Tender fee: 5000/-

TENDER NO. ZP/ ROOFTOP GRID CONNECTED SOLAR POWER PLANTS /2015-16/01

DNIT

RATE CONTRACT FOR SUPPLY, INSTALLATION & COMMISSIONING OF ROOFTOP GRID CONNECTED SOLAR POWER PLANTS

AT

ZILA VIKAS BHAWAN, ROHTAK

Additional Deputy Commissioner-cum-Chief Executive Officer, Zila Parishad, Rohtak

Zila Vikas Bhawan, Rohtak

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OFFICE OF ADDL. DEPUTY COMMISSIONER-CUM-CHIEF EXECUTIVE OFFICER (ZP), ROHTAK – 124001

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NOTICE INVITING TENDER

Sealed tenders are invited by Addl. Deputy Commissioner-cum-Chief Executive Officer (ZP), Rohtak Rate contract fo supply, installation and commissioning of 5kwp, 10kwp, 50kwp &100 Kwp Grid connected Solar Power Plant at Zila Vikas Bhawan, Rohtak from the eligible manufactures as mentioned in tender document. The tender document having detailed specifications, delivery schedule and terms & conditions can be obtained from the office on cash payment of Rs. 5000/- on any working day or it may be downloaded from the website link (http://www.rohtak.gov.in) and the tender fee can be deposited with their technical & commercial bid, in the form of Demand Draft in favour of Addl. Deputy Commissioner-cum-Chief Executive Officer (ZP), Rohtak payable at Rohtak.

The last date for the sale of tender 07-08-15 up to 5:00 PM and submission of tender is 10-08-15 up to 3:00 PM. The Commercial/Technical bids shall be opened on the same day at 4:00 PM.

Addl. Deputy Commissioner-cum-Chief Executive Officer (ZP), Rohtak reserve the right to reject any or all the offers or to modify the selection process without assigning any reason thereof.

Addl. Deputy Commissioner-cum-
Chief Executive Officer (ZP),
Rohtak.

IMPORTANT DATES

LAST DATE FOR SALE OF TENDERS	: 07-08-15 Up to 5:00 PM
LAST DATE FOR SUBMISSION OF TENDERS	: 10-08-15 Up to 2:00 PM
OPENING OF TECHNICAL AND COMMER CIAL BID	: 10-08-15 at 3:00 PM

Additional Deputy Commissioner-cum-Chief Executive Officer, Zila Parishad, Rohtak

SUPPLY, INSTALLATION AND COMMISSIONING OF 5 Kwp, 10kwp, 50 Kwp & 100kwp ROOFTOP GRID CONNECTED SOLAR POWER PLANT IN DISTRICT-ROHTAK

1. SCOPE OF WORK/DESCRIPTION OF STORES

(i) Bids are invited from the prospective bidders for design, Engineering, Manufacturing, Storage, Civil Work, Supply, Erection, Testing & Commissioning including maintenance for a period of 5 years including Power Evacuation System and cost of replacement of all the parts, covered under Guarantee period for a period of 5 years from the date of commissioning of Rooftop grid connected solar PV system in various Sites in Distt- Rohtak.

(ii) 100.0 Kwp aggregate capacity shall be installed at Zila Vikas Bhawan Rohtak and other projects shall be in the range of 5 Kwp, 10kwp, 50 Kwp & 100kwp capacity in various Sites in Distt- Rohtak.

2. TYPE OF TENDER

Rate Contract for a period of 12 months from the date of its issue.

3. SPECIFICATIONS OF SYSTEM

Specifications of the stores along with testing parameters are to be enclosed as separate **Annexure-I** by the scheme in charge.

4. MINIMUM ELIGIBILITY CONDITIONS

(i) Bidder should be a **Manufacturing Company** /Firm/ Corporation in India of SPV Cells / Modules Or Power conditioning unit/ inverter/ PV System Electronics (Conforming to relevant National / International Standards)
Or
MNRE **Channel Partner** for Rooftop grid connected solar power plant in the current financial year if notified.
Or
System integrator of Rooftop grid connected solar power plant.

(ii) **In case of manufacturer,** the bidder should have valid test report of any one of the major component (SPV cells/Modules or Power conditioning unit/ inverter/ PV system electronics) used in rooftop grid connected solar power plant manufactured by it on its own name and tested as per MNRE, GOI latest guidelines/BIS for "**Minimal** technical requirements / standards for rooftop grid connected solar power plants. For rest of the components

Test Certificates are necessary and should have been issued **on or after** ……(as per MNRE/GOI latest guidelines for the item)
(Document to be submitted: Test report of the component manufactured, test reports of rest of the major component along with tie up certificates.)

Or

In case of **system integrator and channel partners**, the bidder must submit the tie-up certificate with the manufacturers of major components with assurance to supply the offered quantity along with test certificates for "**Minimal technical requirements / standards for ……. systems / plants to be deployed in the name of manufacturer** (Test Certificates are necessary and should have been issued **on or after ……**) and details of the **skill set available** for implementing the projects(technical man power/expertise) and **O&M Plan** (details of service network).
(Document to be submitted: Test reports and tie up certificates for major components)

(iii) The overall average annual turnover of the bidder in the last three financial years ending March, 2015 should be at least Rs. **2.00 Crore.** In case of **new firms**, the bidders have to submit **solvency certificate** from the scheduled bank for **Rs. 2.00 crore issued** after the start date of the tender.
(Document to be submitted: Certificate from CA in the prescribed format given at **Performa-I** and Bank's Solvency Certificate in case of new firm. There is no need of uploading voluminous Annual Reports/balance sheets. However, complete balance sheet, copy of audited financial statement with profit and loss account for the last three years if required may be asked from the bidder after opening of technical bid.)

Note

Following benefits/concessions to the Haryana based Micro & Small Scale Enterprises & Khadi & Village Industry if participating directly not through intermediaries, shall be given as per GO No. 2/2/2010-4IB-II dated 24.3.2015:

a) For Manufacturing Small Enterprises (including Khadi & Village Industries) that have filed entrepreneur's memoranda in Haryana, the turnover/bank solvency requirement would be Rs. 1.0 crores.
b) For Manufacturing Micro Enterprises (including Khadi & Village Industries) that have filed entrepreneur's memoranda in Haryana, the turnover/bank solvency requirement would be Rs. 0.50 Crores.

(Document to be submitted: Certificate from CA in the prescribed format given at **Performa-I** and Bank's Solvency Certificate in case of new firm along with registration certificate from Industries Deptt, Haryana/KVIC.)

(iv) The bidder should have valid CST/ State VAT/TIN registration certificate issued before the last date of the tender. (Document to be submitted: Relevant Certificate)

(v) The tenderer should have never been debarred by any Government agencies/departments/PSUs for the item for which they are quoting against this tender (**Document to be submitted**: Undertaking in the prescribed **Proforma-II)**

(vi) The tenderer should have installed minimum 1000.0 Kwp SPV Power Plants in off-grid or grid type system, submitted with performance report from users last two years.

5. EARNEST MONEY DEPOSIT & TENDER FEE

A. Earnest Money Deposit

(i) The EMD would be Rs.2.0 lac.

(ii) Offers without EMD shall be out rightly rejected.

(iii) Central or Haryana Public Sector Enterprises and "approved sources" as declared by the Industries Department, Haryana, would be exempted from the deposit of EMD . These Central or Haryana Public Sector Enterprises and "approved source" as declared by the Industries Department, Haryana shall submit proof issued by the competent Govt. authority for exemption of EMD.

(iv) EMD of unsuccessful tender shall be returned after award of the contract /order. No interest will be paid on the earnest money. The EMD of the successful bidders shall only be released after receiving of 10% Security Deposit as per **clause-6**.

(v) EMD may be forfeited in case of non-deposition of Security Deposit (SD) as per clause no.6 or if a bidder withdraws its tender during the period of tender validity specified.

B. Tender Fee (as per GO No. 2/2/2010-4IB-II dated 24.3.2015)

Sr. No.	Description	Amount of Tender fee to be obtained from all the bidders except in the case of Haryana based MMEs AND KVI units	Amount of Tender fee for the Haryana based MSMEs and KVI units
1.	Rate contract for supply, installation & commissioning of Rooftop grid connected solar power plant.	Rs. 5,000/-	Rs. 1000/-

6. SECURITY DEPOSIT / PERFORMANCE SECURITY DEPOSIT

The successful tenderer shall have to deposit Security Deposit (SD) equivalent to **10% of the work order value within 30 days** from the date of issue of the work order. The EMD of such successful bidders shall be released on submission of SD in the shape of DD or Bank guarantee valid for a period of five year & six months. After the successful completion of the work order, the SD shall be treated as Performance Security Deposit (PSD) & shall be released on successful completion of the warrantee period of five years from the date of commissioning of the project. In case of delays, the validity of the SD/PSD will be extended by the firm failing which it will be encashed.

Note

For Haryana based Manufacturing Micro & Small Enterprises (including Khadi & Village Industries), if participating directly not through intermediaries , the security deposit will be the 5% of the work order value as per GO No. 2/2/2010-4IB-II dated 24.3.2015. Other terms shall remain the same.

7. PAYMENT TERMS

The payments shall be made as per the following terms and conditions:

a. **85% of the ordered value** after the supply of the complete system at site for the systems where installation & commissioning is required supported with material receipt issued by user /P.O of the concerned district

b. **15% of the ordered value** after installation, commissioning of the system for at least a period of 30 days supported with Joint Commissioning Report(JCR), along with satisfactory performance report, bill of material, photographs of complete system(before & after installation) duly signed by the district PO/APO and end user.

8. TIME SCHEDULE, PENALTY/LIQUIDATED DAMAGES

a. These systems are allowed to be got **inspected, supplied, installed and commissioned within Two months time from the date of issue of work order** during which following milestones should be achieved by the firm for execution of the project:

   i. Though the work order shall be released after entire satisfaction of the district office about clearance of the site, the firm shall also visit the site under intimation to A.D.C CUM CEO (Z.P) Rohtak & district Project Officer and inform A.D.C CUM CEO (Z.P) Rohtak & district project officer through email within 30 days about clearance of the site. In case no communication is received from the firm about the site, it will be assumed that the site is clear and no correspondence/request for additional time without penalty in this regard shall be entertained later.
   ii. Call for inspection should be given within 45 days through email/Fax. Inspection notice should be given **at least 7 days prior** to the proposed date of inspection. To illustrate it further, if the last date of supply is 31st March & supplier sends the inspection call on 30th March for inspection on 31st March, the inspection date shall be considered as 6Th April (7 days notice) & period from 1st April to 6th April shall be under penalty clause.

b. The time for and date of delivery or dispatch stipulated in the supply order shall be deemed to be the essence of the contract, and 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** subject to max. of 10% of the work order value recoverable on the value of the stores supplied. Once the maximum is reached, the "A.D.C CUM CEO (Z.P) Rohtak" may consider termination of the contract. In case of non-payment by the contractor, recovery will be made from his bills or amount of Earnest money or security deposited with ADC-cum-CEO, Zila Parishad, Rohtak, provide also that :

   (i) No recovery of penalty will be made if the ADC-cum-CEO, Zila Parishad, Rohtak accepts the delayed supplies by extending the delivery period by recording in writing that the exceptional circumstances were beyond the control of the supplier and there was no loss to the Government on written request by the supplier on valid grounds before the expiry of the allowed time. Requests for extension

received after the expiry of the allowed time shall not be entertained and shall be subject to penalty.

(ii) On the failure of the suppliers to make supply within the extended period or otherwise and the receipt of such information in the office of the ADC-cum-CEO, Zila Parishad, Rohtak, risk purchase at the cost of the supplier will be made by the ADC-cum-CEO, Zila Parishad, Rohtak within two months of the expiry of stipulated delivery period by inviting short terms quotations from the Registered and other known suppliers. The difference of excess cost thus, incurred will be recovered from the supplier from his pending bills, earnest money or security whichever is available. This procedure will be adopted after serving a registered notice to the supplier to supply stores within 15 days.

c. The Contractor shall not;

(i) Without the consent in writing of A.D.C CUM CEO (Z.P) Rohtak transfer, assign or sublet the work under this contract or any substantial part thereof to any other party. A.D.C CUM CEO (Z.P) Rohtak shall have at all reasonable time access to the works being carried out by the contractor under this contract. All the work shall be carried out by the contractor to the satisfaction of A.D.C CUM CEO (Z.P) Rohtak.

(ii) Disclose details of the conditions governing this contract to unauthorized persons (Indenting against this contract is permissible only for the bonafide use of Governments departments and quasi public and not for private parties or for the private use of the Government officers).

d. In the event of the contractor failing duly and properly to fulfill or committing breach of any of the terms and conditions of the tender or repeatedly supplying goods liable to rejection hereunder or failing, declining, neglecting/ or delaying to comply with any demand or requisition or otherwise not executing the same in accordance with the terms of this tender, or if the bidder or his agents or servants being guilty of fraud in respect of the contract or any other contract entered into by the contractor or any of his partners or representatives thereof with Government directing, giving, promising or offering any bribes, gratuity, gift, loan, perquisite, reward or advantage pecuniary or otherwise to any person in the employment of Government in any way relating to such officers or person of persons, office or employment or if the contractor or any of his partners become insolvent or apply for relief as insolvent debtor or commence any insolvency proceedings or make any composition with his/ their creditors or attempts to do so then without prejudice to Government rights and remedies otherwise**,** A.D.C CUM CEO (Z.P) Rohtak/ Government shall be entitled to terminate this contract forthwith and to **blacklist the contractor** for a period as deemed fit by the competent authority and purchase or procure or arrange from Government's stocks or otherwise at the contractor's risk and at the absolute discretion of the ADC-cum-CEO, Zila Parishad, Rohtak as regards the manner, place or time of such purchases, such supplies as have not been supplied or have been rejected under this agreement or are required subsequently by Government there under and in cases where issues in replacement are made from Government's stocks or supplies, the cost of value of stocks or supplies together with all incidental charges or expenses, shall be recoverable from the contractor

on demand and the contractor shall not be entitled to benefit from any profit which may accrue to Government.

9. INSPECTION & COMMISSIONING

(i) After receipt of call for inspection, the material shall be inspected by the ADC-cum-CEO, Zila Parishad, Rohtak or a committee authorized by him at firms premises or in exceptional cases at site and material shall be dispatched/erected after acceptance of the same by the Inspection Committee.

Call for inspection should be given within 45 days through email/Fax. Inspection notice should be given **at least 7 days prior** to the proposed date of inspection. To illustrate it further, if the last date of supply is 31st March & supplier sends the inspection call on 30th March for inspection on 31st March, the inspection date shall be considered as 6Th April (7 days notice) & period from 1st April to 6th April shall be under penalty clause.

(ii) The installation work shall be carried out under the close supervision of the Project Officer of the district & the user. **The final inspection after installation and commissioning shall be carried out by district office and user.** The supplier is required to supply, install and commission the material within 14 days from the date of acceptance of material. In case the time taken in supply, installation and commissioning of the material exceeds 14 days, the excess period shall be counted for levy of penalty. Therefore, it is necessary & in the interest of a supplier to get inspected the material well in advance before the stipulated delivery time in case of bigger systems which require considerable time in their installation & commissioning so as to avoid delay penalty. The supplier shall provide without any extra charge, all materials, tools, testing equipments, labour and assistance of every kind which the inspecting officer may consider necessary for any test or examination. A.D.C CUM CEO (Z.P) Rohtak can also get the systems tested from any Govt. approved test centre/ laboratory and the expenses shall be borne by the supplier. Rejected material (if any) will have to be replaced by the supplier at its cost within a week time.

(iii) In case the material offered for inspection fails to meet the specifications stipulated in DNIT /Order /Contract and the material is rejected by the Inspecting Committee or complete material is not available for inspection, A.D.C CUM CEO (Z.P) Rohtak will levy a penalty at 0.1% of the 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 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 EMD/PSD, risk purchase, debarring/blacklisting in future, and no further opportunity for inspection will be provided to the supplier firm.

(iv) The inspection report should be submitted to A.D.C CUM CEO (Z.P) Rohtak within three days from the date of inspection either by hand or by e-mail/fax. Similarly, the commissioning report should be submitted to the concerned district office and an advance copy to A.D.C CUM CEO (Z.P) Rohtak within **three days** from the date of commissioning either by hand and by e-mail/fax failing which the commissioning date shall be considered three days prior to the date of submission of the report in A.D.C CUM CEO (Z.P) Rohtak and the period of late submission of JCR shall be counted towards delay. The district office after verification will issue the JCR or shall report any discrepancy to the supplier with a copy to A.D.C CUM CEO (Z.P) Rohtak within three days. In

case of discrepancy in the system commissioned, the commissioning date shall be counted from the date when the discrepancy has been removed to the entire satisfaction of A.D.C CUM CEO (Z.P) Rohtak/District Office/User.

(v) The firm will print the words **'PROMOTED BY A.D.C CUM CEO (Z.P) ROHTAK & YEAR-…….''** on the body of the Systems in permanent manner so as to minimize any possible malpractices.

10. PRICE LOW CLAUSE

If at any stage, during the supply period, the firm offers these systems to any Govt. agency/SDA/SNA with similar geographical conditions, similar terms and conditions and technical specifications, as the case may be at a lower rate than contained in this tender, then such reductions will also be applicable to this tender. The benefit of difference in such a case shall be passed on to A.D.C CUM CEO (Z.P) Rohtak by the firm. In case of non-adherence to this clause or non discloser of such activities, A.D.C CUM CEO (Z.P) Rohtak will have full right to take penal action against the supplier and recover the excess amount paid.

11. VALIDITY OF BID

The bids shall be valid for a period of six months from the date of opening of tender. A.D.C CUM CEO (Z.P) Rohtak may ask to the bidder(s) to extend the validity, if necessary.

12. WARRANTY

(i) The Warranty period shall be 25 Years for the PV modules and 5 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. **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 7 days of forwarding such complaints. 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 A.D.C CUM CEO (Z.P) Rohtak. This shall be followed by two reminders on 7 days intervals each. The district office shall maintain proper record of the complaints.

b) Even after this, the complaints remain unattended the penalty @ Rs. 20 per day per system for smaller devices like solar lantern, Solar Cooker & Solar Home lighting etc. and Rs. 100 per day per system for other larger systems will be imposed from the expiry of 21 days & same will be deducted from the payment due to the supplier / out of the Performance Security Deposit/ bank Guarantee. The firm if failed to repair/ replace the defective system within next 10 days after expiry of the earlier specified 21 days of forwarding of the complaint then concerned ADC-cum-CPO shall forward the case to the ADC-cum-CEO, Zila Parishad, Rohtak along with estimated expenditure for the replacement/ repair. ADC-cum-CEO,

Zila Parishad, Rohtak may consider repairing / replacing such defective system on the cost of the supplier. **The firm who shall be penalized by revoking PSD/Bank guarantee shall deemed to be considered as unfit to participate in all the tenders floated by A.D.C CUM CEO (Z.P) Rohtak in future and shall be treated as unsatisfactory performer.**

c) If the whole PSD/ bank guarantee is utilized and the complaints are still pending then an online/registered notice will be sent to the firm to attend the complaint within 15 days.

d) If the firm still does not attend the complaint within the above mentioned period then the firm may be blacklisted and a legal proceeding may be initiated against the firm for Breach the agreement.

(ii) The supplier shall affirm as per standards for quality that anything to be furnished shall be new, free from all defects and faults in material, workmanship and manufacture, shall be of the highest grade and consistent with established and generally accepted standards for material of the type ordered, shall be in full conformity with the specifications, drawing or samples, if any and shall if operable, operate properly.

(iii) Performance of Equipment: In addition to the warranty as already provided, the supplier shall guarantee satisfactory performance of the equipment and shall be responsible for the period or up to the date specified in sub-clause (iii) hereof after the equipment has been accepted by the A.D.C CUM CEO (Z.P) Rohtak to the extent for any defects that may develop such defects shall be removed at his own cost when called upon to do so by the A.D.C CUM CEO (Z.P) Rohtak.

(iv) A.D.C CUM CEO (Z.P) Rohtak/the consignee will have the liberty to get the sample for the item(s) supplied tested from any of the Govt. approved lab. at any time during the inspection or warranty period to ascertain the performance of the item(s) as per DNIT specifications. The cost of testing will be borne by the supplier.

(v) The Contractor in consultation with concerned Project Officer will conduct training programme for users, focusing on main features, operation and maintenance of the systems. After successful supply/commissioning of the system and training, the system will be handed over to the person designated by the end user.

(vi) The Contractor/supplier shall continue to provide spare parts 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 A.D.C CUM CEO (Z.P) Rohtak shall take appropriate action against the firm.

13 **FORCE MAJEURE**

(i) Notwithstanding the provisions of clauses contained in this deed; the

contractor shall not be liable for forfeiture of its performance security, liquidated damages, termination for default, if he is unable to fulfill his obligation under this deed due to event of force majeure circumstances.

(ii) For purpose of this clause, "Force majeure" means an event beyond the control of the contractor and not involving the contractor's fault or negligence and not foreseeable. Such events may include, but are not restricted to, acts of Govt. either in its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and fright embargoes.

(iii) Obstruction in procurement of components /raw material by the firm from the manufacturers with whom they have tied up for execution of the projects under this tender shall not be covered under force majeure condition. The bidders are advised to make suitable arrangements for supply of parts and components for implementation of the tendered projects within allowed timeframe.

(iv) However, if a force majeure situation arises, the contractor shall immediately notify the "A.D.C CUM CEO (Z.P) Rohtak" in writing. The decision of the A.D.C CUM CEO (Z.P) Rohtak in above conditions shall be final.

14. ARBITRATION

If any question, dispute or difference what so ever shall arises between A.D.C CUM CEO (Z.P) Rohtak and the contractor, in the connection with this agreement except as to matters, the decisions for which have been specifically provided, either party may forthwith give to the other notice in writing of existence of such question, dispute or difference and the same shall be referred to the sole arbitration of the Principal Secretary/Secretary/Chairman, A.D.C CUM CEO (Z.P) Rohtak or a person nominated by him. This reference shall be governed by the Indian Arbitration Act, and the rules made there under. The award in such arbitration shall be final and binding on both the parties. Work under the agreement shall be continuing during the arbitration proceedings unless the A.D.C CUM CEO (Z.P) Rohtak or the arbitrator directs otherwise

15. PROCEDURE FOR FINALIZATION /AWARD OF RATE CONTRACT AND PLACING WORK ORDERS THEREAFTER:

I. First the Technical Bid shall be opened on **10-08-2015 at 3:00 PM in the Conference Hall of DRDA, Rohtak.**

II. Then Price part of only those tenderer, whose offer found technically and commercially acceptable after evaluation will be opened in the presence of tenderer or their authorized representative who chose to attend the meeting. The date to open the price part will be informed separately.

III. Thereafter, the status of the bidders i.e. L-1, L-2, L-3 so on shall be determined by giving purchase preference as mentioned in Clause no. 16 below to the bidder billing from Haryana State.

IV. Thereafter, the agenda shall be placed before the Competent Authority/High Powered Purchase Committee for negotiation and finalization of rate. The number of supplier parties on the rate contract should generally be restricted to three in each group subject to case to case basis.

V. The other terms and conditions shall be governed by policy / guidelines on procurement of stores issued by Department of Industries & Commerce, Haryana vide GO No. 2/2/2010-4 I BII dated 28 May 2010 and subsequent policy decision/ guidelines/amendment issued by Department of Industries & Commerce. These guidelines are available on the State Govt. website i.e. www.haryana.gov.in/ dsndharyana.gov.in. Some of the latest instructions issued vide GO No. 2/2/2010-4-IB-II dated 16.06.2014, for rate contract are as follows:

a. In cases where there is only one bidder for a particular item and the price quoted by such L1 bidder is accepted by the indenting department as being reasonable the order for the entire quantity qua such item could be placed on such bidder:
b. In cases where only two bidding firms are approved, the allocation of quantity of the order may go up to 70% in favour of the L1 bidder subject to the information available in the DNIT viz his offered capacity/capacity to produce/manufacture, orders/commitments in hand and previous track record:
c. In case, more than two firms are approved, the L1 bidder, whose finally discovered price becomes the basis for making counter-offer to other qualifying bidders, would be accorded priority for allocation of share of quantities, which may go up to 50% of the total estimated quantity of the Rate Contract subject to his offered quantity, capacity to produce/manufacture, orders/commitments in hand and previous track record:
d. In cases where there are more than one bidders consenting to accept the L1 discovered price in response to the counter-offer, the quantities shall be allocated by the HPPC among L2 & above approved bidders, as the case may be, based on the principles of (i) L2/L3 position (viz L2 bidder shall be preferred over L3 bidder & so on) (ii) offered quantity, (iii) capacity to supply, (iv) Sales turnover, (v) orders in hand, and (vi) previous track record in execution of orders (as per the information available in the DNIT).
e. It may not be necessary to make a counter-offer of the discovered price to all the bidders quoting within 10 % of the L1 quoted rates. Instead, such counter-offer may be restricted up-to L3 if they have the capacity to meet the entire order. However, if the L2 or L3 bidders do not accept the counter offered rates, the counter offer in that case could also be extended to other bidders whose quoted rates are within 10% price range.

16. PURCHASE PREFERENCE

A. For the bidders billing from Haryana (G.O No. 2/2/2010-4I BII dated 19 Dec., 2011)

I) Benefit of discounting of 50% Haryana VAT revenue from composite price bid would be allowed to only those bidders who have set up their sale offices in Haryana State before /at the time of submission of bid. For the suppliers billing from Haryana State, 50% of the VAT revenue accruing to the State of Haryana should be discounted from the composite price bid of the bidder while

comparing the bids received in response to such DNIT and the L1, L2, L3 bidder status will be determined accordingly.

ii) If a successful bidder is awarded the bid after discounting/ rebating 50% of the VAT revenues accruing to the state of Haryana and the state does not lead to the full accrual of the VAT revenue to the State of Haryana on the accepted price bid, a penalty equivalent to short accrual of the VAT revenues to the State of Haryana would be recovered from the supplier.

iii) **Bidders are therefore, advised to clearly mention the state of billing & applicable VAT on the quoted item in the price part of the bid.**

iv) In case a bidder does not expressly confirm to raise the billing from Haryana State in its bid offer, it is to be considered as a Non-Haryana billing offer.

B. **Procurement from Approved Source (GO No. 2/2/2010-4 I BII dated 28 May 2010)**

i) Purchase preference shall be accorded to the approved sources, including Central or Haryana State Public Sector Undertaking/Enterprises, provided that such approved source take 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.

17. SUBMISSION OF TENDER

i) Sealed tender should be submitted in two envelopes i.e. **Part-I (Technical) in Proforma-III** and **Part-II (Price part in the Proforma-IV**), the firm should submit their offers in two separate envelopes.

ii) Any offer received after the deadline for submission of offers shall be rejected and returned unopened to the tenderer. **No additional documents will be accepted after opening of technical bid.** The sole criterion for qualification/disqualification will depend upon the documents submitted by the bidder with the tender.

iii) All the pages of the submitted shall be numbered**.**

iv) Failure of furnish all information and documentary evidence as stipulated in the tender document or submission of an offer i.e. not substantially responsive to the tender document in all respects shall be summarily rejected.

18. DOCUMENTS TO BE ENCLOSED WITH THE OFFER

Part-I & Part-II of the tender should comprise the following documents:

i) Technical & commercial Part-I

The technical & commercial Part: Part-I of tender shall be offered and furnished complete in all respect strictly as per **Check list at Annexure-II** along with all requisite Performa's and their attached documents.

ii) Price part: Part-II

a) The price of **5, 10, 50 & 100 Kwp** of tendered capacity in full and complete set including all parts inclusive of supply, installation, commissioning, packaging, transportation, FOR, all taxes & levies, octroi, VAT etc. should be quoted in **Proforma-IV** (price part).

b) Price shall remain firm and fixed. Price variation clause is not acceptable.

c) Any conditional discounts on the prices offered will not be entertained / considered.

d) Offers should be quoted in lump sum inclusive of all taxes till the execution of the project and conditional offers with taxes will be **rejected out rightly**.

e) Price Part should only be quoted online in the prescribed format only.

iii) Failure to furnish all information and documentary evidence as stipulated in the tender document or submission of an offer i.e. not substantially responsive to the tender document in all respects shall be summarily rejected.

19. <u>OTHER TERMS AND CONDITIONS</u>

(i) The offer shall be submitted in physical form.

(ii) Before submission of bids, the bidder must ensure that scanned copies of all the necessary documents have been submitted with the bid.

(iii) ADC-cum-CEO, Zila Parishad, Rohtak will not be responsible for any delay in submission of bids due to any reason whatsoever.

(iv) 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, Trade Tax/VAT, Income Tax, Surcharge on income tax etc. if any. 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.

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

vi) The offer should be accompanied with the sample of quoted item (wherever required). The offer without sample shall be rejected. The sample must carry label giving information regarding name of the bidding firm, name of the item, tender no. , Sr.No. of the item and due date of the tender

(vii) All disputes relating to this work shall be subject to the jurisdiction of Panchkula and A.D.C CUM CEO (Z.P) Rohtak shall be the sole arbitrator.

(viii) The make of parts of systems should be strictly as per the make mentioned in the technical bid and test reports submitted along with the offer.

(ix) The A.D.C CUM CEO (Z.P) Rohtak will have the right of rejecting all or any of the quotation without assigning reason thereof.

(x) In case of any ambiguity in interpretation of any of the clauses/ provision of the said rate contract/DNIT, the decision of the A.D.C CUM CEO (Z.P) Rohtak shall be final and binding.

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

(xii) The Contractor shall indemnify the A.D.C CUM CEO (Z.P) Rohtak 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.

(xiii) 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.

(xiv) The contractor shall inform the A.D.C CUM CEO (Z.P) Rohtak of the date of each shipment from his works, and the expected date of arrival at the site for the information of the concerned Project Officers at least 7 days in advance.

(xv) 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.

(xvi) 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.

(xvii) A.D.C CUM CEO (Z.P) Rohtak 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 A.D.C CUM CEO (Z.P) Rohtak.

(xviii) A.D.C CUM CEO (Z.P) Rohtak, may by written notice sent to the supplier, terminate the contract, in whole or in part at any time for its convenience. The notice of termination shall specify that termination is for the purchaser's convenience in the interest of A.D.C CUM CEO (Z.P) Rohtak.

(xix) To assist in the examination, evaluation and comparison of bids the A.D.C CUM CEO (Z.P) Rohtak may at its discretion ask the bidder for a clarification of its bid. The request for clarification and the response shall be in writing.

(xx) At any time prior to the submission of the tender or prior to the opening of the financial bid the A.D.C CUM CEO (Z.P) Rohtak may, for any reason, whether at its own initiative or in response to a clarification requested by the Bidder, modify the Tender documents by amendments.

(xxi) The quantity of supply mentioned in the DNIT is tentative which can be increased or decreased.

(xxii) 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.

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

(xxiv) 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 and forfeiture of their earnest money.

(xxv) The person (s) tendering shall clearly mention in their tender whether any of their close/near relative is in the employment of the A.D.C CUM CEO (Z.P)

Rohtak/Department of Renewable Energy, Haryana and in case their close/near relative is in employment of the A.D.C CUM CEO (Z.P) Rohtak/Department of Renewable Energy, Haryana then his/her name, designation and place of posting to be mentioned.

(xxvi) The person (s) tendering shall also disclose and furnish the information on the sister companies/firms of the tendering firm along with name of the firms/companies where the person (s) tendering have any equity/share, if any. The person (s) tendering shall also clearly mention in their tender whether any of their close relative /close relative of the person (s) having company, is in the employment of the A.D.C CUM CEO (Z.P) Rohtak/Department of Renewable Energy, Haryana and in case their near relative is in employment of the A.D.C CUM CEO (Z.P) Rohtak/Department of Renewable Energy, Haryana then his/her name, designation and place of posting to be mentioned.

(xxvii) If the person tendering do not disclose and furnish the correct information as required in sub clause (xxv & xxvi) above, then his earnest money may be forfeited and in case the contractor has been awarded the work, the same may be cancelled.

Note:

a. 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 and mother-in-law, son-in-law, first cousin of self, wife, father-in-law and mother-in-law of son & daughter.
b. The person tendering mentioned in above clause means any individual contractor or a partner or means any individual contractor or Director of any firm or company.

(xxviii) 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.

(xxix) **The manufacturer shall supply all technical literature and drawing considered necessary for the installation, operation and maintenance of the equipment and its fittings**. These shall essentially include:-

i) Drawing showing over all dimensions and all other details including sectional view of the equipments.
ii) List of parts with reference to nos.
iii) Manual of instructions for the operation, maintenance and repairs/equipment and special fittings, if any.
iv) Checking methods and schedule for cleaning the system.
v) Any other relevant technical data which would be of assistance for efficient operation and maintenance of the system including energy savings etc.
vi) Detail of manufacturing equipment, plant and machinery with their make, specification, cost and year of purchase.

(xxx) The firm shall put up a **MS iron display board** at site indicating salient features like cost, technology, important technical parameters etc along with the names of MNRE, GoI and A.D.C CUM CEO (Z.P) Rohtak as the sponsoring agency after approval of the same from A.D.C CUM CEO (Z.P) Rohtak (For SWHS/Power Plants/Steam Cooking system.

(xxxi) In view of RFID tag made mandatory by MNRE for each SPV module, the supplier shall provide required tag reader at the time of inspection of modules.

(xxxii) The make and serial number of major component like module/ collector/PCU/battery/lamp/fixture etc. must be recorded by the manufacturer in a permanent manner on the body of the component along with the serial number and year of manufacture of that item. This will enable verification with sale/supply records.

(xxxiii) The manufacturer should issue excise gate pass for the products sold so that sale of product can be independently verified, where applicable.

(xxxiv) 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.

(xxxv) A.D.C CUM CEO (Z.P) Rohtak reserves 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 A.D.C CUM CEO (Z.P) Rohtak may consider to reject/cancel the bid/contract.

ANNEXURE-I

TECHNICAL SPECIFICATIONS

The proposed projects shall be commissioned as per the technical specifications given below.

1. DEFINITION

A Grid Tied Solar Rooftop Photo Voltaic (SPV) power plant consists of SPV array, Module Mounting Structure, Power Conditioning Unit (PCU) consisting of Maximum Power Point Tracker (MPPT), Inverter, and Controls & Protections, interconnect cables and switches. PV Array is mounted on a suitable structure. Grid tied SPV system is 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, PCUs 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 equipments/components.

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

1.1 SOLAR PHOTOVOLTAIC MODULES:

1.1.1 The PV modules used should be made in India.

1.1.2 The PV modules used must qualify to the latest edition of IEC PV module qualification test or equivalent BIS standards Crystalline Silicon Solar Cell Modules IEC 61215/IS14286. In addition, the modules must conform to IEC 61730 Part-1- requirements for construction & Part 2 – requirements for testing, for safety qualification or equivalent IS.

a) For the PV modules to be used in a highly corrosive atmosphere throughout their lifetime, they must qualify to IEC 61701/IS 61701

b) The total solar PV array capacity should not be less than allocated capacity (kWp) and should comprise of solar crystalline modules of minimum 200 Wp and above wattage. Module capacity less than minimum 200 watts should not be accepted.

c) Protective devices against surges at the PV module shall be provided. Low voltage drop bypass diodes shall be provided in array.

d) PV modules must be tested and approved by one of the IEC authorized test centers.

e) The module frame shall be made of corrosion resistant materials, preferably having anodized aluminum.

f) The bidder shall carefully design & accommodate requisite numbers of the modules to achieve the rated power in his bid. A.D.C CUM CEO (Z.P) Rohtak/owners shall allow only minor changes at the time of execution.

g) Other general requirement for the PV modules and subsystems shall be the Following:

I. The rated output power of any supplied module shall have tolerance of + 3%.

II. The peak-power point voltage and the peak-power point current of any supplied module and/or any module string (series connected modules) shall not vary by more than 2 (two) per cent from the respective arithmetic

means for all modules and/or for all module strings, as the case may be.

III. The module shall be provided with a junction box with either provision of external screw terminal connection or sealed type and with arrangement for provision of by-pass diode. The box shall have hinged, weather proof lid with

Captive screws and cable gland entry points or may be of sealed type and IP-65 rated.

IV. IV curves at STC should be provided by bidder.

V. The PV modules efficiency should be greater than 14.5%.

1.1.3. Modules deployed must use a RF identification tag. The following information must be mentioned in the RFID used on each module (This can be inside or outside the laminate, but must be able to withstand harsh environmental conditions).

a) Name of the manufacturer of the PV module

b) Name of the manufacturer of Solar Cells.

c) Month & year of the manufacture (separate for solar cells and modules)

d) Country of origin (separately for solar cells and module)

e) I-V curve for the module Wattage, Im, Vm and FF for the module

f) Unique Serial No and Model No of the module

g) Date and year of obtaining IEC PV module qualification certificate.

h) Name of the test lab issuing IEC certificate.

i) Other relevant information on traceability of solar cells and module as per ISO 9001 and ISO 14001

1.1.4 **Warranties:**

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 specified below for a period not less than five (05) years from the date of sale to the original customer ("Customer")

ii. Defects and/or failures due to manufacturing

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 Owner's 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.

1.2 ARRAY STRUCTURE

a) Hot dip galvanized MS mounting structures may be used for mounting the modules/ panels/arrays. Each structure should have angle of inclination as per the site conditions to take maximum insolation. However to accommodate more capacity the angle inclination may be reduced until the plant meets the specified performance ratio requirements.

b) The Mounting structure shall be so designed to withstand the speed for the wind zone of the location where a PV system is proposed to be installed (like Delhi-wind speed of 150 kM/ hour). It may be ensured that the design has been certified by a recognized Lab/ Institution in this regard and submit wind loading calculation sheet to A.D.C CUM CEO (Z.P) Rohtak. Suitable fastening arrangement such as grouting and calming should be provided to secure the installation against the specific wind speed.

c) The mounting structure steel shall be as per latest IS 2062: 1992 and galvanization of the mounting structure shall be in compliance of latest IS 4759.

d) Structural material shall be corrosion resistant and electrolytically compatible with the materials used in the module frame, its fasteners, antitheft nuts and bolts. Aluminium structures also can be used which can withstand the wind speed of respective wind zone. Necessary protection towards rusting need to be provided either by coating or anodization.

e) The fasteners used should be made up of stainless steel. The structures shall be designed to allow easy replacement of any module. The array structure shall be so designed that it will occupy minimum space without sacrificing the output from the SPV panels

f) Regarding civil structures the bidder need to take care of the load baring capacity of the roof and need arrange suitable structures based on the quality of roof.

g) The total load of the structure (when installed with PV modules) on the terrace should be less than 60 kg/m^2.

1.3 JUNCTION BOXES (JBs)

a) The junction boxes are to be provided in the PV array for termination of connecting cables. The J. Boxes (JBs) shall be made of GRP/FRP/Powder Coated Aluminium /cast aluminium alloy with full dust, water & vermin proof arrangement. All wires/cables must be terminated through cable lugs. The JBs shall be such that input & output termination can be made through suitable cable glands.

b) Copper bus bars/terminal blocks housed in the junction box with suitable termination threads Conforming to IP65 standard and IEC 62208 Hinged door with EPDM rubber gasket to prevent water entry. Single compression cable glands. Provision of earthings. It should be placed at 5 feet height or above for ease of accessibility.

c) Each Junction Box shall have High quality Suitable capacity Metal Oxide Varistors (MOVs) / surge arrestors, suitable Reverse Blocking Diodes. The Junction Boxes shall have suitable arrangement monitoring and disconnection for each of the groups.

d) Suitable markings shall be provided on the bus bar for easy identification and the cable ferrules must be fitted at the cable termination points for identification

1.4 DC DISTRIBUTION BOARD:

a) DC Distribution panel to receive the DC output from the array field.

b) DC DPBs shall have sheet from enclosure of dust & vermin proof conform to IP 65 protection. The bus bars are made of copper of desired size. Suitable capacity MCBs/MCCB shall be provided for controlling the DC power output to the PCU along with necessary surge arrestors.

1.5 AC DISTRIBUTION PANEL BOARD:

a) AC Distribution Panel Board (DPB) shall control the AC power from PCU/ inverter, and should have necessary surge arrestors. Interconnection from ACDB to mains at LT Bus bar while 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 change over 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, 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

1.6 PCU/ARRAY SIZE RATIO:

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

1.7 PCU/ 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 “Power Conditioning Unit (PCU)”. In addition, the

PCU shall also house MPPT (Maximum Power Point Tracker), an interface between Solar PV array & the Inverter, to the power conditioning unit/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:

- Switching devices : IGBT/MOSFET
- Control : Microprocessor /DSP
- Nominal AC output voltage and frequency : 415V, 3 Phase, 50 Hz
- Output frequency : 50 Hz
- Grid Frequency Synchronization range : + 3 Hz or more
- Ambient temperature considered : -20° C to 50° C
- Humidity : 95 % Non-condensing
- Protection of Enclosure : IP-20(Minimum) for indoor.

: IP-65(Minimum) for outdoor.

- Grid Frequency Tolerance range : + 3 or more
- Grid Voltage tolerance : - 20% & + 15 %
- No-load losses : Less than 1% of rated power
- Inverter efficiency (minimum) : >93% (In case of 5kW or above)
- Inverter efficiency (minimum) : > 90% (In case of less than 5 kW)
- THD : < 3%
- PF : > 0.9

a) Three phase PCU/ inverter shall be used with each power plant system (5kW or above) but In case of less than 5kW single phase inverter can be used. In 50 &100 Kwp systems PCU/ inverter shall be used 2x25 or 2x50 Kwp capacity.

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

c) The output of power factor of PCU 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.

e) The power conditioning units / inverters should comply with applicable IEC/ equivalent BIS standard for efficiency measurements and environmental tests as per standard codes IEC 61683/IS 61683 and IEC 60068- 2(1,2,14,30) /Equivalent BIS Std.

f) The charge controller/ 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.

g) The PCU/ inverters should be tested from the MNRE approved test centres / NABL /BIS /IEC accredited testing- calibration laboratories. In case of imported power conditioning units, these should be approved by international test houses.

2. INTEGRATION OF PV POWER WITH GRID:

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. Once the DG set comes into service PV system shall again be synchronized with DG supply and load requirement would be met to the extent of availability of power. 4 pole isolation of inverter output with respect to the grid/ DG power connection need to be provided.

3. DATA ACQUISITION SYSTEM / PLANT MONITORING

i. Data Acquisition System shall be provided for each of the solar PV plant.

ii. Data Logging Provision for plant control and monitoring, time and date stamped system data logs for analysis with the high quality, suitable PC. Metering and Instrumentation for display of systems parameters and status indication to be provided.

iii. Solar Irradiance: An integrating Pyranometer (Class II or better, along with calibration certificate) provided, with the sensor mounted in the plane of the array. Readout integrated with data logging system.

iv. Temperature: Temperature probes for recording the Solar panel temperature and ambient temperature to be provided complete with readouts integrated with the data logging system

v. The following parameters are accessible via the operating interface display in real time separately for solar power plant:

a. AC Voltage.

b. AC Output current.

c. Output Power

d. Power factor.

e. DC Input Voltage.

f. DC Input Current.

g. Time Active.

h. Time disabled.

i. Time Idle.

j. Power produced

k. Protective function limits (Viz-AC Over voltage, AC Under voltage, over frequency, under frequency ground fault, PV starting voltage, PV stopping voltage.

vi. All major parameters available on the digital bus and logging facility for energy auditing through the internal microprocessor and read on the digital front panel at any time) and logging facility (the current values, previous values for up to a month and the average values) should be made available for energy auditing through the internal microprocessor and should be read on the digital front panel.

vii. PV array energy production: Digital Energy Meters to log the actual value of AC/ DC voltage, Current & Energy generated by the PV system provided. Energy meter along with CT/PT should be of 0.5 accuracy class.

viii. Computerized DC String/Array monitoring and AC output monitoring shall be provided as part of the inverter and/or string/array combiner box or separately.

ix. String and array DC Voltage, Current and Power, Inverter AC output voltage and current (All 3 phases and lines), AC power (Active, Reactive and Apparent), Power Factor and AC energy (All 3 phases and cumulative) and frequency shall be monitored.

x. The time interval between two sets of data shall not be more than 10 minutes.

(A min. of 6 samples of data shall be recorded per hour)

xi. Data Acquisition System shall have real time clock, internal reliable battery backup (2 hours) and data storage capacity to record data round the clock for a period of min. 1 year.

xii. Computerized AC energy monitoring shall be in addition to the digital AC energy meter.

xiii. The data shall be recorded in a common work sheet chronologically date wise. The data file shall be MS Excel compatible. The data shall be represented in both tabular and graphical form.

xiv. All instantaneous data shall be shown on the computer screen.

xv. Software shall be provided for USB download and analysis of DC and AC parametric data for individual plant.

xvi. Provision for Internet monitoring and download of data shall be also incorporated.

xvii. Remote Server and Software for centralized Internet monitoring system shall be also provided for download and analysis of cumulative data of all the plants and the data of the solar radiation and environment monitoring system.

xviii. Solar Radiation and Environment Monitoring System

xix. Computerized solar radiation and environment monitoring system shall be installed on one of the buildings along with the solar PV power plant for 10 KW and above.

xx. The system shall consist of various sensors, signal conditioning, data acquisition, LCD display and remote monitoring for 10 KW and above.

xxi. Global and diffuse beam solar radiation in the plane of array (POA) shall be monitored on continuous basis.

xxii. Ambient temperature and relative humidity near PV array, control room temperature, at the level of array plane shall be monitored on continuous basis.

xxiii. Solar PV module back surface temperature shall be also monitored on continuous basis.

xxiv. Simultaneous monitoring of DC and AC electrical voltage, current, power, energy and other data of the plant for correlation with solar and environment data shall be provided.

xxv. Solar radiation and environment monitoring system shall have real time clock, internal reliable battery backup and data storage capacity to record data round

the clock for a period of min. 1 year.

xxvi. The data shall be recorded in a common work sheet chronologically date wise. The data file should be MS Excel compatible. The data shall be represented in both tabular and graphical form.

xxvii. All instantaneous data shall be shown on the computer screen.

xxviii. Historical data shall be available for USB download and analysis.

xxix. Provision for Internet monitoring and download of data shall be incorporated.

xxx. Remote Monitoring and data acquisition through Remote Monitoring System software at the owner /A.D.C CUM CEO (Z.P) Rohtak location with latest software/hardware configuration and service connectivity for online / real time data monitoring/control complete to be supplied and operation and maintenance/control to be ensured by the supplier. Provision for interfacing these data on A.D.C CUM CEO (Z.P) ROHTAK server and portal in future.

4. TRANSFORMER "IF REQUIRED" & METERING:

5.

4.1.1. Dry/oil type relevant kVA, 11kV/415V, 50 Hz Step up along with all protections, switchgears, Vacuum circuit breakers, cables etc. along with required civil work.

4.1.2. The bidirectional electronic energy meter (0.5 S class) shall be installed for the measurement of import/Export of energy.

4.1.3. The bidder must take approval/NOC from the Concerned DISCOM for the connectivity, technical feasibility, and synchronization of SPV plant with distribution network and submit the same to A.D.C CUM CEO (Z.P) Rohtak before commissioning of SPV plant.

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

5. POWER CONSUMPTION:

5.1.1. Regarding the generated power consumption, priority need to give for internal consumption first and thereafter any excess power can be exported to grid. Finalization of tariff is not under the purview of A.D.C CUM CEO (Z.P) Rohtak or MNRE. Decisions of appropriate authority like DISCOM, state regulator may be followed.

6. PROTECTIONS

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

6.1 LIGHTNING PROTECTION

The SPV power plants shall be provided with lightning &overvoltage protection. The main aim in this protection shall be to reduce the over

voltage to a tolerable value before it reaches the PV or other sub system components. The source of over voltage can be lightning, atmosphere disturbances etc The entire space occupying the SPV array shall be suitably protected against Lightning by deploying required number of Lightning Arrestors. Lightning protection should be provided as per IEC 62305 standard. The protection against induced high-voltages shall be provided by the use of metal oxide varistors (MOVs) and suitable earthing such that induced transients find an alternate route to earth.

6.2 SURGE PROTECTION

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

6.3 EARTHING PROTECTION

6.3.1 Each array structure of the PV yard should be grounded/ earthed properly as per IS:3043-1987. In addition the lighting arrester/masts should also be earthed inside the array field. Earth Resistance shall be tested in presence of the representative of Department/A.D.C CUM CEO (Z.P) Rohtak as and when required after earthing by calibrated earth tester. PCU, ACDB and DCDB should also be earthed properly.

6.3.2 Earth resistance shall not be more than 5 ohms. It shall be ensured that all the earthing points are bonded together to make them at the same potential.

6.4 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 by the utility personnel

7. CABLES

Cables of appropriate size to be used in the system shall have the following characteristics:

i. Shall meet IEC 60227/IS 694, IEC 60502/IS1554 standards

ii. Temp. Range: –10°C to +80°C.

iii. Voltage rating 660/1000V

iv. Excellent resistance to heat, cold, water, oil, abrasion, UV radiation

v. Flexible

vi. Sizes of cables between array interconnections, array to junction boxes, junction boxes to Inverter etc. shall be so selected to keep the voltage drop (power loss) of the entire solar system to the minimum. The cables (as per IS) should be insulated with a special grade PVC compound formulated for outdoor use.

vii. Cable Routing/ Marking: All cable/wires are to be routed in a GI cable tray and suitably tagged and marked with proper manner by good quality ferule or by other means so that the cable easily identified.

viii. The Cable should be so selected that it should be compatible up to the life of the solar PV panels i.e. 25years.

ix. The ratings given are approximate. Bidder to indicate size and length as per system design requirement. All the cables required for the plant provided by the bidder. Any change in cabling sizes if desired by the bidder/approved after citing appropriate reasons. All cable schedules/layout drawings approved prior to installation.

x. Multi Strand, Annealed high conductivity copper conductor PVC type 'A' pressure extruded insulation or XLPE insulation. Overall PVC/XLPE insulation for UV protection Armored cable for underground laying. All cable trays including covers to be provided. All cables conform to latest edition of IEC/ equivalent BIS Standards as specified below: BoS item /

component Standard Description Standard Number Cables General Test and Measuring Methods, PVC/XLPE insulated cables for working Voltage up to and including 1100 V ,UV resistant for outdoor installation IS /IEC 69947.

xi. The size of each type of DC cable selected shall be based on minimum voltage drop however; the maximum drop shall be limited to 1%.

xii. The size of each type of AC cable selected shall be based on minimum voltage drop however; the maximum drop shall be limited to 2 %.

8. CONNECTIVITY

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. Following criteria have been suggested for selection of voltage level in the distribution system for ready reference of the solar suppliers.

Plant Capacity	**Connecting voltage**
Up to 10 kW	240V-single phase or 415V-three phase at the option of the

	consumer
Above 10kW and up to 100 kW	415V – three phase
Above 100kW	At HT/EHT level (11kV/33kV/66kV)

a) The maximum permissible capacity for rooftop shall be 1 MW for a single net metering point.

b) Utilities may have voltage levels other than above, DISCOMS may be consulted before finalization of the voltage level and specification be made accordingly.

c) For large PV system (Above 100 kW) for commercial installation having large load, the solar power can be generated at low voltage levels and stepped up to 11 kV level through the step up transformer. The transformers and associated switchgear would require to be provided by the SPV bidders.

9. TOOLS & TACKLES AND SPARES:

a. After completion of installation & commissioning of the power plant, necessary tools & tackles are to be provided free of cost by the bidder for maintenance purpose. List of tools and tackles to be supplied by the bidder for approval of specifications and make from A.D.C CUM CEO (Z.P) Rohtak/ owner.

b. A list of requisite spares in case of PCU/inverter comprising of a set of control logic cards, IGBT driver cards etc. Junction Boxes. Fuses, MOVs / arrestors, MCCBs etc along with spare set of PV modules be indicated, which shall be supplied along with the equipment. A minimum set of spares shall be maintained in the plant itself for the entire period of warranty and Operation & Maintenance which upon its use shall be replenished

10. DANGER BOARDS AND SIGNAGES:

a. Danger boards should be provided as and where necessary as per IE Act. /IE rules as amended up to date. Three signages shall be provided one each at battery –cum- control room, solar array area and main entry from administrative block. Text of the signages may be finalized in consultation with A.D.C CUM CEO (Z.P) Rohtak/ owner.

11. FIRE EXTINGUISHERS:

i. The firefighting system for the proposed power plant for fire protection shall be consisting of:

ii. Portable fire extinguishers in the control room for fire caused by electrical short circuits

iii. Sand buckets in the control room

iv. The installation of Fire Extinguishers should confirm to TAC regulations and BIS standards. The fire extinguishers shall be provided in the control room housing PCUs as well as on the Roof or site where the PV arrays have been installed.

12. **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 theirbid 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.

iii. For complete electro-mechanical works, bidders shall supply complete design, details and drawings for approval to A.D.C CUM CEO (Z.P) Rohtak/owners before progressing with the installation work

13. **PLANNING AND DESIGNING:**

a) The bidder should carry out Shadow Analysis at the site and accordingly design strings & arrays layout considering optimal usage of space, material and labor. The bidder should submit the array layout drawings along with Shadow Analysis Report to A.D.C CUM CEO (Z.P) Rohtak/Owner for approval.

b) A.D.C CUM CEO (Z.P) Rohtak reserves the right to modify the landscaping design, Layout and specification of sub-systems and components at any stage as per local site conditions/requirements.

c) The bidder shall submit preliminary drawing for approval & based on any modification or recommendation, if any. The bidder submit three sets and soft copy in CD of final drawing for formal approval to proceed with construction work

14. **DRAWINGS TO BE FURNISHED BY BIDDER AFTER AWARD OF CONTRACT**

i. The Contractor shall furnish the following drawings Award/Intent and obtain approval

ii. General arrangement and dimensioned layout

iii. Schematic drawing showing the requirement of SV panel, Power conditioning Unit(s)/ inverter, Junction Boxes, AC and DC Distribution Boards, meters etc.

iv. Structural drawing along with foundation details for the structure.

v. Itemized bill of material for complete SV plant covering all the components and associated accessories.

vi. Layout of solar Power Array

vii. Shadow analysis of the roof

15. SOLAR PV SYSTEM ON THE ROOFTOP FOR MEETING THE ANNUAL ENERGY REQUIREMENT

The Solar PV system on the rooftop of the selected buildings will be installed for meeting upto 90% of the annual energy requirements depending upon the area of rooftop available and the remaining energy requirement of the office buildings will be met by drawing power from grid at commercial tariff of DISCOMs.

16. 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.

PROFORMA-I

INFORMATION IN SUPPORT OF MEETING ESSENTIAL ELIGIBILITY CONDITIONS REGARDING AVERAGE ANNUAL TURNOVER OF THE BIDDER IN LAST THREE FINANCIAL YEAR ENDING 31.3.2014/2015

Required: Rs.

S.No.	Financial Year	Turn Over (Rs. in lacs)	Turn Over (Rs. in lacs)in words
1.	2011-12		
2.	2012-13		
3.	2013-14		
3.	2014-15		
	TOTAL		

Signature of Charted Accountant with seal

Name _____

M.No. _____

PROFORMA-II

DECLARATION BY THE BIDDER

I/We_____
_____(hereinafter referred to as the Bidder) being desirous of tendering for the work under the A.D.C CUM CEO (Z.P) Rohtak tender no. …….. and having fully understood the nature of the work and having carefully noted all the terms and conditions, specifications etc. as mentioned in the tender document, DO HEREBY DECLARE THAT

1. The Bidder is fully aware of all the requirements of the tender document and agrees to accept all terms and conditions of the DNIT
2. The solar modules to be used in the projects under this tender will be manufactured in India.
3. The Bidder is capable of executing and completing the work as required in the tender.
4. The Bidder accepts all risks and responsibilities directly or indirectly connected with the performance of the tender.
5. The Bidder has no collusion with other Bidder, any employee of A.D.C CUM CEO (Z.P) Rohtak or with any other person or firm in the preparation of the bid.
6. The Bidder has not been influenced by any statement or promises of A.D.C CUM CEO (Z.P) Rohtak or any of its employees, but only by the tender document.
7. The Bidder is financially solvent and sound to execute the work.
8. The Bidder is sufficiently experienced and competent to perform the contract to the satisfaction of A.D.C CUM CEO (Z.P) Rohtak.
9. The information and the statements submitted with the tender are true.
10. The Bidder is familiar with all general and special laws, acts, ordinances, rules and regulations of the Municipal, District, State and Central Government that may affect the work, its performance or personnel employed therein.
11. The Bidder has never been debarred from similar type of work by A.D.C CUM CEO (Z.P) Rohtak and or Government undertaking/ Department.
12. This offer shall remain valid for acceptance for 12 Months from the date of opening of the tender.
13. The Bidder gives the assurance to execute the tendered work as per specifications terms and conditions.
14. The quote to supply the goods and materials specified in the underwritten schedule in the manner in which and within the time specified as set forth in the conditions of contract at the rates given in the financial bid.

Date **(Signature of Bidder)**

with SEAL

PROFORMA-III

GENERAL PARTICULARS OF BIDDER

1.	**Category under which bid is applied** a) Maufacturer b) MNRE Channel Partner c) System Integrator	
2.	**Old Firm or New Firm**	
3.	Name of firm	
4.	Postal Address	
5.	Telephone, Telex, Fax No	
6.	E-mail	
7.	Web site	
8.	Name &designation of the authorized signatory to whom reference shall be made	
9.	Present activities/business of the firm i.Module Manufacturer ii. Battery Manufacturer iii.PCU manufacturer iv) System Integrator v) New firm	
10.	Type of organization - Private Ltd. Company - Public Ltd. Company - Other category	
11.	Registration number TIN No PAN No Any other	
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 ever been debarred by any Govt. Deptt. / Undertaking for undertaking any work?	
15.	Monthly supply capacity	
16.	Name of firms with whom tie-up has been made	a. With…… for…….. b. With…… for…….. c. With…… for……..
17.	Makes of components offered for the system	
	a.	
	.b.	
	c.	
18.	Name of the any close/near relative working in Renewable Energy Department, Haryana or A.D.C CUM CEO (Z.P) Rohtak	Name Designation Place of Posting Relationship
19.	Are you is your firm Haryana based Manufacturing Micro & Small Enterprises (including Khadi & Village Industries),	
20.	Any Other Information	

PROFORMA-IV

FINANCIAL BID

(Rate per watt of rooftop grid connected solar power plant with five years warrantee of complete systems FOR destination including transportation, packaging, installation, VAT, CST, Octroi etc).

Sr. N.	Description	Capacity in kWp	Unit Rate (Rs/Wp) in words	Unit Rate (Rs/Wp) In figures
1	Design, Engineering, Manufacturing, Storage, Civil Work, Supply, Erection, Testing & Commissioning including maintenance for a period of 5 years including Power Evacuation System and cost of replacement of all the parts, covered under Guarantee period for a period of 5 years from the date of commissioning of Rooftop solar PV system in various cities in State of Haryana	5 Kwp		
2		10 Kwp		
3		50 Kwp		
4		100 Kwp		
5				

Date……..

Place……

Business Address

……

……

……..

Signature……

Name……..

Designation……..

Company Stamp……

Annexure-II

Check list of Documents to be Submitted

(The following information/documents are to be submitted by the Bidders along with the BID)

S.No.	**Particulars**	**Submitted or Not** **(Yes/No).**
1.	Test certificate (s) of system in the name of the bidder/Manufacturer as per MNRE standards in support of eligibility as Manufacturer a. Solar Module b. PCU/Inverter	
2.	**Tie up certificates** a. Solar Module b. PCU/Inverter	
3.	**Proforma-I about** average annual turnover of the bidder in the last three financial **duly signed by CA** **Or** Bank's Solvency Certificate	
4.	Copy of valid CST/ State VAT/TIN registration certificate.	
5.	**Proforma-II (D**eclaration about debarring and acceptance of all terms & conditions of DNIT on the letter head of the bidder)	
6.	Bidders details in **Proforma III**	
7.	Price bid in **Proforma IV**	
8.	Any other, pls specify	