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

Sr. No.	PARTICULARS	REMARKS
1	Tender Notice No.	49/ 2023-2024
2	Sr. No. of Tender.	vi) (Group-II)
3	Superscribed No. of Tender.	91/HR/RC/E-5/2023-24
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 10.01.2024 Upto 02:00 P.M.
6	On line Bid Preparation & submission.	Upto 12.01.2024 at 02:00 P.M.
7	Date & time of opening of Technical Bids/s.	On or after 12.01.2024 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) dated20-10-2016 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) dated20-10-2016 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) 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	Rates to be kept valid for acceptance upto:	31.06.2024

A. Information to Bidders:

i. 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 10.01.2024 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 in folder of "Tender Forms" available on following link**https://dsndharyana.gov.in/downloads/**and for information about DSC at NIC Portal visithttps://etenders.hry.nic.in/nicgep/app?page=DSCInfo&service=page
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-2 above. In this regard please refer to "Instructions to bidder on Electronic Tendering System" available at the available in folder of "Tender Forms" on website :**https://dsndharyana.gov.in/downloads/**
8. Intending bidders will be mandatorily required to sign-up online (create user account) on the websitehttps://etenders.hry.nic.into 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 fundsatleastT+1 working day(Transaction+ One Day)in advance i.e. on or before 10.01.2024 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/ Scope of Work and Terms & Conditions of the Contract:

Sr. No.	Description of Stores	Quantity/ Value of Rate Contract	Place of Delivery
1	Supply, installation and commissioning of Grid Connected Rooftop Solar Power Plants without battery bank (with Net Metering Facility) including comprehensive maintenance for a period of 07 years, including supply of solar generation & bi-directional meter.	On Annual Rate Contract basis The approximate investment by bidders for 8.4 MW aggregated capacity is Rs. 3195 Lacs.	Anywhere in Haryana

The detail technical specifications/description of the above stores are available at Annexure-I of this documents.

C. DETAILS OF WORKS:

Annual Rate Contract for tentative aggregate capacity of 8.4 MWp of Grid Connected Rooftop (GCRT) SPV Power Plants without battery bank for design, Supply, Erection, Testing & Commissioning including comprehensive maintenance for a period of 07 years at various places in State of Haryana, including supply of Solar Generation & Bi-Directional Meters.

Following are the tentative rates and quantity (which may be interchanged as per requirement) of the proposed tender:

Sr. No.	Description of work/ items	Quantity, nos.	Total Quantity, KW
1	01 kW -10 kW	150	600
2	11 kW -50 kW	110	2600
3	51 kW -100 kW	10	700
4	101 kW -500 kW	20	4500
	Total	290	8400

D. **THE SCOPE OF WORK SHALL ALSO INCLUDE THE FOLLOWINGS:**

a. The bidder can bid for complete capacity. Bids for partial capacity of a single group will not be accepted.

b. Detailed planning of time bound smooth execution of Project;

c. The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the Goods' final destination and the absence of heavy handling facilities at all points in transit.

d. Supplier shall be responsible for delivering all the equipment at site under his own arrangement within the stipulated time frame.

e. The goods supplied under the contract shall be fully insured against loss or damage incidental to manufacture of acquisition, transportation and delivery to site by the supplier at his own cost. Once the material has been supplied at the user site, the storage facility (with lock & key arrangement for the supplier) may be provided by user department/organisation for 15 days only, as it is assumed that within 15 day the systems will be installed.

f. Performance testing of the complete Project;

g. After sales service through service center(s);

h. Coverage of risk liability of all personnel associated with implementation and realization of the Project;

i. Training of at least one person each to be nominated by user at every location, on the various aspects of design and maintenance of the Project after Commissioning of the Project.

j. The Successful Bidder shall maintain sufficient inventory of the spare parts to ensure that the Project is functional during the period of warranty period.

k. The Successful Bidder shall run the Project on trial basis and shall closely monitor the performance of the Project before handing over the same..

l. Comprehensive maintenance of the Project at every location, from the date of the Commissioning of Project has to be carried out by the Successful Bidder.

m. Supervision of the on-site assembly and/or start-up of the supplied Goods.

n. Furnishing of detailed operations and maintenance manual for each appropriate unit of supplied Goods;

o. Performance or supervision or maintenance and/or repair of the supplied Goods, for a period of time agreed by the parties, provided that this service shall not relieve the Supplier of any warranty obligations under this Contract;

p. 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.

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

E. SPECIFIC TERMS & CONDITION/ ELIGIBILITY CRITERIA RELATED TO ABOVE STORE:

1. Technical Eligibility Criteria:

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

ii. The bidder should have also a valid ISO 9001:2015 Certificate issued from any NABCB accredited certification body in the field of quoted item and copy of valid ISO 9001:2015 Certificate must be attached with offer.

iii. The bidder should be a manufacturer of solar modules/solar cells or System Integrator. The System Integrator has to submit the undertaking (in Performa-VIII) issued by each manufacturer of major parts/devices (solar modules/inverter) with whom they have tie up mentioning that in case System Integrator defaults, at any stage of execution of warrantee/guarantee/CMC and after sale service of the said device, installed in reference to rate contract of the said tender, then the Company will be responsible to execute the warrantee/guarantee/CMC of the said device at site of installation as per the terms and conditions of rate contract/DNIT of the above tender and will adhere the directions of the New & Renewable Energy Department/HAREDA directly.

iv. Domestically manufactured PV Module with domestically manufactured solar PV cells should be used. The PV modules should be made up of crystalline silicon solar cells and must have BIS certificate for IS 14286 & IS 61730 (Part-I, Part II). PV modules must meet the latest specifications of MNRE and the models and Manufacturers of PV Modules shall be included in the List of Models and Manufacturers for Solar PV Modules empenelled by MNRE as per its ALMM order (and shall also be valid at the time of supply of material) issued from time to time, while the inverters/PCU/micro inverters should be tested from the MNRE approved test centres/ NABL/ BIS/ IEC accredited/authorised testing- calibration laboratories. In case of imported inverter/micro inverter/power conditioning units, these should be approved by international test houses. However, if there are any instructions of MNRE regarding of the approval of inverter/micro inverter/Power Conditioning Unit, then the inverter/ micro inverter /PCU shall be as per latest specification as per instructions/guidelines of MNRE applicable at the time of submission of bid and also at the time of supply.

v. To bring contractual clarity, Bidders has to give explicit declaration that they are aware of binding provisions of the ALMM Order and the List(s) thereunder, while quoting the rates in the bid.

1. *The bidder has to submit the test reports of Solar PV Modules/Inverters/PCU/ Micro inverters with the tender.*

2. *If the Manufacturers of PV Modules has applied to MNRE for including their models and name in the List of Models and Manufacturers for Solar PV Modules empanelled by MNRE in its ALMM order, then the bidder has*

to submit the acknowledgement for application for the same. In such cases if the name is not included in the said list as on the date of invoicing and supply to the beneficiary, then the supplies of the bidders will be treated as rejected and considering them technically non-eligible there rate contract shall be cancelled (it is the responsibility of the bidder to submit the proof of inclusion of their models and name in the said list at the time of invoicing and supply)

3. *If manufacturer claims the MSME of Haryana, then the test report of solar module/ solar cell, as the case may be, in the name of bidder shall be provided with the bid. The manufacturer of solar module/ solar cell, shall be eligible for MSME benefit.*

4. *If system integrator is manufacturer of any of the major part/device (solar modules/inverter) then it is not required to submit the undertaking (in Performa-VIII) related to that particular item/device.*

vi. All the Test Certificate(s)/BIS/IEC certification should be valid on the closing date of the tender and also at the time of supply.

2. Experience and Past Performance

Bidder should have successfully completed Supply, Installation & Commissioning of Grid Connected Rooftop Solar Power Plants of minimum 3.36 MW (cumulative capacity) to any State / Centre Govt. Agency / Department/ Organization/ autonomous body/ private sector duly verified by SNA/any govt. agency from 01.04.2019 to the closing date of the bid.

The bidders are requested to enclose the proof of completion of the required capacity projects duly certified by SNA/any Government agency.

Similar & relevant works/rate contract means: Supply, Installation & Commissioning of Grid Connected Rooftop Solar Power Plants or Ground Mounted Solar Power Plants.

(Document to be uploaded: Only Commissioning Certificates certified by SNA or any Government agency supporting the claim. Bidders shall not upload the work orders)

3. Financial Eligibility Criteria:

i. The bidder should have minimum average annual turnover of Rs. 10.08 crores in the last three years, ending 31st March 2023.

*(Document to be uploaded: The annual Turnover Certificate in given format **(Performa-I)** duly certified by CA).*

ii. The bidder should have positive net worth in the last three Financial Years.

*(Document to be uploaded: Certificate in given format **(Performa-VII)** certified by CA.)*

iii. The rates quoted should be inclusive of GST (@13.8%) and all other charges etc. (as applicable).

4. Delivery period (includes supply, installation & commissioning)/Time Schedule, Penalty/Liquidated Damages:

a. The time schedule for these systems shall be as under:

Capacity of Solar PowerPlant	Time period for completing the work which includes inspection, supply, installation and commissioning	Date for the pre dispatch/at site inspection of material to be offered by the supplier
1	2	3

1kWp -100 kWp	3 months from the date of work order	Atleast 07 days prior to last date of supply of the system
101-500 kW	4 months from the date of work order	Atleast 07 days prior to last date of supply of the system

i. Although the supplier shall give the date of inspection in the inspection offer which should reach in the office of indenting Department at least 07 days before the date of inspection proposed by the supplier. It shall be the sole responsibility of the supplier to complete the commissioning of systems in the defined time period. Time period is the essence of the contract. GCRT Solar Power plant will be taken as commissioned on the date of start of inverter and ready to synchronize, it will not depend the installation of solar generation meter/Bi-Directional meter by DISCOMs. However, solar generation meter (with CT, if required)/bi-directional meter along with CT/PT shall be submitted to the DISCOMs for testing and installation within 07 days of commissioning of the system by the supplier.

ii. After receipt of call for inspection with date for the inspection, the material shall be inspected by the Director, New & Renewable Energy Department/ HAREDA/indenting officer or a committee authorized for this purpose. Material shall be dispatched after acceptance of the same by the Inspection Committee, if inspected at premises of the firm; The same shall be installed and commissioned after acceptance by the Inspection Committee, if inspected at site. However, the supplier may start civil work at any time even before the inspection of material.

iii. If the proposal for pre-dispatch inspection is received within defined & valid time period in the office of Director, New & Renewable Energy Department/HAREDA/indenting office from the supplier and inspection is not carried out by the New & Renewable Energy Department due to any reasons within 07 days of receipt of such letter/offered date, the time period for supply, installation & commissioning will be extended equivalent to delayed period, from the next day of expiry of these 07 days till the date of actual inspection and no penalty will be imposed for this extended period.

b. Before placing the work order it will have to ensure that site is clear and feasible in all respect for installation of system/ plant. However, it will be the sole responsibility of the supplier to be satisfied with the site through visit under intimation to PO/APO of the district within 30 days of placing of work order. Request, if any, received from the supplier for any extension on ground of issue of site clearance after above said period will be out rightly rejected

5. Warranty: -

i. The Warranty period shall be seven (07) years for complete system from the date of commissioning and handing over of the system (or as per latest MNRE, GoI guidelines).The contractor shall rectify defects developed in the system within Warranty period promptly.

ii. The manufacturer should warrant the Solar Module(s) to be free from the defects and/or failures for a period of twenty five (25) years from the date of commissioning of the system

iii. The predicted electrical degradation of power generated not exceeding 20% of the minimum rated power over the 25 year period and not more than 10% after ten years period of the full rated original output.

The procedure to rectify the complaint/service to be provided during warrantee period is as follows:

During the warrantee period, the firm shall ensure proper functioning of the systems and complaint, if any, forwarded to the supplier against the system, will have to be attended within 72 hours of forwarding such complaints. If any part is to be procured then the user is to be informed and the systems shall be rectified within 7 days. The procedure to rectify the complaints shall be as under:

a. The notice through E-mail/hard copy to rectify the complaints shall be issued by the HQ/district officer/User to the supplier with copy to the New & Renewable Energy Department/HAREDA. This shall be followed by two reminders on 3 days intervals each. The district office shall maintain proper record of the complaints.

b. 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 07 days shall be imposed. If the firm does not attend the complaint within the maximum 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 and a legal proceedings may be initiated against the firm for breach the agreement. If maximum penalty has been imposed, then the firm shall deemed to be considered as unfit to participate in all the tenders floated by New & Renewable Energy Department/HAREDA in future for a period to be decided by competent authority, effective from the date of communication to be conveyed by New & Renewable Energy Department/HAREDA in written and shall be treated as unsatisfactory performer.

iv. DGS&D/New & Renewable Energy Department/HAREDA/the consignee will have the liberty to get the sample for the item(s) supplied tested from any of the Govt. approved laboratory at any time during the installation or warranty period to ascertain the performance of the item(s) as per DNIT specifications. If during the lab test, sample fails then supplier has to repair/ replace the defective systems within 15 days of issue of such notice. If on the request of the supplier more than one samples are drawn for lab test and any one of them fail the lab test, bidder has to replace all the defective system at his own cost.

v. The Contractor/supplier shall continue to provide spare parts for at least two years after the expiry of warranty period at the users cost. If the contractor fails to continue to supply spare parts and services to users then New & Renewable Energy Department/HAREDA/DGS&D shall take appropriate action against the firm which can be to ban the supplier for participating in future tenders.

6. Terms and Condition for Payments

The payments shall be made by the indenting department/organisation as per thefollowing terms and conditions:

i. 70% after installation of the system supported with Joint Commissioning Report (Provisional) signed by Supplier, representative of user organization & P.O. of the concerned district along with bill & photographs of complete system.

ii. 20% payment on submission of Final Joint Commissioning Report (JCR), supported with project completion report, duly signed by the supplier, district PO. However, if the supplier submits the Solar Generation meter (with CT, if required) and Bi- Directional meter (with CT/PT, if required) and there is delay on the part of DISCOMs

for installation of Net Meter beyond 15 Days of submission of the meters to DISCOMs or beyond 15 days of installation of system whichever is later, then this payment to the Supplier may be released within next 15 days on the basis of Provisional Joint Commissioning Report & PCR (Status of submission of meters etc. shall be mentioned, if NM is pending for installation at level of user/DISCOMs).

iii. **10% payment to be released on completion of 07 years from the date of commissioning of the plant, on submission of satisfactory performance report of the systems duly certified by the concerned PO/APO and user OR The said amount may be released against the submission of bank guarantee of equal amount valid for seven years from the date of commissioning of the plant.**

iv. Income Tax shall be deducted at source as per rules.

7. Insurance

System should be insured for entire warranty period of 07 for natural calamities, theft & burglary etc.

8. Other Terms and Conditions

a) The offer shall be submitted online only. No tender will be accepted in physical form.

b) Before submission of online bids, the bidder must ensure that scanned copies of all the necessary documents have been uploaded with the bid. All the document uploaded must be legible, illegible documents will not be considered.

c) Nodal Agency will not be responsible for any delay in online submission of bids due to any reason whatsoever.

d) The price quoted should be FOR anywhere in the State of Haryana inclusive of all taxes and duties, custom duty, excise duty, service tax, sales tax, C.S.T., local taxes, GST, Income Tax, Surcharge on income tax etc. if any, including 07 years warranty (or as notified in the bid) of the complete system/ plant. A supplier/ contractor shall be entirely responsible for all taxes, duties, license fees, etc. All taxes payable as per Government income tax & service tax norms will be payable by the contractor. If any new tax/duty is levied during the contract period the same will be borne by the firm exclusively. TDS will be deducted from the payment of the contractor as per the prevalent laws and rules of Government of India and Government of Haryana state in this regard.

e) Material shall be strictly as per DNIT specifications. If there is any left out specification, the same shall be considered as per the latest specifications applicable as per MNRE/ BIS/International Standards.

f) In case of any ambiguity in interpretation of any of the clauses/ provision of the said rate contract/DNIT, the decision of the Director, HAREDA or Director Supplies & Disposals Department Haryana shall be final and binding.

g) It shall be the sole responsibility of the contractor to get verified the quality & quantity of the supplied material at the site of delivery.

h) The Contractor shall indemnify the HAREDA against all third party claims of Infringement of patent, royalty's trademark or industrial design rights arising from use to the goods or any part thereof.

i) Contractors, wherever applicable, shall after proper painting, pack and crate all the equipment in such manner as to protect them from deterioration and damage during rail and road transportation to the site and storage at the site till time of installation. Contractor shall be held responsible for all damage due to improper

packing/handling.

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

k) The goods supplied under the contract shall be fully insured against loss or damage incidental to manufacture or acquisition, transportation, shall be included in the bid price.

l) DGS&D may at any time terminate the contract by giving written notice to the contractor without compensation to the contractor, if it 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 the NRE/HAREDA.

m) NRE/HAREDA/DGS&D, may by written notice sent to the supplier, terminate the contract, in whole or in part at any time for its convenience.

n) To assist in the examination, evaluation and comparison of bids the DGS&D may at its discretion ask the bidder for a clarification of its bid. The request for clarification and the response shall be in writing.

o) At any time prior to the submission of the tender or prior to the opening of the technical bids, the DGS&D may, for any reason, whether at its own initiative or in response to a clarification requested by the Bidder, modify the Tender documents by amendment/corrigendum.

p) Any material /instrument required to complete /successful running of the project which is not mentioned in the DNIT will be provided by the bidder in the quoted rates only and no additional payment shall be made.

q) Not more than one tender should be submitted by one contractor or by a firm of contractors for the same work.

r) Under no circumstances will a father or his son or their close relation or the partner of one firm be allowed to tender as separate tender. A breach of this condition will cause the tenders of such parties liable for rejection, forfeiture of their earnest money and the firm may be black listed.

The firm (s) tendering shall clearly mention in their tender whether any of the close/near relative of their management/management of sister concerned firms is in the employment of the HAREDA/Department of New & Renewable Energy, Haryana and in case their close/near relative is in employment of the HAREDA/Department of New & Renewable Energy, Haryana then his/her name, designation and place of posting to be mentioned.

If the tendering firm do not disclose and furnish the correct information as required in above clause, then his earnest money and/or Performance Security Deposit may be forfeited and in case the contractor has been awarded the work, the same may be cancelled. For concealing any information the firm may be black listed.

Note:

The word "Close/ Near Relative" mentioned in the above clause means father, mother, brother, sister, brother-in-law, sister-in-law, daughter-in-law, daughter, father-in-law, mother-in-law, son, son-in-law, first cousin of self/spouse, spouse, father-in-law and mother-in-law of son/daughter.

s) Income Tax/Cess will be deducted at source from contractor' bills/dues in accordance with latest Govt. orders from time to time. The contractor will have no objection to this effect.

t) The manufacturer shall supply all technical literature and drawing considered necessary for the installation, operation and maintenance of the equipment and its fittings.

u) The firm shall put up a MS iron display board (at least of the size 3'x2'), whereas asked by the HAREDA, duly painted at site indicating salient features like year of installation, capacity of system, cost, technology, important technical parameters etc. along with the names of MNRE, GoI and HAREDA as the sponsoring agency after approval of the same from HAREDA.

v) EMD is liable to be forfeited in case of evidence of cartel formation by the bidder(s). Further, in case where cartel formation amongst the manufacturers-suppliers is apparent, complaint shall be filed with the Competition Commission of India and/or other appropriate forum. EMD is liable also to be forfeited in case of submitting forged/false/fabricated documents.

w) DGS&D reserve the rights to verify the claimed capacity of the bidder, at any stage, from their own or through a third party. Bidder/successful supplier will have to extend all cooperation. If the claim of the bidder is found negative, then DGS&D may consider reject/cancel the bid/contract.

x) Bidder who is manufacturer of Solar PV Modules or Solar Cells (to be used in the system) and manufacturing the said item (s) in its unit and having valid test report of, tested as per MNRE, GOI latest guidelines/BIS for minimal technical specifications of the tender document in its own name (the bidder) issued by MNRE/NABL/IEC accredited testing center shall be treated as manufacturer for getting the benefits of concession under MME/MSME policy. The test report shall be issued by the date of closing of the tender and shall be valid as on date of opening of the technical bid. The bidder shall have manufacturing facility of the said item, with testing facility, in its unit. The manufacturer of solar module/ solar cell, bidding for Group A shall be eligible for MSME benefit while manufacturer of solar module/ solar cell, bidding for Group B shall be eligible for MSME benefit.

(***Documents to be uploaded:*** *Test certificate of the component manufactured by bidder (i.e. Solar PV Modules or Solar Cells) in the name of bidder).*

y) Grievance redressal Mechanism for participating Bidders/Firms in the e-procurement of the State will be as per vide GO No. 2/2/2016-41-B-II dated 25.7.2016 by Department of Industries & Commerce, Haryana. 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 5.00 PM 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.

z) No representation/complaint in whatsoever manner from the bidders/firms will be entertained after the opening of financial bid.

9. Instructions to Bidders

i. Bid for arranging the rate contract for design, supply, installation, testing & commissioning of Grid Connected Rooftop Solar Power Plants for tentative aggregated capacity as given above. The detailed bid document can be viewed and downloaded from the web-site, https://.....

ii. The Bidder is advised to read carefully all instructions and conditions appearing in Bid document and understand the scope of work fully. All information and documents required as per the Bid document must be furnished with bid. Failure

to provide the information and/or documents as required shall render the bid unacceptable for evaluation of technical bid. All bidders qualifying technical stage shall be treated at par. Financial Bid of Bidder qualifying at technical stage only shall be opened.

iii. Bidder shall be deemed to have examined the Bid document, to have obtained information in all matters whatsoever that might affect the carrying out of the works in line with the scope of work specified in the Bid document at the bid price and to have satisfied himself of the sufficiency of his bid. The Bidder shall be deemed to know the scope, nature and magnitude of the works and requirement of materials, equipment, tools and labour involved, wage structures and as to what all works Successful Bidder shall have to complete in accordance with the Bid Document irrespective of any defects, omissions or errors that may be found in Bid document.

iv. Bidders having been blacklisted by HAREDA or by any State Govt. / PSU/Cenral Govt., for whatever reasons, shall not be eligible/ allowed to participate in this Bid.

v. Bidder shall not be placed under the Negative List of MNRE as on the tender closing date.

vi. The bidding process is for arranging the rate contract for tentative 8.4 MWp aggregated capacity of Grid Connected Rooftop Solar Power Plants/Projects (without battery bank) under EPC cum comprehensive maintenance mode at various locations in the state of Haryana, India. However, total capacity as indicated above may go up to 1.5 times of tendered capacity, if required. Successful bidders will have to unconditionally agree to the additional quantum beyond the tendered capacity under the same terms and conditions.

vii. Bidder must meet the eligibility criteria independently as a company. Consortium of Companies is not allowed in any form. Bidder will be declared as a Technically Qualified Bidder based on meeting the eligibility criteria and as demonstrated based on documentary evidence submitted by the Bidder in the Bid.

viii. The Successful Bidder shall be required to establish at least one Service Centre at division level in Haryana.

ix. The Bidders shall have to submit their bid and other required relevant documents/ certificates, if any; online only as per time schedule (Key dates). Bid other than online will not be accepted by the Nodal Agency.

x. Bidder/firm having common director with the bidder should have not been debarred/blacklisted by any Govt. Deptt's / organization/ PSU's / institutions/ agencies/ autonomous Organizations/Ministry of Corporate Affairs. If any bidder provides false information regarding debarred /blacklisted or conceals the facts in this regard, Nodal agency reserves the right to forfeit both EMD & Performance Bank Guarantee of the bidder, to black list the bidders and also may cancel the contract.

xi. The Bidder should have valid GST & PAN registration certificate. A copy of which should be enclosed.

xii. The past performance of the firm/sister concern firm shall be considered while evaluating the technical bids. If bidder has poor record for supply & installation or for providing after sales service/ maintenance then bidder may be treated as not technical eligible.

xiii. The bidder must submit all the formats as per Annexure-IA.

Note: The Standard Terms & Condition & Policy matters may be incorporated by the Supplies & Disposals Department

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 maybe obtained in case required as per the rules.

A. 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-1 to 12' including 'Schedule-B of Supply' as part of this present DNIT are available as 'Tender Forms' at Link**https://dsndharyana.gov.in/downloads/**under 'Downloads' > 'TenderForm'.
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 '1'**.
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, Startups/ First Generation Entrepreneurs of the State, Central or Haryana Public Sector Enterprises and "approved sources" as declared by the Industries Department, Haryana, 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 (**Annexure-2**), Para no 3(A)(ii) of G.O. No. 2/2/2016-4I BII (1) of dated 20.10.2016 (**Annexure-3**) and Sr. No. 2 of the Table of G.O. No.2/2/2016-4IB-II dated 03.01.2019 (**Annexure-4**) (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. 2/2/2016-4IBII(2) dated 20.10.2016 (**Annexure-5**) 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 value of contract (ii) @2% of the value of contract
2	Other States/ Uts based firms	@5%of the value of contract

 # Haryana based MSEs will be eligible for performance security deposit @ 0.2% who have filed SSI Certificate/EM Part-II/UdyogAadhaar Memorandum (UAM)/Udyam Registration in Haryana and who participate directly in the tendered/quoted items and offering to supply the entire Work/Supply Order by their enterprise.

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. 2/2/2016-4IBII(2) dated 20.10.2016 (**Annexure-5**) (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-10**. 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-1**), G.O. No.2/2/2010-4-IB-II dated 16.06.2014 (**Annexure-6**), G.O. No.2/2/2010-4-IB-II dated 09.02.2015 (**Annexure-7**) will be applicable.

10. Concession to MSMEs of State:

    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-3**) and amendment vide G.O. No. 2/2/2016-4IB-II dated 11.12.2019 (**Annexure-8**)and as amendment vide G.O. No. 2/2/2016-4IB-II dated 13.08.2021 (**Annexure-8-A**)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 in Haryana in bidder's name and further subject to fulfillment of eligibility criteria as provided in the said Policy of 2016.

    ***Note:-** To claim the concessions/benefits under the above policy, the bidder is required to submit SSI Certificate/Manufacturing Entrepreneurs Memorandum (part-II) issued by the Industries Department Haryana in respect of the quoted item / UdhyogAadhaar Memorandum (UAM)/Udhyam Registration of Haryana based manufacturing enterprises in respect of the quoted item *(Ref. Industries & Commerce Department Haryana Memo No.TS/DS&D/11389-A Dated 03.07.2018)* and further subject to fulfillment of eligibility criteria as provided in the said Policy of 2016 and amendments from time to time.

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-4**)(or as amended from time to time in this regard) 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 (or as amended from time to time in this regard) 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-9**)and as amendment vide G.O. No. 2/2/2016-4IB-II dated 27.08.2021 (**Annexure-9-A**). 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. **Preference to Make in India:-** The public procurement in the State in reference to " Preference to make in India" shall be governed by Govt. Order No.02/08/2020-4IB-II dated 18.11.2020**(Annexure-11)**(or as amended from time to time in this regard)

17. **Restriction in Public procurement from bidders of certain Countries:-** The restriction on procurement from bidders from a Country or Countries on grounds of Defense of India or matters directly or indirectly related thereto including National Security shall be governed by Govt. Order No.02/09/2020-4IB-II dated 10.12.2020(Annexure-12)(or as amended from time to time in this regard).

18. Arbitration Clause

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

19. Jurisdiction

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

20. Blacklisting

    The firm should not be blacklisted/ debarred either in Government Departments/ Agencies in State of Haryana or Central Government Departments/ Agencies etc. as on the date of submitted of the bid in the present tender.

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 authorized dealer should submit authority letter of their manufacturer, to quote the rates on their behalf failing which tender is liable to be rejected.
5. When manufacturer as well as its dealer/s both quote the rates in the same purchase case, then for the purpose of distribution of order, they will be considered as one offer & the order/rate contract will be placed on that firm only which has quoted lower rates among such offers & the offer is as per NIT.
6. 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. SUPPLIES & DISPOSALS DEPARTMENT, HARYANA S.C.O. No. 09, Ist&IInd Floor, Sector-16, Panchkula-134109 (Haryana) Ph.:- 0172-2570121, 123, 124. Fax No.:- 0172-2570122. E-mail:- supplies@hry.nic.in , website:- dsndharyana.gov.in Any supporting documents if required is to be submitted in online mode only along with their Technical Bids by due date and time.
7. The Financial bid/s of only those bidders/ items will be opened who qualify on the basis of their Technical Bids and wherever required approval of samples. The date & time of opening of the Financial bids will be intimated in the due course.
8. 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 decision by Director, Supplies & Disposals, Haryana, Panchkula
9. The quantity of Stores can be increased or decreased.
10. 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.
11. Other terms & conditions as contained in various Annexure/ Documents as available under the folder https://dsndharyana.gov.in/downloads/"TENDER FORMS" as available at the link https://dsndharyana.gov.in/downloads/ under 'Downloads' > 'Tender Form' form part of this DNIT.
12. 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.ehttps://etenders.hry.nic.in. In case bidders need any clarifications or if training required to participate 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 eProcurement portal i.ehttps://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.

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

Annexure-I

DETAILED TECHNICAL SPECIFICATIONS

(Grid Connected Solar Rooftop Photo Voltaic (SPV) power plant-without battery bank)

1. DEFINITION

A Grid Connected Solar Rooftop Photo Voltaic (SPV) power plant consists of SPV array, Module Mounting Structure, Inverter consisting of Maximum Power Point Tracker (MPPT), and Controls & Protections, interconnect cables and switches. PV Array is mounted on a suitable structure. Grid connected SPV power plant may be without battery and should be designed with necessary features to supplement the grid power during day time. Components and parts used in the SPV power plants including the PV modules, metallic structures, cables, junction box, switches, inverters etc., should conform to the BIS or IEC or international specifications, wherever such specifications are available and applicable.

Solar PV system shall consist of following equipment's/components:

- Solar PV modules consisting of required number of Crystalline PV cells.
- Grid interactive Inverter with Remote Monitoring System
- Mounting structures
- Junction Boxes.
- Earthing and lightening protections.
- IR/UV protected PVC Cables, pipes and accessories

2. SOLAR PHOTOVOLTAIC MODULES:

(i) The PV modules/cell shall be of indigenous make.

(ii) SPV array contains specified number of same capacity, type and specifications modules connected in series or parallel to obtain the required voltage or current output. A Sufficient number of modules in series and parallel could be used to obtain the required voltage or current output.

(iii) The power output of individual SPV modules used in the SPV array, under STC, should be a minimum of 300 Wp, with adequate provision for tolerances measurement. Use of SPV modules with higher power output is preferred.

(iv) Modules supplied with the SPV power plants shall have a certificate as per IS 14286/IEC 61215 specifications or equivalent National or International /Standards. STC performance data supplied with the modules shall not be more than one year old.

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

(vi) The minimum module efficiency should be minimum **19.5 percent** and fill factor shall be more than 75 percent.

(vii) Modules must qualify to IS 170210 (Part 1) for the detection of potential-induced degradation - Part 1: Crystalline silicon (Mandatory in case the SPV array Open Circuit voltage is more than 600 V DC)

(viii) The name plate of SPV module shall conform to IS 14286/IEC 61215.

(ix) Module to Module wattage mismatch in the SPV array shall be within ± 3 percent.

(x) The SPV modules must be warranted for output wattage, which should not be less than 90% of the rated wattage at the end of 10 years and 80% of the rated wattage at the end of 25 years.

(xi) The RFID tag shall be placed inside the glass laminate of the SPV modules

(xii) The rated output power and efficiency of any supplied module should not be less than the power and efficiency defined in the bid. No negative tolerance for rated output power and efficiency of any supplied module shall be allowed.

(xiii) The module should have the following minimum information laminated inside the module.

- Made in India (to be subscribed in words)
- Company name/logo
- Model number
- Serial number
- Year of make

NOTE: The latest MNRE specifications of SPV solar module at the time of tender submission/supply will be applicable.

3. PERFORMANCE WARRANTY:

a. Material Warranty:

i. Material Warranty is defined as: The manufacturer should warrant the Solar Module(s) to be free from the defects and/or failures for a period of twenty five (25) years from the date of commissioning of the system

ii. Defects and/or failures due to manufacturing (it should indicate the voltage and rated wattage of the module)

iii. Defects and/or failures due to quality of materials

iv. Non conformity to specifications due to faulty manufacturing and/or inspection processes. If the solar Module(s) fails to conform to this warranty, the manufacturer will repair or replace the solar module(s), at the owners sole option.

b. Performance Warranty:

The predicted electrical degradation of power generated not exceeding 20% of the minimum rated power over the 25 year period and not more than 10% after ten years period of the full rated original output.

4. ARRAY STRUCTURE (MODULE MOUNTING STRUCTURE):

Module Mounting Structure (MMS) should be Hot Dipped Galvanised Iron (HDGI), of prescribed Specifications given below, for mounting of SPV modules at site. The panel frame structure should be capable of withstanding a minimum wind speed load of 150 KM per hour, after grouting and installation. MMS should be sturdy & designed to assist SPV Modules to render maximum output. The hardware (fasteners) used for installation of SPV Modules & MMS should be of suitable Stainless Steel (SS 304). Each MMS should be with minimum four legs grouted on pedestals of minimum 300X300X250 mm with anchoring/ chipping & chemical sealing of foundation based on RCC roof. Foundation bolts of stainless /GI steel should be at least 300 mm long.

Its size should be with reference to the specifications of the selected make SPV modules. Anti Theft Nut Bolts of SS (with washers) should be used for mounting modules for better theft proofing.

4.1 **Hot Dipped Galvanised Iron (HDGI) structure should meet the following minimum specifications:**

Rafter	: 60mmX60mmX3.2mm
Purlin	: 90mmX45mmX15mmX2.6mm
Vertical Post	: 60mmX60mmX3.2mm
Base Plate	: 200mmX200mmX8mm
Top Plate	: 176mmX176mmX8mm

4.2 **Foundation:**

The CC foundation shall have to be designed on the basis of the weight of the structure with module and minimum wind speed of the site, i.e. 150 Km/hour. Normally, each MMS should be with minimum four legs grouted on pedestals of proper size. However, for sheds CC work will not be required. The structure shall be grouted with fasteners with chemical sealing to withstand the required wind velocity. Angle of inclination shall be between 15^0 to 30^0, however, may be changed as per site requirement.

- CC Pillar size shall be : 300X300X250 mm
- For Pillars: Cement: Concrete: Sand Ratio :: 1:2:3
- Screws shall be Grouted in the Slab of roof up to depth of 50 mm.
- Lengths of rafter/Purlin may be changed as per site requirement.
- Sufficient numbers of vertical post shall be provided so that the structure may not bent.

5. 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 should also be DG set interactive, 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
Capacity	The Rated Capacity of the Inverter shall not be less than the solar PV array capacity.
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 (47to52 Hz)
Grid Frequency Synchronization	± 3 Hz or more (shall also compatible for Synchronization with DG Set)
Waveform	Sine Wave
Harmonics	AC side total harmonic current distortion<5%
Ripple	DC voltage ripple content shall not be more than1%.
Efficiency	The inverters should be tested as per IEC standards/ as per latest MNRE Specification. The following criteria should be followed : The benchmarking efficiency criteria for the Grid tied (central/string) inverter -At nominal voltage and full load is >95%, For load >25% is >92% and No load losses should not be more than 5%.
Losses	Maximum losses in sleep mode: 2W per 5kW Maximum losses in stand-by mode:10W
Casing protection levels	Degree of protection: Minimum IP-21 and 22 for indoor use and IP65 certification for outdoor use
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 shutdown
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
	Overcurrent
	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	Accurate displays on the front panel:
	DC input voltage

Panel	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
Communication interface	RS 485 / RS 232 Inverter shall also house MPPT (Maximum Power Point Tracker), an interface between Solar PV array to the power conditioning unit/inverter should also be DG set interactive.
Power Factor	> 0.9
THD	<3%
Test Certificates	The inverter should be tested from the MNRE approved test centres / NABL /BIS /IEC accredited/ 22 authorized testing-calibration laboratories. In case of imported power conditioning units, these should be approved by international test houses.

a) Three phase inverter shall be used if grid supply is of three phase.

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

c) 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.

d) 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).

e) **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.

f) Successful Bidders/Supplier shall be responsible for galvanic isolation of solar roof top power plant (>100kWp) with electrical grid or LT panel.

g) 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.

h) 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.

i) 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.

6. 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. Solar Generation Meter(s) and bidirectional energy meter, as per HERC Net Metering Regulations should also be installed in the campus/building of beneficiary.

(ii) The solar generation meter and Bi-directional 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 (amended from time to time) 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	IEC standards/IS
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	Relevant CEA (Technical Standards for Connectivity

		synchronization device, if the system is using synchronizer inherently built into the inverter than no separate synchronizer is required.	of the distributed generation resources) regulations 2013 and 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 amendments 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	Relevant CEA regulations 2013 and subsequent if any, (Technical Standards for Connectivity of the distributed generation

		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 to AC panel shall be included in the cost of the system.	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.

7. JUNCTION BOXES FOR CABLES FROM SOLAR ARRAY:

The junction boxes shall be made up of FRP (Hensel or equivalent make)/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.

However, if the inverter is equipped with Junction Box, the cables may be connected directly to the ports provided in the inverter and no separate Junction Box is required.

8. PROTECTION & SAFETY:

Both AC & DC lines have suitable MCB/MCCB, Contractors, 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 wall mounted or concrete platform (on rubber mat) with complete safety measure as per norms.

9. INVERTER/ARRAY SIZE RATIO:

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

10. AC COMBINER BOX BOARD (ACCB):

This shall consist of box shall consists of grid interphase panel of 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 at suitable placed to measure the power 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.

11. 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/AJB	4 sq mm (single core) DC Cable
AJBs to MJB/DCCB/Inverter	• Up to capacity of 10 kWp Solar Plant, minimum 4 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 6 sq mm (Single/Double core) DC Cable, with respect to current ratings of designing • For capacity more than 20 kWp Solar Plant, minimum 10 sq mm (Single/Double core) DC Cable, with respect to current ratings of designing
Inverter to ACCB/Distribution board	AC Cable as per design & rating

The size & rating of the cables may vary depending on the design & capacity of SPV Power Plant.

12. CABLE TRAY:

All the cables should be laid in appropriate GI cable tray as per the requirement of the site, No cable should be laid directly on ground and cable tray should be laid for any wire on ground such that there is gap of at least two inches above ground.

13. DISPLAY BOARD:

The bidder has to display a board at the project site mentioning the following:

- Plant Name, Capacity, Location, Type of Renewable Energy plant (solar), Date of commissioning, details of tie-up with transmission and distribution companies, Power generation and Export FY wise.
- Financial Assistance details from DNRE/MNRE/Any other financial institution apart from loan. This information shall not be limited to project site but also be displayed at site offices/head quarter offices of the successful bidder
- The size and type of board and display shall be approved by Engineer-in-charge before site inspection.
- **DANGER BOARDS**: Danger boards should be provided as and where necessary as per IE Act. /IE rules as amended up to date.

14. MANUAL DISCONNECTION SWITCH:

It should be provided to isolate the system from Grid which should be outside of ACCB.

15. AC DISTRIBUTION PANEL BOARD:

a) AC Distribution Panel Board (DPB) shall control the AC power from inverter, and should have necessary surge arrestors. Interconnection from ACDB to mains at LT Bus bar wfhile in grid tied mode.

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

c) The changeover switches, cabling work should be undertaken by the bidder as part of the project.

d) All the Panel's shall be metal clad, totally enclosed, rigid, floor mounted, air – insulated, cubical type suitable for operation on three phase / single phase, 415 or 230 volts, 50 Hz

e) The panels shall be designed for minimum expected ambient temperature of 45 degree Celsius, 80 percent humidity and dusty weather.

f) All indoor panels will have protection of IP54 or better. All outdoor panels will have protection of IP65 or better.

g) Should conform to Indian Electricity Act and rules (till last amendment).

h) All the 415 AC or 230 volts devices / equipment like bus support insulators, circuit breakers, SPDs, VTs etc., mounted inside the switchgear shall be suitable for continuous operation and satisfactory performance under the following supply conditions.

Variation in supply voltage	+/- 10 %
Variation in supply frequency	+/- 3 Hz

16. DATA ACQUISITION SYSTEM / PLANT MONITORING:

I. The Department of New & Renewable Energy & HAREDA will have a common State Level Solar Energy Data Management platform for monitoring of operation and performance of Roof Top Solar Plants installed.

II. Remote Monitoring System (RMS) provided by all bidders should connect to State Level Solar Energy Data Management platform.

III. Remote Monitoring System (RMS) should have following minimum features or modules:

Feature	Details
Solar System Performance Parameters	DC Voltage, DC current, AC output Current, Power, Energy, Inverter Status etc.
RMS device Performance	%Device Connectivity, %Data Availability etc.
Geo Location	RMS shall have built in GPS module to update Geo Location of system

IV. **Communication Architecture between SEDM and RMS should be as per following:**

A. Communication Connectivity:

i. **Field Device Connectivity:** RMS communication with Inverter should be on RS485 MODBUS RTU protocol to ensure interoperability irrespective of make and manufacturer

ii. **Remote Connectivity:** Using GSM/GPRS/2G/3G/4G cellular connectivity through SIM Card, cost of SIM card has to be borne by bidder in entire duration of the contract

iii. **Local Connectivity:** Ethernet/Bluetooth/Wi-Fi connectivity to configure parameters, notifications, communication interval, set points etc. or to retrieve locally stored data

iv. **Sensor Connectivity:** RMS shall have provision for 04 Analog with 0.1% accuracy to address the requirement of local sensors connectivity if required by SIA for applications such as irradiation, temperature etc.

B. Communication Modes:

i. Push Data on Event/Notification: Inverter ON/OFF, Inverter fault, protection operated etc.

ii. Push Data Periodically: important parameters of Inverter and Energy Meters (as mentioned in tender) should be pushed to central server on configurable interval. Interval should be configurable in multiple of 1 minute.

iii. Command On Demand: It should be possible to send commands via GSM or GPRS to RMS either to control Inverter operations or to update configuration

C. Communication Protocol:

RMS should provide data on MQTT Protocol to establish communication with thousands of systems.

D. Security:

Communication between RMS and Server should be secured and encrypted using TLS/SSL/X.509 certificate etc.

As a part of IoT protocol, Authentication and Authorization should be implemented using token/password mechanism

E. Message Format:

RMS should provide data in a JSON message format as per Communication Architecture Guideline requirement

F. Data Storage:

In case of unavailability of cellular network, RMS should store data locally and on availability of network it should push data to central server. Local data storage should be possible for at least one year in case of unavailability of cellular network.

G. Configuration Update Over-The-Air:

Configuration update over the air of multiple parameters such as IP, APN, Data Logging Interval, Set Points etc. is essential.

17. PRIORITY FOR POWER CONSUMPTION:

Regarding the generated power consumption, in case of string inverter, priority need to given for internal consumption first and thereafter any excess power can be exported to grid.

18. PROTECTIONS

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

(i) **<u>Lightening and Over Voltage Protection</u>:**

The SPV Power Plant shall be provided with lightening 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.

The lightening arrester shall be of Early Streamer Emission (ESE) type.

(ii) **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 and equipments/control systems shall be compulsorily connected to the earth, separately. 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.

(iii) **Surge Protection:**

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

(iv) **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

19. CONNECTIVITY:

The user have to take approval/NOC from the Concerned DISCOM for the connectivity, technical feasibility, and synchronization of SPV plant with distribution network before commissioning of SPV plant, however the supplier have to extend all technical help to the user for preparing the documents required for getting the above clearance from DISCOMs.

Reverse power relay shall be provided by bidder (if necessary), as per the local DISCOM

requirement.

The maximum capacity for interconnection with the grid at a specific voltage level shall be as specified in the Distribution Code/Supply Code and amended from time to time. Connecting voltage shall be three phase or as per site requirement based on the availability of grid level and as per DISCOM. DISCOMS may be consulted before finalization of the voltage level and system shall be designed accordingly.

20. DRAWINGS & MANUALS:

(i) 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 in their bid along with basic design of the power plant and power evacuation, synchronization along with protection equipment.

(ii) Approved ISI and reputed makes for equipment be used.

21. 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.

22. CODES AND STANDARDS:

The quality of equipment supplied shall be controlled to meet the guidelines for engineering design included in the standards and codes listed in the relevant ISI and other standards, such as :

i. IEEE 928 Recommended Criteria for Terrestrial PV Power Systems.
ii. IEEE 929 Recommended Practice for Utility Interface of Residential and Intermediate PV Systems.
iii. IEEE 519 Guide for Harmonic Control and Reactive Compensation of Static Power Controllers.
iv. National Electrical NEPA 70-(USA) or equivalent national standard.
v. National Electrical Safety Code ANSI C2- (USA) or equivalent national standard.
vi. JRC Specification 503 (Version 2.2 March 1991) or JPL Block V standard for PV modules.
vii. The inverter manufacturer should attach efficiency certificate from Independent Third party Testing laboratory i.e. IEC, TUV, SNL/ERTL & STQC. Inverter should confirm to IEC 61683 for efficiency measurements and IEC 60068 2 for environmental testing. MPPT unit should confirm to design qualification IEC 62093.
viii. IEC 62116 for Anti Islanding
ix. IEC 62109-1, IEC 62109-2 for safety
x. IEC 61727 FOR UTILITY INTERFACE.

PERFORMA-I

INFORMATION IN SUPPORT OF MEETING ESSENTIAL ELIGIBILITY CONDITIONS REGARDING AVERAGE ANNUAL TURNOVER OF THE BIDDER IN LAST THREE FINANCIAL YEAR ENDING 31.3.2023

Annual turnover of the bidder in last three financial year:

Name of Bidder:

Annual turnover data for last three years ending on 31st March 2023			
S.No.	Year	Turnover (Rs. in Lacs)	Turnover Rupees in words
1.	2020-21		
2.	2021-22		
3.	2022-23		
4.	Average turnover in last three years ending on 31st March 2023 =(1+2+3)/3		

Signature with seal of bidder
Dated:

Signature of Charted Accountant with seal

Name _____

Name of CA Company: _____

M.No. _____

Note:

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

PERFORMA-II (A)

DECLARATIONBYTHEBIDDER
(To be submitted on letter head of Bidder)

Reference No: Date:

To

The Director,
Supplies & Disposals Department,
Panchkula (Haryana),

Subject: Design, Supply, Erection, Testing & Commissioning of Grid Connected Rooftop Solar Power Plants, including comprehensive maintenance for a period of 07 years including supply of Solar Generation & bi-directional meters, in the Haryana.

Madam/ Sir,

1. We have read and examined the tender documents relating to the subject cited works (hereinafter referred to as "Works") as issued by you:
2. Having examined the Tender Documents and being duly authorized we, hereby, bid for the execution, and completion of the Works referred to in the Tender Documents upon the terms and conditions contained or referred to therein and in accordance to all respects with the specifications and other details given therein.
3. 'PURCHASER' and its authorized representatives are hereby authorized to conduct any inquiries or investigations to verify the statements, documents, and information submitted in connection with this Bid, and to seek clarifications from our bankers and employers regarding any financial and technical aspects. This Bid shall also serve as authorization to any individual or authorized representative of any institution referred to in the supporting information to provide such information deemed necessary and as requested by you to verify statements and information provided in this application, such as the resources, experience, and competence of the Bidder.
4. We agree to keep this Bid open for acceptance for 180 days from the date of opening of Financial Bid, or such other extended period as may be required by you and also agree not to make any modifications in its terms and conditions of our own accord.
5. We agree if we fail to keep the validity of Bid open, as aforesaid, or we make any modification in the terms and conditions of our Bid of our own accord or after the acceptance of our Bid if we fail to execute an Agreement as prescribed in the Tender Documents or commence the execution of the works as provided in the Tender Documents, we shall become liable for forfeiture of the Earnest Money Deposit. In such an event you shall, without prejudice to any other right or remedy, be at liberty to forfeit the Earnest Money Deposit absolutely and take other actions as per terms & conditions of the contract.
6. We certify that the Bid submitted by us is strictly in accordance with the terms, conditions, specifications etc. as contained in the Tender Documents, and it is further certified that it does not contain any deviations to the aforesaid documents.
7. The bid is made with the full understanding that:-

a) Bids by qualified bidders will be subject to verification of all information submitted for qualification at the time of bidding

b) PURCHASER reserves the right to:

(i) Amend the scope and value of any work bid under this tender.
(ii) Reject or accept any application, cancel the tender process and reject all bidders by giving a written notice.

8. PURCHASER shall not be liable for any actions taken under (b) i and ii above.
9. We undertake, if our bid is accepted, and on receipt of the work order to commence the works and to complete and deliver the whole of works comprised in the contract within the period stated and in compliance with the tender documents.
10. If our bid is accepted, we will furnish Performance Security Deposit as per terms & conditions mentioned in DNIT.
11. We understand that you are not bound to accept the lowest or any bid you may receive.
12. All the major items like module, charge controller, LED bulbs/ tube lights, fan etc. should be indigenously made.
13. We are capable of executing and completing the work as required in the tender.
14. We accept all risks and responsibilities directly or indirectly connected with the performance of the tender.
15. We have no collusion with other Bidder, any employee of HAREDA or with any other person or firm in the preparation of the bid.
16. We have not been influenced by any statement or promises of HAREDA or any of its employees, but only by the tender document.
17. We are financially solvent and sound to execute the work.
18. We have sufficient experience and competent to perform the contract to the satisfaction of HAREDA.
19. We are 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.
20. Our company has never been debarred from similar type of work by HAREDA and or any of the Government undertaking/Department.
21. We assure to execute the tendered work as per specifications, terms and conditions of the contract. If awarded to us.
22. The undersigned declare that the statements made and the information provided in the Bid including the completed applications and formats are complete, true, and correct in all aspects.

We have gone through carefully all the Bid conditions and solemnly declare that we will abide by any penal action such as disqualification or black listing or termination 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.

Date of Submission: **(Signature of the Bidder)**
(Seal)

Place:

PERFORMA-II (B)

DECLARATION BY THE BIDDER REGARDING QUALIFICATIONS

I/we hereby declare that:

1. I/we possess the necessary professional, technical, financial and managerial resources and competence required by the Bidding Document issued by the Procuring Entity;

2. I/we have fulfilled my/our obligation to pay such of the taxes payable to the Union and the State Government or any local authority as specified in the Bidding Document;

3. I/we are not insolvent, in receivership, bankrupt or being wound up, not have my/our affairs administered by a court or a judicial officer, not have my/our business activities suspended and not the subject of legal proceedings for any of the foregoing reasons;

4. I/we do not have, and our directors and officers not have, been convicted of any criminal offence related to my/our professional conduct or the making of false statements or misrepresentations as to my/our qualifications to enter into a procurement contract within a period of three years preceding the commencement of this procurement process, or not have been otherwise disqualified pursuant to debarment proceedings;

5. I/we do not have a conflict of interest as specified in the Act, Rules and the Bidding Document, which materially affects fair competition;

SIGNATURE OF AUTHORISED
SIGNATORY OF THE BIDDER
WITH SEAL

Date:

Name:
Designation:
Address:

PERFORMA-III

GENERAL PARTICULARS OF BIDDER

Bid for Design, Supply, Erection, Testing & Commissioning of Grid Connected Rooftop Solar Power Plants, including comprehensive maintenance for a period of 07 years including supply of bi directional meter, in the Haryana.

1.	Name of firm	
2.	Postal Address	
3.	Telephone,Telex,FaxNo	
4.	E-mail	
5.	Website	
6.	**Category of Bidder/** Company incorporated in India under the Companies Act, 1956 or 2013 including any amendment thereto or proprietary/partnership firm/LLP firm *A copy of certificate of incorporation shall be furnished along with the bid in support of above.*	
7.	Whether, the bidder (**manufacturer of solar module/solar cell in Haryana**) is any one of the following : (i) Manufacturing Micro & Small Enterprises (including Khadi & Village Industries) or (ii) Manufacturing Medium Enterprises (including Khadi & Village Industries) *If, the bidder Manufacturing Small & Medium Enterprises (including Khadi & Village Industries) or Manufacturing Micro Enterprises (including Khadi & Village Industries), then please mention the device/item (solar module/Solar cell) for which it is registered in Haryana. A copy of certificate of Entrepreneurs Memorandum/UDYOG AADHAR issued by Industry Department, Haryana should be furnished along with the bid in support of above.*	
7.1	Quality Certification of ISI/ISO/ AgMark/ Quality mark issued form competent	

	authority in State or Central Govt. in respect of the items/goods mentioned in the tender (Provide the required certification No. and upload the certificate with the bid).	
7.2	Is the bidder registered with DGS&D/ NSIC/ GOI Department/ State Govt. Department/ GOI PSUs/ State Govt. PSUs in respect of the items/goods mentioned in the tender. (Yes/No, if yes, upload the certificate with the bid)	
8.	Name of Directors of Company (at least Two directors with email IDs & contact Numbers)	(i) …….. (ii) ……..
9.	Name & designation of the authorized signatory to whom reference shall be made	
10.	Present activities/business of the firm i. Module Manufacturer ii. Inverter Manufacturer iii. System Integrator	
11.	Registration number	
	GST No.	
	PAN	
	TAN	
12.	Place & State of billing	
13.	Have the contractor/ firm to pay arrears of income tax? If yes up to what amount?	
14.	Have the contractor/ firm/firms having common director ever been debarred by any Govt. Deptt. /Public Sector Undertakings for undertaking any work?	
15.	Monthly capacity of supply, installation & commissioning of the systems.	
16.	Bid offered for Capacity (Bidder has to bid for full capacity)	8,400 kWp
17.	Average annual turnover of the bidder for the last three years (Rs. in Lacs)	
18.	The bidder have positive net worth in the previous Financial Year. (Yes/No)	
19.	Experience of the bidder in terms of capacity installed in kWp (verified by any Govt. department/organisation)	------kWp
20.	*Make(s) of Modules offered for the system: (Upload Tie up certificates)*	i. ……, ii. ……

		iii. ……. iv. ……. v. …….
21.	*Make(s) of Inverters offered for the system: (Upload Tie up certificates)*	i. ……, ii. ……. iii. ……. iv. ……. v. …….
22.	Name of the any close/near relative of any employee/ office bearer/management of bidder company working in New & Renewable Energy Department, Haryana or HAREDA	Name Designation Place of Posting Relationship
23.	Litigation history	
24.	Any Other Information	

We solemnly declare that we are aware of binding provisions of the ALMM Order of MNRE and the List(s) thereunder.

We solemnly declare that we will abide by any penal action such as disqualification or black listing or termination of contract or any other action deemed fit, taken by, the Nodal agency against us, if it is found that the information, statements, documents, certificates produced by us are false / fabricated or any information is concealed therein.

Date **(Signature of Bidder)**
With SEAL

PERFORMA-IV

FINANCIAL BID

Rate per watt of rooftop grid connected rooftop solar power plant with five years Compressive maintenance of complete systems F.O.R. destination within Haryana, including designing, supply, transportation, packaging, installation, commissioning, all Taxes (as applicable) as per T&C and technical Specifications of DNIT.

Category	Description	Capacity Range	Basic Rates (Rs./Wp)	Applicable GST @13.8 %	For GCRT SPV Power Plant (Rates including all applicable taxes & duties per Watt)	
					Unit Rate (Rs/Wp) in words	Unit Rate (Rs/Wp) In figures
A-1	Design, Supply, Erection, Testing, Installation & Commissioning of Rooftop Grid Connected SPV Power Plants **without battery bank** (with Net-metering), including Comprehensive maintenance for a period of 07 years from the date of commissioning of the system including supply of solar generation & bi-directional meters at various places in State of Haryana	1 to 10 kWp				
A-2		11 to 50 kWp				
A-3		51 to 100 kWp				
A-4		101 to 500 kWp				

Note: This information should also be filled on-line on e-procurement site as per procedure.

Date……..
Place……
Business Address
……..

Signature……
Name……..
Designation……..
Company Stamp……

PERFORMA-V

TIE UP CERTIFICATE

(from Manufacturer on the letter head of the manufacturer)

We undertake to supply inverters/indigenously manufactured modules, confirming the specifications as per DNIT/tender no. …….. Invited by Supplies & Disposals Department Haryana to the ……..…….. ……..…… (name of bidder) for NRE/HAREDA requirement as and when ordered by the bidder.

Dated:

Authorised Signatory
(with Seal)

PERFORMA-VI

LITIGATION EHISTORY

Name of bidder

Year	Award for or Against bidder	Name of client	Cause of litigation and matter of dispute	Disputed amount (Current value in Rs.)	Actual awarded Amount (In Rs.)

1. *Bidders should provide information on any history of litigation or arbitration resulting from contracts executed in the last five years or currently under execution.*

Signature with seal of bidder

PERFORMA-VII

NET WORTH (FINANCIAL CAPABILITY)

Name of bidder

Financial information in Rs. Lakhs	Actual: For financial year 2020-21 (Rs. In Lakhs)	Actual: For financial year 2021-22 (Rs. In Lakhs)	Actual: For financial year 2022-23 (Rs. In Lakhs)
Total assets			
Current assets			
Total liabilities			
Current liabilities			
Profits before taxes			
Profits after taxes			
Net worth (Paid up share capital + reserves & surplus)			
Average **Net worth** for last Three Years			
Net worth is Positive or Negative			

It is certified that the bidder not suffered losses for any reasons whatsoever in last three Financial Years.

Signature with seal of bidder

Signature with seal of
Chartered Accountant
Name:
M.No**.**

1. Bidder must fill in the form.

2. The statement of Net Worth is to be certified by a Chartered Accountant.

PERFORMA-VIII

UNDERTAKING BY MANUFACTURER OF PV MODULE/INVERTER/PCU
(on Non Judicial Stamp Paper of Rs. 10/-)

I ————————————(Name of Authorised person) _____ (designation in the manufacturer company) on behalf of M/s. ———————————— ———————————————— (Manufacturer of Solar Module/ /Inverter), A company incorporated under the Companies Act, 1956, having its registered office at ———————— ————————————————————————————-and Factory at ———————— ———————— (herafter called the Company) has given the undertaking as under:

1. M/s. ———————————————————————— (System Integrator) Represented by ———————————————————— A company incorporated under the Companies Act, 1956, having its registered office at ———————— ———————————————— (hereafter called the system integrator) is hereby authorised to install the product /device…. …… (Solar Module/Inverter) manufactured by the Company, in the State of Haryana in reference to the tender no. ……..…. invited by DGS& D Haryana for New & Renewable Energy Department/HAREDA for supply and installation of the GCRT Solar Power Plant, if name of System Integrator is finalized in the rate contract and orders are received.
2. In case System Integrator defaults at any stage of execution of warrantee/guarantee/CMC and after sale service of the said device, installed in reference to rate contract of the said tender, then the Company will be responsible to execute the warrantee/guarantee/CMC of the product/device …….. (Solar Module/Inverter) at site of installation as per the terms and conditions of rate contract/DNIT of the above tender.
3. In case System Integrator defaults, the Company will adhere the directions of the New & Renewable Energy Department/HAREDA directly.

DATED:

Sign.: ……
Name of Authorised person: ……
Designation of Auth. Person: ……
Name of Manufacturer Company ……
With seal

Annexure-IA

Technical Bid format/ Index for the Technical Bid documents

(Tenders will be technically evaluated based on the sequence/index as per the details given below. In case the firm fails to provide the documents properly as per the Technical Bid format/Index/proper page numbering, bid of the firm can be rejected)

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	All the documents submitted by the bidder as part of its Technical Bid are attested by the signing authority of the bidder.	Yes/ No	
3	Submit an undertaking by the bidding firm in reference to acceptance of all the terms & conditions of the Schedule-A/ DNIT.	Yes/ No	
4	Submit a signed copy of DNIT.	Yes/ No	
5	The Bidder is either a body incorporated in India under the Companies Act, 1956 or 2013 including any amendment thereto or proprietary/partnership/LLP firm. Submit a copy of certificate of incorporation.	Yes/ No	
6	Is bidder system integrator, Tie-up certificate of other major items from original manufacturer. Submit document proof.	Yes/ No	
7	Bidder should have not been debarred/ blacklisted by any Govt. Deptt's / organization/ PSU's / institutions/ agencies/ autonomous Organizations. Submit a Affidavit on non judicial stamp paper duly attested by the notary stating that the bidder has not been blacklisted/debarred by any Govt. Deptt's / organization/ PSU's / institutions/ agencies/ autonomous Organizations.	Yes/ No	
8	The Bidder should have valid GST registration certificate of the billing state. Submit a copy of GST no and PAN no.	Yes/ No	
9	The bidder should have minimum average annual turnover 30% of the total estimated value of quoted	Yes/ No	

	capacity in the last three years, ending 31st March of the previous Financial Year (2022-23). *Submit the annual Turnover Certificate in given format* ***(Performa-I)*** *duly certified by CA.* *Submit the annual Turnover Certificate in given format* ***(Performa-I)*** *duly certified by CA.*		
10	The bidders are requested to enclose the proof of completion of the required capacity projects duly certified by SNA/any Government agency.) *Similar & relevant works/rate contract means: Supply, Installation & Commissioning of Grid Connected Rooftop Solar Power Plants or Ground Mounted Solar Power Plants.* Submit only Commissioning Certificates certified by SNA or any Government agency supporting the claim. Bidders shall not upload the work orders.	Yes/ No	
11	Submit Declaration by Bidder in Performa II(A) & II(B).	Yes/ No	
12	Submit General Particulars of the bidder in Performa III.	Yes/ No	
13	Submit Financial Bid in Performa IV (only online in Financial bid envelop).	Yes/ No	
14	The make of major components of the system i.e. Solar module, inverter/Micro Inverter/PCU, should be mentioned. Tie up certificates in Performa-V may be submitted.	Yes/ No	
15	Submit Litigation History in Performa VI.	Yes/ No	
16	Submit Net worth In Preforma-VII.	Yes/ No	
17	If manufacturer claims the MSME then the test report of solar module or solar cell, as the case may be, in the name of bidder shall be provided/submitted with the bid.	Yes/ No	
18	Submit Commissioning Certificates certified by SNA or any Government agency supporting the claim of experience.	Yes/ No	
19	If, bidder is system integrator, the undertaking of Manufacturer of major item (Performa VIII) shall be provided/ submitted.	Yes/ No	