

Tender

For

Design, Supply, Installation & Commissioning

Of

Grid Connected Solar Photovoltaic
Ground mounted Power Plant

Of

70Kwp Capacity At

Jaipur, Rajasthan

On

Total Turn Key Basis

Tender Notice No.: ILD/SPV/JAIPUR /2018-19
Date: 14-08-2018

ISSUE LETTER OF TENDER DOCUMENT

FOR

Design, Supply, Installation & Commissioning of Grid Connected Solar Photovoltaic Roof Top Power Plant of 70KWP at ILD, Rajasthan On Total Turn Key Basis.

This tender document set is issued to: _____

Name of the Tenderer: _____

Address of the Tenderer: _____

The fee for this set of tender documents is Rs 5,000 /- (Rupees Five Thousand only)

Date of sale of Tender document vide receipt No _____.

EXECUTIVE DIRECTOR
INSTITUTE OF LEADERSHIP DEVELOPMENT

Institute of Leadership Development.

6/2, Keshav Vidyapeeth Road, Jamdoli, Jaipur,
Rajasthan 302031

No. ILD/SPV/Jaipur /2018-19

Dated: 14-08-2018

Sealed tenders are invited from experienced confide manufacturers and EPC contractors of Solar Photo Voltaic Roof top Power Plant for “**Design, Supply, Installation & Commissioning of Solar Ground mounted Power Plant of 70KWp Capacity at Jaipur, Rajathan On Total Turn Key Basis**” at jaipur, Rajathan. Tender form with terms and conditions can be obtained from www.ildindia.org online only, tender fee can be submitted along with technical bid envelopment I, by Demand Draft of Rs. 5,000/- only in favor of Institute of Leadership Development, payable at Jaipur, Rajasthan.

EXECUTIVE DIRECTOR
INSTITUTE OF LEADERSHIP DEVELOPMENT

1. LAST DATE AND TIME OF SALE OF TENDER: 12.00 noon 28th August, 2018
FORM
2. DATE & TIME OF PRE-BID MEETING : Queries can be sent on email till 21st
August, 2018 to deepak.chaturvedi@ildindia.org
3. LAST DATE & TIME FOR SUBMISSION OF DULY FILLED TENDER FORM (Technical &
Financial bid in separate envelopes): Upto 3.00 p.m. on 28th August, 2018
4. DATE & TIME FOR OPENING OF : 4.00 p.m. on 28th August, 2018
THE TENDER (Technical bid only)
5. EMD (to be deposited with the tender : Rs.1,00,000/- (Rs. One Lac only)
in the technical bid) By Demand draft only favor of
ILD payable at Jaipur, Rajasthan.

The detailed terms and conditions of the tender are contained in the Tender document.

EXECUTIVE DIRECTOR
INSTITUTE OF LEADERSHIP DEVELOPMENT

Tender Document for Design, Supply, Installation & Commissioning of Grid connected Solar Ground mounted Power Plant of 70 KWp Capacity at ILD Jaipur, Rajasthan On Total Turn Key Basis

Note: The Tender form is available on website www.ildindia.org

Institute of Leadership Development

6/2, KeshavVidyapeeth Road, Jamdoli, Jaipur, Rajasthan 302031

Fax: 0141-7154215, E-mail: info@ildindia.org, deepak.chaturvedi@ildindia.org

No. ILD/SPV/Jaipur /2018-19

Dated: 14-08-2018

M/s. _____,
_____,
_____,
_____.

Sub: Tender document for “For Design, Supply, Installation & Commissioning of grid connected Solar Ground mounted Power Plant of 70KWP Capacity at Kutch, Rajasthan On Total Turn Key Basis”

Ref: Your request letter No.	dated	for issue of tender document.

Dear sir,

We thank you for evincing interest in the tender floated by us. The tender document along with technical specification is enclosed which is to be returned duly sealed and signed on each page. We wish to emphasize few pertinent points concerning the tender: -

1. There is an Eligibility and Qualification Criterion prescribed in the tender document. Tenders from firms fulfilling the Eligibility and Qualification Criterion will only be considered for price bidding. It is, therefore, of utmost importance that all documents establishing your eligibility are submitted as per the check list given. Non-receipt of the documents with the tender would be construed as you are not fulfilling the eligibility criterion and such tenders are liable for no further consideration / evaluation.
2. All the terms & conditions, Special as well as General are important.
3. Each tenderer is required to provide complete address, phone no. etc. against General Condition No.2.8 of the tender document failing which the tender is liable to be treated as incomplete.
4. The tender must be submitted in two envelopes method as specified in special note i.e.:-
 - (i) **The first envelope of part –I:** This shall contain “Tender Fee” and “EMD” Demand Draft
 - (ii) **The Second envelope of part-I –** This shall contain: -
 - A. Sealed & signed complete tender document (except for Price Bid) along with specifications.
 - B. Required documents/papers towards eligibility & qualifications criterion.
 - C. All other requirements as mentioned in the tender document.

Tender Document for Design, Supply, Installation & Commissioning of Grid connected Solar Ground mounted Power Plant of 70 KWp Capacity at ILD Jaipur, Rajasthan On Total Turn Key Basis

(iii) **The Third envelop of Part II** : Financial bid is to be submitted in Envelop III. The financial bids will be opened only in respect of those who qualify in the technical bid.

Thanking You,

Your Faithfully

EXECUTIVE DIRECTOR
INSTITUTE OF LEADERSHIP DEVELOPMENT

TENDER FORM

FOR

“For Design, Supply, Installation & Commissioning of Solar Ground mounted Power Plant of 70KWP Capacity at Jaipur, Rajathan on Total Turnkey Basis”

AT

ILD JAIPUR, RAJATHAN

(Technical Bid to be submitted in two envelopes & Commercial bid to be submitted in the third envelop)

Institute of Leadership Development

6/2, KeshavVidyapeeth Road, Jamdoli, Jaipur,
Rajasthan 302031

No. ILD/CFP/Kutch /2018-19

Dated: 14-08-2018

TENDER NOTICE

Sealed tenders are invited from experienced confidemanufacturers of solar plant and its equipment for "Design, Supply, Installation. Testing and Commissioning of 70 KW solar plant on Total Turnkey Basis" each at ILD, Rajasthan. Tender form with terms and conditions can be obtained from www.ildindia.org Tender fee of Rs. 5000/- DD form in favour of Institute of Leadership Development, payable at Jaipur should be submitted along with technical bid documents and financial bid in envelop, Further details can be obtained from our website: www.ildindia.org

1. LAST DATE AND TIME OF SALE OF TENDER FORM	12.00 noon 28/08/2018
2. . DATE & TIME OF PRE-BID MEETING	Queries can be sent on email till 21/8/2018
3. LAST DATE & TIME FOR SUBMISSION OF DULY FILLED TENDER FORM (Technical & Financial bid in separate envelopes)	3.00 p.m. on 28/8/2018
4. DATE & TIME FOR OPENING OF THE TENDER (Technical bid only)	4:00 PM 28/8/18

5. EMD (to be deposited with the tender in the technical bid)

Rs.1,00,000/- (Rs. One Lac Only)
By Demand draft only in favor of
ILD, payable at Jaipur, Rajasthan.

The detailed terms and conditions of the tender are contained in the Tender document.

Phone No. Mobile No. Fax No.

Email:.....

Website:.....

Tender Document for Design, Supply, Installation & Commissioning of Grid connected Solar Ground mounted Power Plant of 70 KWp Capacity at ILD Jaipur, Rajasthan On Total Turn Key Basis

Contact Person:

1. Name and full address of the firm Submitting the Tender (In block letters):

2. Address :

3. Income tax PAN no. :

4. Last 5 years Income Tax clearance or returns certificates : Either in original or photocopy duly attested are to be enclosed

5. Status of tenderer (tick mark only) : Individual/ HUF/ firm/ company (Specify the details in Enclosed section– I)

6. Earlier experience in this field (if any) : Enclose the documents

7. Name of the person/s authorized to negotiate and sign the contract (Designation / status in the firm) : An attested photocopy of power of attorney issued by all partners/director in favor of nominated person to be encl.

8. The tender fee of Rs.5,000/- (Rs Five Thousand only) DD has been deposited vide DD No no. _____ dated _____.

10. I / We agree to abide by all the terms & conditions mentioned in the Tender Notice issued by the Chairman ILD,Jaipur and the other conditions annexed with the tender form, all the pages of which have been signed by me / us in token of my / our acceptance of the terms & conditions mentioned therein.

- 11.

The EMD deposited vide demand draft no.		dated	Issued by
Bank Name	EMD	of Rs. 1,00,000/- (Rs. One Lac Only) in favor of INSTITUTE OF LEADERSHIP DEVELOPMENT, Jaipur to cover earnest money (No interest will be payable on EMD)	

12. Details of the Bankers:

Tender Document for Design, Supply, Installation & Commissioning of Grid connected Solar Ground mounted Power Plant of 70 KWp Capacity at ILD Jaipur, Rajasthan On Total Turn Key Basis

13. **VALIDITY:** The validity of offered rate will be 180 days from the date of opening / final bid (withdrawal of offer with in which by me / us shall to be forfeiture of the EMD).
14. **COMPANY PROFILE:** The tenderer must enclose their company profile and financial status (Enclose latest balance sheet, current assets / liabilities, working capital) along with tender form. It should also include details like location of production unit, make & capacity of production and service equipment's, technical manpower and other facilities available.

Important Notes:

1. Please do not change the format/language and cut/add any items otherwise the tender would be rejected.
2. Proofs and supporting documents of all the points must be enclosed and filled in the checklist.
3. Any clarification w.r.t. tender's terms & conditions can be obtained during office hours on all working days from this office prior to submission date of tender. All clarifications can be sought only in written by email, post and fax. Please note that we need three working days minimum to revert on such queries.
4. All rates quoted must be for destination.
5. Rates in "Financial Bid" as per annexure-1 figures. shall be written both in words and in. There should be not be errors and or made clearly overwriting correction if any should be and initialed with date.
6. Tenderer has to submit the technical bid and price bid separately in sealed envelopes super scribing with technical bid and price bid.
7. EMD and all required enclosures along with duly signed general terms & special terms & conditions should be submitted along with "Pre- Qualification Bid".

**EXECUTIVE DIRECTOR
ILD, JAIPUR,
RAJASTHAN**

1.0 SPECIAL NOTES – SECTION- I

1. EARNEST MONEY:

The tenderer is required to submit EMD as mentioned in the tender document in a separate envelop only in form of demand draft in favor of ILD Jaipur, Rajasthan

2. BIDS IN TWO PARTS:

Bids are required to be submitted in two parts - Part-I & Part-II as described below:

- 2.1 The first part (Part-I) of the bid shall contain 2 separate sealed envelopes. In one envelope EMD and tender fee in form of DD as specified shall be placed. This envelope should be super-scribed as "Part-I EMD only". The second envelope of the first part shall contain technical bid only. The envelope should be duly sealed and super-scribed as "Part-I Technical Bid only". At the time of the opening of the tender first EMD DD envelope shall be opened and EMD shall be verified in accordance to tender If EMD DD and Tender fee DD is not enclosed in a separate envelope and not found in accordance to tender document the tender of such party shall be rejected summarily.
- 2.2 The second part (Part-II) shall be placed as commercial bid and that will be submitted in Envelop III.
- 2.3 After verification of EMD DD and Tender Fee Deposit Technical bids shall be opened and EMD details & technical details read out to the bidder's representatives. Price bids shall not be opened immediately. After scrutiny of the technical bids, the clarifications, if any, will be obtained from the bidders during the technical discussions. Normally one representative of participating bidder will be allowed. However, a bidding company may seek permission for more personnel.

ELIGIBILITY & QUALIFICATION CRITERION:

3. The information required for Eligibility & Qualification Criterion should be provided by the tenderer in the Criterion sheet at Page No. (iii) of Special Note and formats prescribed under Section I, Section II (Schedule I and Schedule II), Section III by enclosing order copies, performance certificates and other relevant documents in support of their version. Incomplete information & documents or information not furnished in the prescribed formats will make the tender liable for rejection without any further reference to the tenderer. It is therefore enjoined upon all tenderers to furnish complete information in the Prescribed formats with supporting documents in the very first instance.
4. The tenderers are advised to depute their authorized representative for the technical discussions on the date and time as informed by the ILD. The bids of the tenderers, who fail to depute their representative as above shall be liable for rejection.

6. Technical & Financial Bid Opening:

On 28/08/2018 only technical bids will be opened in front of representatives of respective bidders. Financial bid of technically qualified bidders will be opened within 10 days of opening of technical bids and all the tenderers will be informed accordingly. In case of technical evaluation exceeding 10 days all the tenderers will be informed accordingly.

2.0 CHECK LIST

To ensure that your offer submitted to ILD is complete in all respects, please go through the following checklist and tick mark for the enclosures attached with your offer:

Sr. No	Description	Attached	Page No. if any attached
1	General Information about the bidder as per Annexure - 1		
2	Earnest Money Deposit in the prescribed form		
3	Tender Document Fee in the prescribed form.		
4	The original document duly signed and sealed on every page, as a confirmation of acceptance of the terms and conditions of the document		
5	A copy of GST Number, Permanent Account Number (PAN)		
6	A copy of EPF registration number and latest challan		
7	Relevant IEC certificates for SPV panels, PCU and all the other, machineries valid upto 23 September 2018.		
8	Details of similar work done in last three years along with copies of the orders and certificates from the customers, as per the Offer Evaluation Criteria and as per Annexure – 2 of the tender document		
9	Details of Technical staff available (Brief Bio-data of key Personnel be given) as per Annexure – 3 of the tender document.		

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10	Name and address of dealers/ distributors/ service stations in Rajasthan along with copy of agreements.		
11	Declaration of the Bidders about any relatives working with LD as per Annexure – 4 of the tender document		
12	Deviation, if any, from the specifications, terms and conditions etc. (Annexure – 5)		
13	List of Plant and Machinery (Annexure-6)		
14	For Turnover of company for last 3 years 2014-15, 2015-16 and 2016-17 practicing CA/CS certificate attached.		
15	SPV instruction manual copy		
16	All the pages of tender documents/ attachments numbered and entire document spiral bound.		

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DETAILS OF EARNEST MONEY DEPOSIT AND TENDER FEE ATTACHED	
SN	DESCRIPTION
1	<p style="text-align: center;">Earnest Money Deposit</p> <p>Earnest Money Deposit of Rs.submitted in the form of Demand Draft/ Drawn on _____ Bank, _____ Branch, bearing DD/BC No. _____ dated _____ _____ is attached herewith.</p>
2	<p style="text-align: center;">Tender Document Fee</p> <p>Tender Document Fee of Rs.submitted in the form of Demand Draft/ _____ Banker's Cheque, drawn on _____ Bank, _____ Branch, bearing DD/BC No. _____ dated _____ _____ is attached herewith.</p>

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Annexure 1: GENERAL INFORMATION ABOUT THE BIDDERS

1	Name of the Company	
2	Postal Address	
3	Telephone nos.	
	Fax no.	
4	E-mail address and URL	
5	Type of Company	Proprietorship/ Partnership/ Private Limited/ Public Limited (Pl. tick appropriately)
	Attach Proof of Company Registration Along with a copy of The Partnership Deed/Article of Association and Memorandum of Understanding	
6	Name and designation of the representative of the Bidders to whom all reference shall be made to expedite technical co-ordination.	
7	Entrepreneur Memorandum Part 2 registration with DIC/NSIC Registration no./ CSPO registration no./DGS&D registration no.	
8	EPF registration number	
9	Factory Address	
10	Factory Telephone/Fax no.	
11	Factory e-mail address	
12	Floor area of the factory	

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13	Manufacturing facilities (a list of machinery be attached as per annexure - VI)	
14	Details of technical staff available. Please furnish Information as per Enclosed Annexure 3.	
15	Details of workmen on muster roll Skilled/ unskilled. (attach copy of muster roll)	
16	List of components manufactured by the company at their factor or MNRE certification.	SPV panel/ PCU/ MNRE Channel Partner
17	List of components sourced List of components sourced	
18	Has the company/firm to pay arrear of income tax? If yes upto what amount	
19	Turnover of company for last 3 years 2014-15, 2015-16, 2016-17. Please attach practicing CA/CS certificate.	2015-16 Rs.
		2016-17 Rs.
		2017-18 Rs.
20	Has any Govt. Dept./ Under-taking Ever debarred the company/ firm from executing any work?	

It is certified that the information provided above is true to the best of my knowledge and belief. If any information found to be concealed, suppressed or incorrect at later date, our tender shall be liable to rejected and our company debarred from executing any business with ILD.

Date:

Sign. and Stamp of the Bidders

3.0 INSTRUCTIONS TO THE BIDDERS

- A.1** Offer shall be submitted complete in all respects with all schedules, documents etc. of the tender document and shall be received in ILD office upto the date and time as mentioned in the tender form.
- A.2** ILD reserves the rights to reject any or all the Offers or accept any Offer in total or in part or may divide the work among various Bidders, without assigning any reason thereof.
- A.3** Tenders shall be accompanied with requisite Earnest Money Deposit (EMD). Any Tender not accompanied by adequate Earnest Money Deposit (EMD) shall be disqualified and no further consideration shall be given to such Tender.
- A.4** Earnest Money Deposit (EMD) of unsuccessful Bidders shall be refunded upon finalization of tenders. Earnest Money Deposit of successful Bidder will be retained as Security Deposit.
- A.5** If any information provided by the Bidders is found to be concealed, suppressed or incorrect at later date or during finalization of the tender or the Bidders withdraws their offer during finalization of the tender, the tender shall be liable to be rejected and company shall be debarred from executing any business with ILD for the period of 3 years and the EMD of such Bidders shall be forfeited.
- A.6** Validity of the offer shall be at least up to **October 31, 2018**. Without this validity the Offers shall be rejected.
- A.7** Before submission of the Offer, Bidders are required to make themselves fully conversant with the scope of the work, technical requirements and specifications, etc., so that no ambiguity arises on a later date in this respect.
- A.8** All information in the Offer shall be in English. Information in any other language shall be accompanied by its translation in English. Failure to comply with this may disqualify the Bidders.
- A.9** If the Bidders finds discrepancies in, or omissions from the specifications or other documents or if he is in doubt as to their meaning, he shall at once intimate ILD and obtain clarification in writing within 10 days from the date of announcement of tender, prior to submitting his Offer. Any representation/ requests after 10 days from the date of announcement of tender shall not be entertained.
- A.10** Any approach from the Bidders, his representative or his agent to influence the decision on the Offer, officially or otherwise, shall render the Offer liable to be summarily rejected.
- A.11** Physical offer shall be submitted in sealed envelopes super scribed with as" Installation of Grid Connected Solar Photovoltaic System at Institute of leadership Development". All the papers of Tender documents duly signed shall be submitted in the envelope.
- A.12** Erases and other changes shall be initialed by the person/persons signing the Offer.
- A.13** Each page of the Offer document shall be signed and stamped by the Bidders as a token of acceptance to terms and conditions mentioned herein.

- A.14** Offers of only those firms or individuals, who are themselves technically capable and sound for providing such services and who give satisfactory evidence of such experience shall only be considered.
- A.15** The general technical requirements mentioned are mainly for the guidance of the Bidders. These requirements are not intended to preclude ingenuity of designs or other improvements. If the Bidders proposes any deviation from these requirements those shall be considered provided they are necessary either to improve the utility, performance and efficiency or to secure over all economy. The Bidders shall give a separate list containing points of deviations in his offer from the specifications asked for.
- A.16** The Bidders shall declare the name of the employee of ILD and his relationship with him in case any employee of ILD is a relative of the Bidders.
- A.17** In the event, the successful Bidders fails to accept the work order within specified time or withdraws his offer within the validity period or fails to accept the order for any reason whatsoever, then the earnest money deposited by the Bidders shall be forfeited by ILD.
- A.18** ILD reserves the right to accept any offer based on its merits and ILD is not bound to place the order with the party having submitted the lowest offer. Thus party merely on the ground that their financial offer is lowest, does not necessarily qualify them for receiving the order.
- A.19** Only Notarized copies of documents will be submitted in support of claims made by the party and party shall bring the original copies of documents for verification by ILD officials. Details of similar work done only in last three years along with copies of the orders and certificates from the customers to be attached with the tender.
- A.20** ILD, at its discretion, may award the work to more than one party, if required.

4.0 GENERAL TERMS AND CONDITIONS

B-1) Under this tender, unless the context otherwise requires:-

ILD shall mean the Executive Director or his representative of Institute of leadership Development and shall include his successors and assignees.

The Bidders shall mean the Bidders/ Associate whose Offer shall be accepted by ILD and shall include such Bidders/ Associate heirs, legal representatives, successors and assignees. Associate shall mean the business associate authorized and having valid agreement with Public Sector Enterprise having ten years' experience in solar energy field with office in the State of Rajasthan. The offer shall be considered on behalf of the Public Sector Enterprise and authority letter for submitting the tender shall be furnished. If the Public Sector Enterprise directly participates in the tender, Associate's offer shall not be considered. Consortium or Joint Venture is not allowed in this tender.

B-2) The Bidders shall be deemed to have carefully examined all the papers, drawings, etc. attached in the contract. If he has any doubt as to the meaning of any portion of any condition/ specification, etc. he shall before signing the contract submit the particulars thereof to ILD in order that such doubts are removed.

B-3) The work, shall be completed within the completion period as mentioned in the work order, failing which penalty at the rate of 1 % per week or part of a week, subject to maximum of 10 % of order value shall be imposed as time is the essence of the contract. If the Bidders fails to complete the work within ten weeks after scheduled date, ILD reserves the right to cancel the order. This excludes delay in the completion of the work due to unforeseen reasons beyond the control and without fault and negligence of the Bidders including (but not restricted to) act of God or public anomie action of Government in its sovereign capacity, floods, epidemics, strikes, lockouts, fires and accidents. In the event of any of the aforesaid contingencies ILD may be promptly kept informed by the Bidders by Fax/Telex/Telegram followed by confirmation in writing with documentary proof within fifteen days of commencement and cessation of Force Majeure circumstances. Under such circumstances reasonable extension of time shall be granted by ILD.

Application for such extension must be made before the due date of completion of work as per work order. In the event of termination of the work order, ILD shall be at liberty to get the remaining part of the work done through any other agency/Bidders in the manner and on the terms it thinks proper. If the cost of executing the work as aforesaid shall exceed the balance due to the Bidders, and the Bidders fails to make good the deficiency, ILD may recover it from the Bidders in any lawful manner.

B-4) The Bidders shall have to comply with all rules, regulations, laws and bylaws enforced by local and State Govt. and also the organization in whose premises the work has to be done.

B-5) The Bidders shall not, without the consent in writing of ILD, transfer, assign or sublet the work under this contract or any substantial part thereof to any other party.

B-6) If the Bidders neglects to execute the work with due diligence and expedition or refuses or neglect to comply with any reasonable orders within two days' notice given in writing to the Bidders and if he

Tender Document for Design, Supply, Installation & Commissioning of Grid connected Solar Ground mounted Power Plant of 70 KWp Capacity at ILD Jaipur, Rajasthan On Total Turn Key Basis

fails to comply with the notice, then in such a case ILD shall be at liberty to get the work or any part of it, executed through any other agency/Bidders in the manner and on the terms it thinks proper. If the cost of executing the work as aforesaid shall exceed the balance due to the Bidders, and the Bidders fails to make good the deficiency, ILD may recover it from the Bidders in any lawful manner.

- B-7)** ILD shall have at all reasonable time access to the works being carried out by the Bidders under this contract. All the works shall be carried out by the Bidders to the satisfaction of ILD.
- B-8)** Any question, dispute or difference whatsoever arises between ILD and Bidders, in connection with the work order, except as to matters, the decision for which has been specifically provided, either party may forthwith give to the other notice in writing of existence of such questions, dispute, difference and the same shall be referred to the sole arbitration of a person nominated by Director ILD. This reference shall be governed by Indian Arbitration Act prevailing at the time of dispute and the rules made there under. The award in such arbitration shall be final and binding on all the parties. Work under the agreement shall continue during the arbitration proceedings unless the ILD or the Arbitrator directs otherwise.
- B-9)** ILD may at any time by notice in writing to the Bidders either stop the work altogether or reduce or cut it down. If the work is stopped altogether, the Bidders shall only be paid for work done and expenses legitimately incurred by him as on preparation of the execution of the work upto the date on which such notice is received by him. Such expenses shall be assessed by ILD whose decision shall be final and binding on the Bidders. If the work is cut down the Bidders shall not be paid for the work as so cut down, but in neither case shall be paid any compensation what so ever for the loss or profit which he might have made if he had been allowed to complete all the work included in the contract.
- B-10)** Prior to dispatch, the materials may be inspected and tested by ILD at the Bidder's works. Bidders shall inform ILD for such inspection at least 7 days in advance before the probable date of dispatch.
- B-11)** The system supplied or installed shall be guaranteed by the Bidders for a minimum period of **five years** in regard to quality of material, workmanship, performance, efficiency, installation, etc. Defects developed in the system within guarantee period, shall be rectified by the Bidders at his own expense promptly. In case the defects are not rectified within 2 days of the receipt of the complaint by the Bidders, ILD shall have full liberty to remove such defect or undertake such repairs as may be necessary to restore the system in working condition. The expenditure so incurred by ILD shall be deducted from Bidder's pending claims, security, etc. and if necessary may be recovered in other mode provided under the law. In the event of failure of the complete system, if necessary, the whole system shall be replaced by the Bidders promptly.
- B-12)** Notices, Statements and other communications sent by ILD through registered post or telegram or telex or to the Bidders at his specified address shall be deemed to have been delivered to the Bidders.
- B-13)** The work shall be carried out by the Bidders with prior approval of ILD. Work carried out without ILD's approval shall not be accepted and the ILD shall have right to reject it and to recover the cost as so incurred, from the Bidders.
- B-14)** All equipment/material shall be suitably packed for transport/carriage at site and outdoor storage during transit **as per best industrial practices and appropriate standards**. The Bidders shall be

responsible for any damage to the equipment during transit due to improper or inadequate packing. The cases containing easily damageable material shall be very carefully packed and marked with appropriate caution symbols i.e. 'FRAGILE, HANDLE WITH CARE' etc. The contents of each package shall bear marking that can be readily identified from the package list and packing shall provide complete protection from moisture, termites and mechanical shocks during shipment/transportation to site. Adequate protection must be provided for outdoor storage at site in tropical humid climate, wherever necessary proper arrangement for attaching signs for lifting shall be provided and all packages clearly marked with gross weight, signs showing 'UP' and 'DOWN' sides of boxes, contents of each package, order no. And date, name of the plant/equipment to which the material in the package forms the part of, and any handling and unpacking instructions considered necessary. The Bidders without any extra cost shall supply any material found short inside intact packing case. The Bidders shall ascertain prior to shipment, from concerned authorities, the transport limitations like weight and maximum allowable package size for transportation. All packing cases and packing material shall become the property of the purchaser.

- B-15)** The Bidders shall provide one copy of the instruction manual and routine maintenance manual in Rajasthani with each item supplied or installed. These manuals shall contain all the relevant details and drawings required for proper maintenance of the system supplied or installed.
- B-16)** The Bidders shall not display the photograph of the work and shall not take advantage through publicity of the work without written permission of ILD.
- B-17)** The inspection as mentioned in clause No. B-10 by ILD's representative shall not relieve the Bidders from full responsibility of completing the work confirming to the requirement of this contract.
- B-18)** Conditional tenders shall not be accepted.

5.0 GUIDELINES and ELIGIBILITY CRITERIA FOR BIDDERS

- 1. SCOPE OF WORK:** The work is to be carried out on '**Turnkey Basis**' which includes survey, design, supply of SPV system with all accessories and equipment, net metering, installation, testing, commissioning and maintenance services for 5 years, of the ILD identified sites with free replacement warranty on spare parts against manufacturing defects for five years. It also includes obtaining concern DISCOM and Chief Electrical Inspector (CEI) approvals. i.e.
- a) Survey of identified site of ILD.
 - b) Preparation of Detailed Project Report (DPR) of the proposed Proposal of SPV Power Plant.
 - c) Obtaining No objection certificate/ net metering connectivity agreements from concerned DISCOM for grid connectivity and CEI's approval.
 - d) The work covers Design, supply, installation, commissioning and comprehensive maintenance for FIVE years, including grid connectivity charges, meter charges etc.
 - e) Design, supply, civil work, erection, testing and commissioning of SPV grid connected Power Plant as per schedule given in the work order.
 - f) Installation of solar meter and bi-directional meters along with second line of protection in the system such as no volt relay etc. as per discom rule.
 - g) Installation of Remote Monitoring facility along with necessary dongle etc. for the period

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of 5 years.

2. ELIGIBILITY:

- Bidders Manufacturing Solar PV modules or PCU manufacturers are eligible to apply
 - EPC contractors who have installed similar systems in the past are eligible to apply. MNRE channel partners with a rating of 1A/1B and 2A/2B for grid connected solar Ground mounted powerplants would be given preference to supply and install the system if they fall under the criteria mentioned in Chapter 5 Clause-7.
3. The Bidders shall submit the list and pictures of the manufacturing and testing facilities and submit an undertaking that if the details provided by the Bidders are in deviation with the provision of the scheme, it will call for disqualification. If considered necessary, a team of ILD official may visit the facilities of the Bidders for verification. Companies which are engaged only in assembly of solar PV systems with above mentioned bought out items will not be eligible for supply of systems under this scheme.
4. It is mandatory to have valid IEC certificates for Solar panels, PCU as mentioned in the specifications, valid till 30th September, 2018. Copies of such certificates shall be attached /uploaded with the tender. Tenders received without test certificates as above will be rejected out-right and no correspondence will be entertained in this regards.
5. The PV modules must be tested and approved by one of the IEC authorized test centers.
6. Test certificates for the BOS items/ components can be from any of the NABL/ BIS Accredited Testing-Calibration Laboratories/ MNRE approved test centers.
7. The Bidder including registered MNRE Channel Partner for Grid Connected Solar PV systems shall have the following physical and financial strength for the respective system they are bidding for:

SN	Item	Average annual financial turnover during last three years(in Crores)	Aggregate experience of successfully completing on-grid/off-grid/solar pumping systems till 31 st July 2018	work order and certificates of user agency regarding past work done satisfactorily to be submitted along with tender.
1	Grid connected SPV Ground mounted System 70 KW	25 Cr.	5 MW	Minimum single order valued at Rs. 2 Crores executed within the last 3 years for solar on-grid/off-grid/solar pumping systems

** ILD shall be free to cross check/ verify the systems with beneficiaries and at site for its satisfactorily working. If found contrary, the bidders credentials for such systems shall not be considered.

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8. **SPECIFICATIONS:** The specifications of SPV systems, for which tenders are invited, are annexed. The notarized Test Report(s) of each of the components/ systems mentioned shall be uploaded/ attached with the tender.
9. **AFTER SALES SERVICES:** Successful bidder shall depute a service engineer within 72 hours of raising any complaint by ILD staff. Failing which, ILD is within its rights to get the system repaired at the risk and cost of the supplier.
10. **LOI:** Fax Letter of Intent (LOI) shall be issued to the shortlisted Bidder indicating the quantity allocated to them and the security deposit amount to be deposited by them with ILD. Shortlisted Bidder will be required to deposit the requisite security deposit within one week of issuance of Fax Letter of Intent, failing which the letter of intent will stand as cancelled. The order will be issued to the shortlisted Bidder only after receipt of requisite security deposit.
11. **TIME SCHEDULE:** It is very critical to complete the work as per the order given by the agency; so as to complete the work within three months from the date of order. In the event of failure to supply system as per order, will lead to forfeiture of the Security Deposit up to 100% and will lead to disqualification of the Bidders for transacting business with ILD for at least three years or the time duration as may be decided by the Director, ILD.
12. The Bidder shall arrange to provide an SPV instruction manual. The Bidders shall also arrange to train the maintenance team about routine maintenance procedure. **Copy of the same be submitted to ILD with the physical documents.**
13. **SPECIFICATIONS:** The specifications of SPV systems, for which tenders are invited, are annexed. The notarized Test Report(s) of each of the components/ systems mentioned shall be uploaded/ attached with the tender.
14. **AFTER SALES SERVICES:** Successful bidder shall depute a service engineer within 72 hours of raising any complaint by ILD staff. Failing which, ILD is within its rights to get the system repaired at the risk and cost of the supplier.
15. **LOI:** Fax Letter of Intent (LOI) shall be issued to the shortlisted Bidder indicating the quantity allocated to them and the security deposit amount to be deposited by them with ILD. Shortlisted Bidder will be required to deposit the requisite security deposit within one week of issuance of Fax Letter of Intent, failing which the letter of intent will stand as cancelled. The order will be issued to the shortlisted Bidder only after receipt of requisite security deposit.
16. **TIME SCHEDULE:** It is very critical to complete the work as per the order given by the agency; so as to complete the work within three months from the date of order. In the event of failure to supply system as per order, will lead to forfeiture of the Security Deposit up to 100% and will lead to disqualification of the Bidders for transacting business with ILD for at least three years or the time duration as may be decided by the Director, ILD.
17. The Bidder shall arrange to provide an SPV instruction manual. The Bidders shall also arrange to train the maintenance team about routine maintenance procedure. **Copy of the same be submitted to ILD with the physical documents.**
18. **IDENTIFICATION MARK:** Serial Number (identification mark) must be permanently marked on all major components (PCU, Module, Body etc.) of the SPV systems.

19. INSPECTION OF MATERIAL:

The Bidders will offer complete Solar PV Systems for inspection at their works by ILD or its authorized quality inspection agency before dispatch of material to site. Inspection can also be offered at one place in Rajasthan (main distributor's place), where equivalent inspection facilities are available. The call for Pre-Dispatch Inspection for complete material shall include providing IV curves countersigned by manufacturer of panels. ILD may carry out random testing of SPV systems at Bidder's factory for various parameters as per the specifications laid by ILD. Visual inspection shall be carried for 100% of SPV systems. Bidders will intimate to ILD in writing in advance for such inspections. If during the inspection the percentage of rejections exceeds 10% then the whole lot would be rejected. The rejected material is to be replaced with new material as per the specifications. The systems shall be offered for inspection again after necessary rectification. Expenses for such re-inspection shall be borne by the Bidders.

ILD reserves the right to inspect any number of SPV systems, any number of times at the addresses of the beneficiaries given by the Bidders.

20. PAYMENTS :

The payment terms shall be as follows:

- a. 25 % of total order value shall be paid as an advance to the Bidders against submission of bank guarantee of equivalent amount issued by Nationalized Bank, ICICI Bank, IDBI Bank, UTI Bank and HDFC Bank as per the prescribed format of ILD, valid for the period of six months. 60 % total order value shall be released to the Bidders after submission of following necessary documents in duplicate at ILD and after on-site verification/ inspection by ILD and/or its authorized inspection agency/ies as per norms of ILD, for which the claim is received:
 - (i) Bills
 - (ii) Installation certificate duly signed by beneficiary/ ILD official showing its installation date.
- b. Security Deposit shall be released with this 75% payment of the order.
- c. 15% of the order value shall be released to the Bidders against commissioning of system including installation of Solar meter & Bi-directional Meter, Remote Monitoring facility and submission of Performance Bank Guarantee of equivalent amount to 15% of the order value valid for five years. The Bidder shall submit satisfactory Quarterly Maintenance & Servicing Reports in each quarter up to 5 years, failing which the performance Bank Guarantee shall be invoked.

21. In case of any type of misappropriations, cheating or intention of cheating, frauds, irregularities, malpractice, etc. the Director ILD reserves the right to cancel the order without giving reasons thereof and forfeit the security deposit.

22. Rates quoted by the Bidders will be inclusive of taxes, levies, duties, packing, forwarding, freight, insurance, loading unloading, supply, installation, commissioning, **warranties** and any/ all charges for successful Supply and Installation of the system at any locations in the State of Rajasthan and all expenses of marketing, commissions etc

23. The rates quoted by the Bidders will be inclusive of GST or any other taxes applicable for such work. Any escalation in such taxes/ levies during the tenure of the offer/ order will not be paid by ILD and Bidders are advised to take in to consideration any such escalations in the prevailing taxes/levies/duties.

24. During site inspection by ILD staff/ authorized representative, if the systems are found uninstalled

and false report of installation and commissioning is submitted to ILD for claiming payment, Director, ILD is empowered to forfeit Security Deposit up to 100% & to terminate the contract.

25. Bidders are required to quote rates inclusive of Comprehensive Maintenance Contract (CMC) for the period of **five years** for the system. The rates quoted shall be inclusive of charges for providing Routine Maintenance services at the beneficiary's end as per site requirements to ensure smooth and satisfactory performance of the system. Replacement of any components of the system is included in the scope of work of CMC. As per the format given in the bid document quarterly report shall be prepared and submitted to ILD after providing necessary services. The Performance Ratio of Grid Connected Systems shall **be more than 0.70**, and necessary efforts shall be made to achieve it by the bidder. In case the system fails to attain the required Performance Ratio, the system shall be deemed to non-performing and ILD may invoke the entire Performance Bank Guarantees.
26. Training of representative of ILD on the aspect of primary trouble shooting and Do's & Don'ts of the SPV systems, including general operation and maintenance, including lodging complaints & primary reporting.

6.0 TENDER EVALUATION CRITERIA

Offers of only those parties who are found qualifying based of following Tender Evaluation Criteria will be taken in to further consideration and prices of only those parties qualifying based of these criterion will be opened.

COMMERCIAL:

- 1) Earnest Money Deposit and Tender Document Fee in the prescribed form shall be submitted along with the tender.
- 2) The company shall have supplied PV systems in past three years as per clause no. 7 of Chapter no. 5.

TECHNICAL:

- 1) Eligibility Criteria to be fulfilled as per Chapter 5 Clause 7 of this document.
- 2) The Bidders shall have valid test certificates as per required specifications for supply under tender and submit the copy of test reports.
- 3) Offers received from only those parties having adequate infrastructure to manufacture, Market and provide after sales services in the state will be taken in to consideration and offers received from others will be summarily rejected. Documentary evidences in support of the same shall be enclosed with the offer. ILD may visit manufacturing facilities to ascertain the claims made by the Bidders.
- 4) Details of similar work done in last three years along with copies of the orders and certificates from the user agencies shall be submitted along with the Technical Offer as per Annexure – 2 of the Offer Document.
- 5) The party shall have sufficient technically qualified and well-experienced manpower for Manufacturing, Marketing, and Installation and **after sales service** of the systems. Brief bio-data of the key personnel, be enclosed with the offers as per Annexure-3 of the Document.

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GENERAL:

- 1) The party shall have declared, if any relatives working with ILD in Annexure – 4.
- 2) As an acceptance of terms and conditions, the document duly signed and sealed on every page shall be returned along with the offer. Offers not satisfying any of the above-mentioned criteria will be liable for rejection.

Year	Name of the company with full address, phone no, fax and name of contact person	work description (solar Ground mounted systems)	Ref and date of the order	Work order value(year wise for past three years)	Details of order and configuration(quantity in nos and capacity in Kw)
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Annexure 2: Details of similar work experience only in last three years
(Information to be attached with the technical offer)

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2015-16					
2016-17					
2017-18					

- Copies of Work orders along with Work completion certificates shall be attached with this information.
- If necessary, separate sheet may be used to submit the information.

Annexure 3: Details of Technical Staff available with the company for execution of work
(Information to be attached with the technical offer)

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SN	Name	Qualification /Certification	Additional	Experience(years)	Remark

- Copies of Resumes and appropriate certifications shall be attached with this information.
- If necessary, separate sheet may be used to submit the information.

Annexure 4: Declaration
(Strike off whichever is not applicable)

This is to declare that Mr/Ms. _____, employee of ILD at
_____(place), is related to our _____
_____(designation and name).

OR

This is to declare that none of the Proprietors/ Partners/ Directors are having any relatives employed or working with ILD at any of its offices.

Date :

Sign. and Stamp of the Bidders

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Deviation offered to Chapter No, Clause No. of the tender document	Deviation offered
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Annexure 5: DEVIATION SHEET

Any deviations offered from the terms and conditions of the Offer shall be clearly specified below in this sheet. If there are no deviations offered, it shall be clearly mentioned on this page.

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QUARTERLY MAINTENANCE & SERVICING REPORT FORMAT

**1. DETAILS OF SOLAR PHOTOVOLTAIC SYSTEM
INSTALLED at _____ of KW:**

1.	Supplied by	: M/s.	
2.	Date of installation	:	
3.	Servicing period	: From	to
4.	Date of this Report	:	

2. USER PROFILE:

1. Name and address of User:

3. TECHNICAL DETAILS:

1. Module Capacity, make and serial number :
2. Inverter Capacity, make and serial number :

4. CHECK OF THE PRODUCT:

1.	Cleaning of dust from SPV panel	
2.	Interconnection of modules, PCU etc.	
3.	Fuse of distribution boxes, switches	

5. DIFFICULTIES IN OPERATION/ PROBLEM FACED BY USER:

6. DIAGNOSIS DETAILS/ REPAIR ACTION:

7. IS THE SYSTEM WORKING SATISFACTORILY: YES / NO.
(If 'NO', please give the reason & remedies)

8. GENERATION READING IN GRID CONNECETD SYSTEM:

1. Meter reading of Solar Meter(in kWh):
2. Meter reading of Bi-directional Meter(in kWh):
3. Generation of electricity during is quarter(in kWh):

9. PERFFORMACE RATIO OF GRID CONNECTED SYSTEM:

User Name & Signature		Technician's Name & Signature
Date:	(with rubber stamp)	(with rubber stamp)

Appendix I

FORMAT FOR WARRANTY CARD TO BE SUPPLIED WITH EACH SOLAR PV SYSTEM

1. Name & Address of
The Bidders/Bidders of the System
2. Name & Address of Purchasing Agency
3. Date of supply of the system
4. Details of PV Module (s) supplied in the
System Make (Name of the Bidders)
Model
Serial No(s)
Wattage of the PV Module (s) under STC
Warranty valid up to
5. Details of PCU/ Electronics & other BOS items/ cables.
System Make (Name of the Bidders)
Model
Serial
No(s)
Warranty valid up to
6. Designation & Address of the person to be
Contacted for claiming Warranty obligations.

(Signature) Name & Designation Name
& Address of the Bidders/Bidders
(SEAL)

Place & Date:

(During the warranty period State Agencies/users reserves the right to cross check the performance of the systems with the minimum performance levels specified in the specifications).

Annexure 6:List of Plant and Machinery

(To be completely filled by the Bidders)

For manufacturing of Solar PV panels (as applicable)

S. No.	Name of equipment	Date of purchase	Date of calibration	Utility

For manufacturing of PCU (as applicable)

S. No.	Name of equipment	Date of purchase	Date of calibration	Utility

7. TECHNICAL SPECIFICATIONS

The proposed projects shall be commissioned as per the technical specifications given below. Any short comings will lead to cancelation of order in full or part as decided by ILD. The specifications, in the RREC Regulation on Net Metering shall also be applicable.

1. DEFINITION

A Grid Tied Solar Ground mounted 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, solar meter, bi-directional energy meter and switches. PV Array is mounted on a suitable structure. Grid tied SPV system is without battery and shall be designed with necessary features to supplement the grid power during daytime. Components and parts used in the SPV power plants including the PV modules, metallic structures, cables, junction box, switches, PCUs etc., shall conform to the BIS or IEC or international specifications, wherever such specifications are available and applicable.

Solar PV system shall consist of following equipment/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.
- ☐ Solar Meter and Bi-directional Energy Meter

a) SOLAR PHOTOVOLTAIC MODULES:

Approved. **MAKES: Vikram / Waree / Adani**

1.1.1 The PV modules used shall be made in India, as per MNRE requirements. Necessary documents in this regards must be provided to ILD.

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 IEC61730 Part-2- requirements for construction & Part 2 – requirements for testing, for safety qualification or equivalent IS.

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

c) The total solar PV array capacity shall not be less than allocated capacity (kWp) and shall comprise of solar crystalline modules of minimum **310** Wp and above wattage with module efficiency not less than 17.5%. Module capacity less than minimum **310** watts shall not be accepted.

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

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

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

- g) The bidder shall carefully design & accommodate requisite numbers of the modules to achieve the rated power in his bid.
- c) Other general requirement for the PV modules and sub systems shall be the following:
 - I. The rated output power of any supplied module can have tolerance of +5w.
 - 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. I-V curves at STC shall be provided by bidder.

1.1.3. Modules deployed must use a RF identification tag. The following information must be mentioned in the RFID used on each modules (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, I_m , V_m 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) MATERIALS WARRANTIES:

- i. Material Warranty is defined as: The manufacturer shall 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 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.

2. ARRAY STRUCTURE:

- a)** Hot dip galvanized MS mounting structures shall be used for mounting the modules/ panels/arrays. Each structure shall 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 in Rajasthan (150 km/hr). It may be ensured that the design has been certified by a recognized Lab/ Institution in this regard. Suitable fastening arrangement such as grouting and calming shall 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 IS4759, material thickness shall be minimum 2.5 mm.
- d)** Structural material shall be corrosion resistant and electrolytically compatible with the materials used in the module frame, its fasteners, nuts and bolts. Aluminum 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 shall 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 bearing 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 shall be less than 60 kg/m².
- h)** The minimum clearance of the structure from the roof level shall be 150 mm.

2. 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 aluminum /cast aluminum alloy with full dust, water & vermin proof arrangement. All wires/cables must be terminated through cable lugs. The JB's 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 .
- c)** Gasket to prevent water entry. Single /double compression cable glands. Provision of earthling's. It shall be placed at 5 feet height or above for ease of accessibility.
- d)** Each Junction Box shall have High quality Suitable capacity metal oxide varistors (MOVs) / SPDs, suitable Reverse Blocking Diodes. The Junction Boxes shall have suitable arrangement monitoring and disconnection for each of the groups.
- c)** 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

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.

3. **AC DISTRIBUTION PANEL BOARD:**

- a) AC Distribution Panel Board (DPB) shall control the AC power from PCU/inverter and shall 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 shall conform to IEC60947, part I, II and III/ IS60947 part I, II and III.
- c) The changeover switches, cabling work shall 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) Shall 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

6. **PCU/ARRAY SIZE RATIO:**

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

7. **PCU/ Inverter (Approved Makes): ABB/DELTA**

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 output shall be compatible with the grid frequency. Typical technical features of the inverter shall be as follows.

- Switching devices : IGBT/MOSFET

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- Control : Microprocessor /DSP
- Nominal AC output voltage and frequency: 415V, 3 Phase, 50 Hz(In case single phase
- Output frequency : 50 Hz
- Grid Frequency Synchronization range : + 3 Hz or more o Ambient temperature considered : - 20° C to 50° C
- Grid Frequency Synchronization range : + 3 Hz or more o Ambient temperature considered : - 20° C to 50° C
- 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): >95%
- THD: < 3%
- PF : > 0.9

a) Three phase PCU/ inverter shall be used with each power plant system.

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

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

8.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 grid comes into service PV system shall again be synchronized with grid 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 power connection need to be provided, as per regulation.

9.DATA ACQUISITION SYSTEM / PLANT MONITORING:

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

- II. Remote Monitoring and data acquisition through Remote Monitoring System software at the owner /ILD 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 CP. Provision for interfacing these data on ILD server and portal in future shall be kept.

10.METERING:

- a) The solar and bi-directional electronic energy meter (0.5 S class) shall be installed for the measurement of import/Export of energy as per guidance of DISCOM .
- b) 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 ILD before commissioning of SPV plant.
- c) Reverse power relay shall be provided by bidder (if necessary), as per the local DISCOM requirement. Second line of protection such as low volt relay shall be provided with the system as per RREC regulations.

11.POWER CONSUMPTION:

- a) Regarding the generated power consumption, priority need to give for internal consumption first and thereafter any excess power can be exported to grid at APPC.

12. PROTECTIONS:

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

12.1. LIGHTNING PROTECTION:

The SPV power plants shall be provided with lightning & over voltage 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 etcThe entire space occupying the SPV array shall be suitably protected against Lightning by deploying required number of Lightning Arrestors. Lightning protection shall be provided as per IEC62305 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

12.2. SURGE PROTECTION:

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

12.3. EARTHING PROTECTION:

- i. Each array structure of the PV yard shall be grounded/ earthed properly as per IS:3043-1987. In addition the lightning arrester/masts shall also be earthed inside the array field.
- ii. 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.

12.4. GRID ISLANDING:

- i. 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 immediately. 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 Ground mounted 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.

ii. A manual disconnects 4pole isolation switch (RCCB) 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.

13. 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) shall 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 RPVC pipe/ 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 shall be so selected that it shall be compatible up to the life of the solar PV panels i.e. 25 years.

ix. The ratings given are approximate. All the cables required for the plant are to be provided by the bidder. Any change in cabling sizes if desired by the bidder/approved after citing appropriate reasons.

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 2%.

xxi. 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 %.

14.CONNECTIVITY:

The maximum capacity for interconnection with the grid at a specific voltage level shall be as specified in the RREC regulation for Grid connectivity and norms of DISCOM and amended from time to time.

15.DRAWINGS & MANUALS:

i). Two sets of Engineering, electrical drawings and Installation and O&M manuals are to be supplied. Bidders shall provide complete technical datasheets 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.

16.CAPACITY OF SOLAR PV SYSTEM ON THE GROUND MOUNTED:

The Solar PV system on the Ground mounted of the selected buildings will be installed for PV capacity permissible by Discom as per regulation issued by RREC.

17.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.

17) DISPLAY BOARD:

A display board shall be installed in the vicinity of the plantcommunity building, of min. size 4' x 3' on two poles. MS Sheet of board shall be of **minimum 22 SWG**. The text shallinclude ILD address as well as Manufacturer's nameand address, Phone, fax and mobile number for immediate contact in case of any failure of systems. The board shall be spray painted, with vinyl letter pasting.

18) DOCUMENTATION:

Two sets of installation manual / user manual shall be supplied along with the each power plant. The manual shall include complete system details such as array lay out, schematic of the system, inverter details, working principle etc. Step by step maintenance and troubleshooting procedures shall be given in the manuals. Module layout drawing has tobe submitted to ILD for the site. Set of line diagram and licensed electrical contractors' certificate has to be submitted.

19) BILL OF MATERIAL:

The Bidder shall provide the bill of material for grid connect SPV power plant mentioning the quantity of each of the item consisting in the system, along with the offer.

20) SHADOW ANALYSIS:

The shadow analysis of site has to be carried out by Bidder and shall be submitted to ILD, after placement of work order.

21) STRUCTURE:

The module mounting structure shall be made of **GI medium class pipe/ GI channel**. The grouting of the structure shall be done by PCC 1:2:3, which shall withstand the wind speed of 150 km/hr.

Tender Document for Design, Supply, Installation & Commissioning of Grid connected Solar Ground mounted Power Plant of 70 KWp Capacity at ILD Jaipur, Rajasthan On Total Turn Key Basis

21) PERFORMANCE GUARANTEE

Successful Bidder shall give generation guarantee of minimum 1450 KWh/KWp/year of installed capacity per year for a period of 2 years from the date of successful installation of net meter and synchronization of the plant with the local DISCOM grid. In case of shortfall in the generation, ILD reserves the right to deduct the amount of shortfall at prevailing energy charges being paid to the DISCOM from PBG submitted by the bidder.

List of Approved Makes and Specifications for 70KWP Solar Power Plant

Solar Panel	Solar Panel > of 300Wp, 72 cells – Efficiency of module >17.5%. Conform to IEC 61215/IS14286 & IEC61730 Part-2. IEC 61701/IS 61701 for corrosive atmosphere.	Adani/ Waree/Vikram Solar	Made In India Modules
Structure	Mounting structures Hot Dip Galvanized/Pre-galvanize or Anodized Aluminum	Fabricated	For 70KWP Solar panel mounting
	Grouting nut-bolt, clamp, sealant	GI/SS and ISI marked	As per Requirement
	Grounding Link – GI flat	Standard	
	SPV mounting Nut – bolt / Clamps	SS	
SPV string	MC4 SPV connectors – Pair	Compatible with SPV	As per Requirement
	String and JB cable – Cu PVC flexible	Anchor/Havells/Poly Cab	
	JB to Inverter – Cu PVC flexible	Anchor/Havells/Poly Cab	
	DCDB, SPD & Fuse Junction Box	Fitwell/Sure/Hensel	
	AC cable Inverter to LT panel 3.5C Al armoured	Anchor/Havells/Poly Cab	
Inverter	Inverter – Grid Interactive Inverter – String/Central Inverter	ABB/SMA/Kaco	Depending on individual inverter capacity
	AC Junction Box with MCB, Fuse & SPD & LT panel	Fitwell/Sure/Hensel	As per requirement
	Earthling kit (AC, DC, LA)	Orb/Dehn	As per requirement
	Lighting Arrestor	As per IEC specs	As per requirement
	GI Strip – connection	Jindal/TATA/Sail	As per requirement

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	Cable tray/Conduits	ISI marked/Standard	As per requirement
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Financial Bid Guidelines

- Rates quoted by Bidder will be FOR destination prices inclusive of taxes, levies, duties, packing, forwarding, freight, insurance, loading unloading, supply, installation, commissioning, connectivity charges, meter charges etc. and any/ all charges for successful Supply and Installation of the systems at any locations in the State of Rajasthan and all other miscellaneous expenses of marketing, commissions etc, if any.
- The rates quoted by the Bidder will be inclusive of GST or any other taxes applicable to such work. Any escalation in such taxes/ levies during the tenure of the offer/ order will not be paid by ILD and Bidders are advised to take in to consideration any such escalations in the prevailing taxes/levies/duties.
- In no circumstances, escalation in the prices will be entertained.
- Your rates are to be submitted as per the enclosed Performa of schedule of rates :

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Price Bid

The rates mentioned are per kW of system capacity

Sr.No.	Item	System Unit Rate per KW in Rs.	Installation & Commissioning Charges per KW in Rs.	CMC charges for 5 years per KW	GST per KW in Rs.	Total Amount without GST per KW in Rs.	Total Amount with GST per KW in Rs.
i	ii	iii	iv	v	vi	vii = iii + iv + v	viii = vi + vii
	<u>GRID CONNECTED SOLAR PV GROUND MOUNTED SYSTEM</u>						
1	70 KW Ground mounted System						

BOQ For 70 KWP Grid Tied Solar Ground mounted Power Plant

Item Number	Item Description	Quantity (only figures)	UNIT (up to 50 characters)	Tender Rate (Up to 2 Decimals)	Amount (Up to 2 Decimals)
1.1	Solar Photo Voltaic Modules. Poly Crystalline Above 300Wp	As per selection	Nos	0	0
1.2	Grid Tied Inverter 35 KW Capacity	2	Nos	0	0
1.3	GI Mounting Structure for Modules suitable for 70 KW along with Nut/Bolt/Clamp/Sealant	1	Lot	0	0
1.4	Structure Grounding Link with required fasteners	1	Lot	0	0
1.5	Wires/Connectors/Cables/	1	Lot	0	0
1.6	DCDB/SPD/Fuse Junction Box/	1	Lot	0	0
1.7	AC Junction Box with SPD/MCB/Fuse & LT Panel	1	Lot	0	0
1.8	AC/DC Earthing Kit	1	Lot	0	0
1.9	Lightening Arrestor with GI Connection Strip	1	Lot	0	0
1.10	Cable Tray/Conduits/Cable Ties & Accessories	1	Lot	0	0
1.11	Approach platforms Structure for Cleaning and maintenance of panels	1	Lot	0	0
1.12	Manual cleaning facility for All Panel Water Cleaning. (Mandatory)	1	Lot	0	0

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1.13	Auto cleaning facility for All Panel Water Cleaning. (optional)(Kindly submit separate scheme along with technical bid documents	1	Lot	0	0
1.14	Complete Monitoring System with all necessary field sensors and instruments synchronized with separate PC with Complete Data Recordings, Data Logging with Daily Generation SMS Facility (Optional)	1	Lot	0	0
1.15	Integration, installation commissioning and consultancy charge for the project	1	Lot	0	0