltage & current Mains Voltage, Current & Frequency PV Voltage, Amps & KWH System Mimic & Faults
Recommended LCD Display on Front Panel	Accurate displays on the front panel:
	DC input voltage
	DC current
	AC Voltage (all 3 phases, in case of 3 phase)
	AC current (all 3 phases in case of 3 phase)
	Ambient temperature
	Instantaneous & cumulative output power
	Daily DC energy produced
	Battery Voltage (in case of Hybrid PCU)
Communication interface	RS 485 / RS 232 PCU shall also house MPPT (Maximum Power Point Tracker), an interface between Solar PV array to the power conditioning
Power Factor	> 0.9
THD	<3%
Test Certificates	The inverter should be tested from the MNRE approved test centres / NABL /BIS /IEC accredited/authorised testing-calibration laboratories.

a) The inverter should have a feature to allow only export of power to the grid and the import of power from grid shall not be allowed.

b) Three phase inverter shall be used with each pumping system

c) Inverter shall be capable of complete automatic operation including wake-up, synchronization & shutdown.

d) The output of power factor of inverter is suitable for all voltage ranges or sink of reactive power, inverter should have internal protection arrangement against any sustainable fault in feeder line and against the lightning on feeder.

e) Built-in meter and data logger to monitor plant performance through external computer shall be provided (Providing Computer is not part of DNIT & is in the scope of user).

f) Anti-islanding (Protection against Islanding of grid): The inverter shall have anti islanding protection in conformity to IEEE 1547/UL 1741/ IEC 62116/IS16169 or equivalent BIS standard.

g) Successful Bidders shall be responsible for galvanic isolation of solar water pumping systems plant with electrical grid or LT panel.

h) In Inverter, there shall be a direct current isolation provided at the output by means of a suitable isolating transformer.

i) The inverter generated harmonics, flicker, DC injection limits, Voltage Range, Frequency Range and Anti-Islanding measures at the point of connection to the utility services should follow the latest CEA (Technical Standards for Connectivity Distribution Generation Resources) Guidelines.

j) The inverter should comply with applicable IEC/ equivalent BIS standard for efficiency measurements and environmental tests as per standard codes IS/IEC 61683 and IEC 60068-2 (1,2,14,30)/ Equivalent BIS Std./EN50530,IEC 61727 (all clauses except clause 5.2.2). in case of clause 5.2.2, it should withstand the over/under frequency in the range 47 to 52 Hz.

k) The MPPT units environmental testing should qualify IEC 60068-2 (1, 2, 14, 30)/ Equivalent BIS std. The junction boxes/ enclosures should be IP 65 (for outdoor)/ IP 54 (indoor) and as per IEC 529 specifications.

l) Controller with MPPT and Grid tied Inverter could be either a single unit or combination of controller and Grid Tied Inverter.

1. INTEGRATION OF PV POWER WITH GRID:

(i) The output power from SPV would be fed to the inverters which converts DC produced by SPV array to AC and feeds it into the main electricity grid after synchronization. In case of grid failure, or low or high voltage, solar PV system shall be out of synchronization and shall be disconnected from the grid. 4 pole isolation of inverter output with respect to the grid connection need to be provided.

(ii) The solar generation meter along with CT/PT (if required) with Surge Protection Device (SPD) should be of 0.2S accuracy class is in the scope of bidder. For LT connection the accuracy shall be as per requirement of DISCOMs.

(iii) CEA guideline 2013 for interconnecting solar power with Grid shall be followed.

(iv) Certification of Islanding protection in the inverter from the manufacturer of the equipment shall be mandatory. This shall be arranged by the supplier from the manufacturer.

(v) Technical Standards for Interconnection:

S. No.	Parameters	Requirements	Reference
1.	Overall Conditions of Service	Reference to regulations	Conditions for Supply of Electricity of Distribution Licensees
2.	Overall Grid Standards	Reference to regulations	Central Electricity Authority (Grid Standards) Regulations 2010
3.	Equipment	Applicable industry standards	IS/IEC standards
4.	Safety and Supply	Reference to regulations, Chapter III (General Safety Requirements)	Central Electricity Authority (Measures of Safety and Electricity Supply) Regulations, 2010 and subsequent amendments
5.	Meters	Reference to regulations and additional conditions issued by the Commission.	Central Electricity Authority (Installation & Operation of Meters) regulations 2006 and subsequent amendments
6.	Harmonic Current	Harmonic current injections from a generating station shall not exceed the limits specified in IEEE 519	IEEE 519 relevant CEA (Technical Standards for Connectivity of the distributed generation resource) regulations 2013 and subsequent amendments
7.	Synchronization	Photovoltaic system must be equipped with a grid frequency synchronization device, if the system is using synchronizer inherently built into the inverter than no	Relevant CEA (Technical Standards for Connectivity of the distributed generation resources) regulations 2013 and

		separate synchronizer is required.	subsequent amendments.
8.	Voltage	The voltage-operating window should minimize nuisance tripping and should be under operating range of 80% to 110% of the nominal connected voltage. beyond a clearing time of 2 seconds, the Photovoltaic system must isolate itself from the grid.	
9.	Flicker	Operation of Photovoltaic system shouldn't cause voltage flicker in excess of the limits stated in IEC 61000 or other equivalent Indian standards, if any	Relevant CEA regulations 2013 and subsequent if any, (Technical Standards for Connectivity of the distributed generation resource)
10.	Frequency	When the Distribution system frequency deviates outside the specified conditions (52 Hz on upper side and 47 Hz on lower side up to 0.2 sec), the Photovoltaic system shouldn't energize the grid and should shift to island mode.	
11.	DC Injection	Photovoltaic system should not inject DC power more than 0.5% of full rated output at the interconnection point. or 1% of rated inverter output current into distribution system under any operating conditions	
12.	Power Factor	While the output of the inverter is greater than 50%, a lagging power factor of greater than 0.9 shall be maintained	
13.	Islanding and Disconnection	The Photovoltaic system in the event of voltage or frequency variations must island/ disconnect itself	

		within IEC standard on stipulated period	
14.	Overload and Overheat	The inverter should have the facility to automatically switch off in case of overload or overheating and should restart when normal conditions are restored	
15	Cable	For interconnecting Modules, Connecting modules and junction Boxes and junction boxes to inverter, DC copper cable of proper sizes shall be used. To connect inverter with AC panel aluminium cable of proper size shall be used. All the internal cables to be used in the systems shall be included in the cost while 100 mtr. AC aluminium cable of proper size to be used to connect inverter/PCU to AC panel shall be included in the cost of the system.	Relevant CEA regulations 2013 and subsequent if any, (Technical Standards for Connectivity of the distributed generation resource)

a) All switches and the circuit breakers, connectors should conform to IEC 60947, part I, II and III/ IS60947 part I, II and III.

b) The change-over switches, cabling work should be undertaken by the bidder as part of the project.

2. JUNCTION BOXES FOR CABLES FROM SOLAR ARRAY:

The junction boxes shall be made up of FRP/PP/ABS with dust, water and vermin proof. It should be provided with proper locking arrangements.

Series / Array Junction Box (SJB/AJB) (whichever is required): All the arrays of the modules shall be connected to DCCB. AJB shall have terminals of bus-bar arrangement of appropriate size Junction boxes shall have suitable cable entry with suitable glanding arrangement for both input and output cables. Suitable markings on the bus bars shall have to be provided to identify the bus bars etc. Suitable ferrules shall also have to be provided to identify interconnections. Every AJB should have suitable arrangement Reverse Blocking diode of suitable rating. Suitable SPD, suitable Isolation switches to

isolate the DC input to Inverter has to be installed in AJB for protection purpose. Thus AJB should have DC isolator for disconnecting the arrays from inverter input. If in any case diodes, HRC Fuses, SPDs and isolators are installed in the string inverters, then there is need to install these again in AJB. If some of these safety gadgets are not installed in String Inverter it should be installed in AJB. Cable interconnection arrangement shall be within conduit pipe on saddles installed properly. Cable connection should be done in such a manner that fault findings if any, can be identified easily. The cables should be connected in such a manner that clamp meter can be comfortably inserted around the individual cables to measure the data like current, voltage etc. AJB should also be marked as A1, A2, & so on. Wherever conduits are laid on wall/roof or ground, then it should be suitably laid in cable tray or appropriate civil structure which should be at least four inches above roof/ground level.

3. PROTECTION & SAFETY:

Both AC & DC lines have suitable MCB/MCCB, Contactors, SPD, HRC Fuse etc to allow safe start up and shut down before & after string inverter installed in the system. String inverters should have protections for overload, surge current, high Temperature, over/ under voltage and over/ under frequency & reverse polarity. The complete operation process & safety instructions should printed on the sticker & suitably pasted on the near inverters.

Inverter should have safety measures to protect inverter from reverse short circuit current due to lightening or line faults of distribution network.

Inverter should be suitably placed in covered area on a suitable platform or concrete platform (on rubber mat) with complete safety measure as per norms.

4. INVERTER/ARRAY SIZE RATIO:

- The combined wattage of all inverters should not be less than rated capacity of power plant under STC in KW subject to variation of -5%..
- Maximum power point tracker shall be integrated in the inverter to maximize energy drawn from the array

5. AC COMBINER BOX BOARD (ACCB):

This shall consist of box of at least cum grid interphase panel or good quality FRP/ suitable powder coated metal casing. One Electronic Energy Meter (0.2S Class), ISI make, Three Phase duly tested by DISCOMs (Meter testing Division) with appropriate CT (if required), of good quality shall have to be installed in ACCB suitable placed to measure the power daily generated from SPV Power Plant, as per HERC Net Metering Regulations. Proper rating MCCB & HRC fuse and AC SPDs shall be installed to protect feeders from the short circuit current and surges as per the requirement of the site. Operation AC Isolator Switch of Grid Connectivity should be such that it can be switched ON or OFF without opening the ACCB.

6. CABLES/WIRE:

All cables should be of copper as per IS and should be of 650V/1.1 KV 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 loses, 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. For normal configuration the minimum suggested sizes of cables are:

Module to module/SJB/AJB	: 4 sq mm (single core) DC Cable.
AJBs to MJBs/DCDB	• Up to capacity of 10 kWp Solar Plant, minimum 6 sq mm (Single/Double core) DC Cable, with respect to current ratings of designing. • For capacity more than 10 kWp & up to 20 kWp Solar Plant, minimum 10 sq. mm (Single/Double core) DC Cable, with respect to current ratings of designing.
MJBs to DCCB	• Up to capacity of 10 kWp Solar Plant, minimum 10 sq mm (single core) DC Cable, with respect to current ratings of designing. • For capacity more than 10 kWp & upto 20 kWp Solar Plant, minimum 16 sq mm (single core) DC Cable, with respect to current ratings of designing.
DCCB to Inverter	• Up to capacity of 10 kWp Solar Plant, minimum 10 sq mm (single core) DC Cable, with respect to current ratings of designing. • For capacity more than 10 kWp & upto 20 kWp Solar Plant, minimum 16 sq mm (single core) DC Cable, with respect to current ratings of designing.
Inverter to ACCB	AC Cable as per design & rating.

The size & rating of the cables may vary depending on the design & capacity of the Solar water pumping system.

7. CABLE TRAY:

All the cables should be laid in appropriate cable tray as per the requirement of the site, No cable should be laid directly on ground or wall cable tray should be laid such that there is gap of at least four inches above ground/roof/wall.

8. DISPLAY Plate (Could be installed anywhere on the site):

The bidder has to display plate (2X2 ft.) at the project site mentioning the following:

- Capacity of solar water pumping system
- Month and year of installation
- Project Cost
- Consumer care number of the firm

- DANGER BOARDS: Danger boards should be provided as and where necessary as per IE Act. /IE rules as amended up to date.

9. PROTECTIONS

The system should be provided with all necessary protections like earthing, Lightning, and grid anti- islanding as follows:

(ii) Lightning And Over Voltage Protection:

The SPV Power Plant shall be provided with conventional type lightening arrester and over voltage protection. The principal aim in this protection is to reduce the over voltage to a tolerable value before it reaches the PV or other sub-systems components. The source of over voltage can be lightening or any other atmospheric disturbance. The Lighting Arrestor (LA) is to be made of 1¼" diameter (minimum) and 12 feet long GI spike on the basis of the necessary meteorological data of the location of the projects. Necessary foundation for holding the LA is to be arranged keeping in view the wind speed of the site and flexibility in maintenance in future. Each LA shall have to be earthed through suitable size earth bus with earth pits. The earthing pit shall have to be made as per IS 3043. LA shall be installed to protect the array field, all machines and control panels installed in the control rooms. Number of LA shall vary with the capacity of SPV Power Plant & location. Number of LA should be in such a manner that total layout of solar modules should the effective coverage of LA's.

(iii) Earthing Protection:

Each array structure of the PV yard shall be grounded properly. In each array every module should be connected to each other with copper wires, lug teethed washers addition the lightening arrestor/masts shall also be provided inside the array field. Provision shall be kept for shorting and grounding of the PV array at the time of maintenance work. All metal casing/shielding of the plant shall be thoroughly grounded in accordance with Indian Electricity Act/IE rules as amended up to date. The earthing pit shall be made as per IS: 3043. All the array structures, equipments & control systems shall be compulsorily connected to the earth. Number of earthling shall vary with the capacity of SPV Power Plant & location. G.I. /Copper strips should be used for earthling instead of G.I. wires. LA should be installed to protect the array field & machines installed in the control rooms. Number of LA shall vary with the capacity of SPV Power Plant & location. Earth resistance shall not be more than 5 ohms. It shall be ensured that all the earthing points are bonded together to make them at the same potential.

(iv) Surge Protection:

Internal surge protection shall consist of three MOV type surge-arrestors connected from +ve and –ve terminals to earth (via Y arrangement)

(v) Grid Islanding:

a) In the event of a power failure on the electric grid, it is required that any independent power-producing inverters attached to the grid turn off in a short

period of time. This prevents the DC-to-AC inverters from continuing to feed power into small sections of the grid, known as “islands.”

Powered islands present a risk to workers who may expect the area to be unpowered, and they may also damage grid-tied equipment. The Rooftop PV system shall be equipped with islanding protection. In addition to disconnection from the grid (due to islanding protection) disconnection due to under and over voltage conditions shall also be provided.

b) A manual disconnect pole isolation switch beside automatic disconnection to grid would have to be provided at utility end to isolate the grid connection by the utility personnel to carry out any maintenance. This switch shall be locked, if required, by the utility personnel

10. CONNECTIVITY:

The maximum capacity for interconnection with the grid at 415V-three phase as per site requirement.

11. NET METERS:

The provision to provide net meters shall be in the scope of the bidders. The Department shall provide all assistance in installation of these meters and grid connection to the bidders.

12. DRAWINGS & USER MANUALS:

Two sets of Engineering, electrical drawings and Installation and O&M manuals are to be supplied. Bidders shall provide complete technical data sheets for each equipment giving details of the specifications along with make/makes to the user along with basic design of the power plant and power evacuation, synchronization along with protection equipment.

13. SAFETY MEASURES:

The bidder shall take entire responsibility for electrical safety of the installation(s) including connectivity with the grid and follow all the safety rules & regulations applicable as per Electricity Act, 2003 and CEA guidelines etc. All work shall be carried out in accordance with the latest edition of the Indian Electricity Act and rules formed there under and as amended from time to time.

14. CODES AND STANDARDS

The Power Conditioners/Inverters of the SPV power plants conform to the latest edition of MNRE/ BIS /IEC Standards and specifications/requirments as specified below:

Table	**Head**
Efficiency Measurements	IEC 61683
Environmental Testing	IEC 60068-2
Electromagnetic Compatibility (EMC)	IEC 61000 series-relevant parts
Electrical Safety	IEC 62109-1&2

Protection against Islanding of Grid	IEC 62116 / IS61619

Any left out specification, requirements, codes and standards shall be as per the latest specification, requirements of the MNRE/BIS/IEC standards. Accordingly, all the bidders are advised to go through the specifications of stand-alone solar water pumping system, inverters and other equipments issued by the MNRE/BIS/IEC/CEA etc. from time to time.

Information in support of meeting essential eligibility conditions regarding average annual turnover of the bidder in last three financial year ending on 31st March, 2019

Name of Bidder:

Annual turnover data for last three years ending on 31st March 2019		
S.No.	Year	Turnover (Rs. in Lacs)
1.	2016-17	
2.	2017-18	
3.	2018-19	
4.	Sub-Total (1+2+3)	
Average turnover in last three years ending on 31st March 2019		

Signature with seal of bidder

Signature with seal of Chartered Accountant

Name:
Membership No.
Contact No.

Note:

1. Bidder must furnish the information in this form.
2. *The information provided shall be certified by Chartered Accountant.*

INFORMATION IN SUPPORT OF ELIGIBILITY CRITERIA FOR EXPERIENCE – SOLAR SYSTEMS/ PROJECTS COMMISSIONED IN LAST THREE YEARS ENDING ON 31ST MARCH 2019

Name of Bidder:

S. No	Name of Customer	Work order no. &date	Name of system & no. of systems ordered	Work order value (Rs in Lakhs)	Value of Work Done	No. of systems commissioned & month/year of commissioning	Copy of Work Completion Certificate along with satisfactory report of the customer (to be uploaded online)

Signature with seal of bidder

Note:

Bidder must upload copies of work order, work completion report and satisfactory performance. Work orders may be got verified, if required.

DECLARATION OF MATERIAL PROPOSED FOR SUPPLY UNDER THIS BID BY THE TENDERER (STRICTLY AS PER TEST REPORT)

Name of Bidder:

Detail of major components proposed to deploy in the system

S.No.	Name of major component of the Grid Connected Solar Water Pumping Systems	Manufacturing (Own/ tie Up)#	Make (name of manufacturer with address)	Tested from { Enclose the test certificate}
1.				
2.				
3.				
4.				
5.				

In case tie-up, also submit tie-up certificate in the format of DNIT.

Signature of Bidder
With seal

TIE UP CERTIFICATE

(From manufacturer on his letter pad)

We undertake to supply …… (name of component) confirming to the specifications as per tender no. ……. to M/s …….. (name of bidder) for New and Renewable Energy Department, Haryana requirement as and when ordered by the bidder.

Authorized Signatory

(with seal)

Name: ……

Designation: …….

BRIEF DETAILS OF THE BIDDER

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

S. No.	Particulars required:	Details
1.	Name of Bidder firm	
2.	Postal Address	
3.	Telephone, Telex, Fax No	
3.	E-mail	
4.	Web site	
5.	Name &designation of the authorized signatory to whom reference shall be made	
6.	Registration Number	
7.	Date of Registration	
8.	Name and address of registering authority	
9.	Registered Address with Tel. Number	
10.	Address of Manufacturing unit with Tel. Number :	
11.	Present activities/business of the firm i. Pump Manufacturer ii. Modules Manufacturer	
12.	Bidder applied as Manufacturer of Solar PV Module OR solar water pump	
13.	Name of major components (s) to be deployed in the offered system being manufactured at their own:	
14.	Name of major components (s) being Outsourced (to be tied up)	
15.	Name of Directors of Company (at least Two directors with email IDs & contact Numbers)	(1) (2)
16.	State of Billing	
17.	Year from which firm is in the business of Renewable Energy Technology	
18.	Type of firm (Private Ltd. Company/ Public Ltd. Company/ Partnership/ Proprietorship/ LLP)	
19.	Category of firm (Micro/ Small/ Medium)	
20.	GST Number	
21.	Banker Details of the Bidder for RTGS / Direct Transfer of payments, if any 1- Name of firm 2- Bank Account Number 3- IFSC Code 4- Name of Bank 5- Bank address	
22.	Name of the any close/near relative of the shareholders of the bidding firm working in New & Renewable Energy Department, Haryana or HAREDA	Name Designation Place of Posting Relationship

23.	Whether, the bidder has applied as Haryana based any one of the following : (i) Manufacturing Small Enterprises (including Khadi & Village Industries) (ii) Manufacturing Micro Enterprises (including Khadi & Village Industries) (iii) Manufacturing Medium Enterprises (including Khadi & Village Industries) Please specify	
24.	Any other information	

(Signature of Bidder)
With Seal

FINANCIAL BID-PERFORMA

(TO BE SUBMITTED ONLINE ONLY)

Note:- THE PRICE SHOULD BE FILLED IN THE SEPARATE BOQ (PRICE BID) FILE AND TO BE UPLOADED ON THE WEB PORTAL

Bidder shall quote rates / costs (excluding GST) in the format given below for design, supply, installation and commissioning of 3/5/7.5/10/12.5/15 HP Grid Connected Solar Water Pumping System as per guidelines and specifications/standards specified in the DNIT complete with all accessories, auxiliaries and components F.O.R. site including installation &, commissioning (I&C), insurance and 5 Years warranty and with 25 Years warranty for the PV modules for output wattage which should not be less than 90% at the end of 10 Years and 80% at the end of 25 years.

Type of pump	Cost of pump material	GST on pump material	Cost of services, installation and commissioning etc.	GST on services, installation and commissioning etc.	Any other tax, levies, freight etc.	Total cost of pump	Buy back cost of old pump	GST	Service charges, if any	Total cost of old pump	Final cost of new pump after buy back of old pump
	1	2	3	4	5	6=1+2+3+4+5	7	8	9	10=7+8+9	11=6-10
3 HP (DC, Submersible)											
5 HP (DC, Submersible)											
7.5 HP (DC, Submersible)											
10 HP (DC, Submersible)											
12.5 HP (DC, Submersible)											
15 HP (DC, Submersible)											

Signature of the Bidder/

Authorised Signatory.

Note:

1. It is clarified to the bidders that for evaluation/ negotiation purposes, the total cost for each pump size plus duties per system minus BUY BACK PRICE of existing pump would only be considered.
2. If a bidder does not want to quote for a particular capacity pump(s), then ZERO (0) price may be quoted and accordingly, it would be considered that the firm has not offered the bid for the said capacity pump.

Annexure-IA

Technical Bid format/ Index for the Technical Bid documents

Sr. No.	Name of Document	Status of Submission (Yes/No)	Page Number as per numbering given to the technical bid documents uploaded on the portal
1	Submission of online payments i.e Earnest Money Deposit, Tender Document Fee & e - Service Fee and scanned copies of supporting documents.	Yes/ No	
2	Submit a signed copy of DNIT	Yes/ No	
3	The Bidder should be either a body incorporated in India under the Companies Act, 1956 or 2013 including any amendment thereto or proprietary/ partnership/LLP firm. A copy of certificate of incorporation shall be furnished along with the bid in support of above.	Yes/ No	
4	Bidder should be a registered manufacturer of Solar PV Module OR solar water pump Bidder shall submit proof for the same. Submit documentary proof.	Yes/ No	
5	Submit declaration regarding list of imported components used in manufacturing of equipment used in the solarisation system.	Yes/ No	
6	Affidavit on Non judicial stamp Paper duly certified by the notary stating that the bidder has not been blacklisted/debarred by any Govt. or procuring entity	Yes/ No	
7	All the documents submitted by the bidder as part of its Technical bid are attested by the signing authority of the bidder	Yes/ No	
8	Submit an undertaking by the bidding firm in reference to acceptance of all the terms & conditions of the Schedule-A/ DNIT	Yes/ No	
9	The manufacturing firm should have a valid ISO: 9001:2015 Certificate in the field of quoted items and copy of valid ISO: 9001 certificate must be attached with offer.	Yes/ No	

10	Bidder should submit its performance report and proof/certificates of supplying items in the field of quoted items in Govt. /Semi-Govt. Organization, Institutes for last two years.	Yes/ No	
11	Bidder should provide an undertaking that after the expiry of warranty period, they will provide necessary spare and services for the maintenance of items up to the period of additional five year	Yes/ No	
12	Bidder is required to submit the test report of the quoted item issued by any of the MNRE/BIS/NABL accredited laboratory on or after 17th July, 2019.	Yes/ No	
13	**In case of manufacturer:** - Bidder should be manufacturer of any of the major components (Module/Pump) to be used in the quoted item and bidder will submit tie-up certificate for remaining major component/s from the Original manufacturer of the component. Also furnish detail of major components to be deployed in format attached with DNIT	Yes/ No	
14	Technical Catalogue of the product is required to be provided along with the material to the end user & same should be available on bidder's website.	Yes/ No	
15	The bidder should have minimum average annual turnover 30% of the total estimated value in the last three years, ending 31st March of the previous Financial Year i.e. upto 2018-19. The turnover should be self-attested and CA Certificate. Furnish in format attached with DNIT.	Yes/ No	
16	Experience and Past Performance of having successfully completed, similar purchase/contracts costing not less than the amount equal to 40% of the estimated value of the indent, during last three years ending 31st March of the previous Financial year (2018-19), to Govt. / Semi Govt. Organizations.	Yes/ No	

	Furnish in format attached with DNIT.		
17	Acceptance of warranty clause as per NIT	Yes/ No	
18	Acceptance of Delivery period as per NIT	Yes/ No	
19	Acceptance of payment terms as per NIT	Yes/ No	
20	Brief detail of bidders in the format attached with DNIT	Yes/ No	