

# Odisha Forest Development Corporation Limited

Tender Document for selection of Bidders for  
Implementation of Grid Connected Roof Top Solar PV at  
Corporate Office, OFDC Ltd  
At  
A/84 Kharavel Nagar,  
Unit-III, Bhubaneswar, Odisha, India

Regd. Off.: A/84, Kharavel Nagar, Unit-III, Bhubaneswar, Odisha, PIN-751001,  
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# Odisha Forest Development Corporation Limited



(A Govt of Odisha Undertaking)

CIN-U02005OR1962SGC000446

Regd. Off: A/84 Kharavel Nagar, Unit-III, Bhubaneswar, Odisha, PIN751001

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## TENDER FOR SUPPLY INSTALLATION AND COMMISSIONING OF ROOFTOP SOLAR POWER PLANT

No.: 8776

Date:11.05.195

Offers invited from eligible bidders to participate in the Tender for design, manufacture, supply, erection, testing and commissioning including warranty, operation & maintenance of Grid Connected Roof Top Solar PV power system at its Corporate Office at A/84 Kharavel Nagar, Unit-III, Bhubaneswar, Odisha. Bid documents which include eligibility criteria, "Technical Specifications", various conditions of contract, formats, etc. can be downloaded from the Corporation's website ([www.odishafdc.com](http://www.odishafdc.com)) w.e.f.12.05.2017. Bidders should submit their bid proposal/ application along with all supporting documents complete in all aspect at Corporate Office, OFDC Ltd at A//84, Kharavel Nagar, Unit-III, Bhubaneswar, Odisha, PIN-751001 in prescribed format on or before **5<sup>th</sup> June 2017 upto 4.00 p.m.** Techno-Commercial bids will be opened on **6<sup>th</sup> June 2017 at 3.30p.m** in presence of authorised representatives of bidders who wish to be present. Bid proposals received without or lesser than the prescribed Tender Fee and EMD will not be considered and will be outrightly rejected. OFDC reserves the right to modify, amend or supplement this Tender document including all formats and Annexures.

Sd/-  
Managing Director

**DISCLAIMER:**

1. Though adequate care has been taken while preparing the Tender document, the Bidders/Applicants shall satisfy themselves that the document is complete in all respects. Intimation of any discrepancy shall be given to this office immediately. If no intimation is received from any Bidder before 3 days of due date of submission of completed tender, it shall be considered that the Tender document is complete in all respects and has been received by the Bidder.

2. OFDC reserves the right to modify, amend or supplement this tender document including all formats and Annexures.

3. While this Tender has been prepared in good faith, neither OFDC nor its employees or advisors make any representation or warranty, express or implied, or accept any responsibility or liability, whatsoever, in respect of any statements or omissions herein, or the accuracy, completeness or reliability of information, and shall incur no liability under any law, statute, rules or regulations as to the accuracy, reliability or completeness of this Tender, even if any loss or damage is caused by any act or omission on their part.

# INTRODUCTION, BID DETAILS AND INSTRUCTIONS TO THE BIDDERS Part-I

## 1. Introduction

- 1.1 Odisha Forest Development Corporation Ltd, a Government of Odisha undertaking is one of the oldest and first of its kind forest Corporation in the Country incorporated in the year 1962. It engages trading of Timber, Kendu Leaf, Bamboo obtained from the Forest Department, Government of Odisha
- 1.2 OFDC Ltd which expression shall also include its successors and permitted assigns, hereby invites interested companies/ firms to participate in the bidding process for the selection of Successful Bidder(s) for implementation of grid-connected roof top Solar Photovoltaic.
- 1.3 The Bidder is advised to read carefully all instructions and conditions appearing in this document and understand them fully. All information and documents required as per the bid document must be furnished. Failure to provide the information and / or documents as required may render the bid technically unacceptable.
- 1.4 The bidder shall be deemed to have examined the bid document, to have obtained his own information in all matters whatsoever that might affect the carrying out the works in line with the scope of work specified elsewhere in the document at the offered rates and to have satisfied himself to the sufficiency of his bid.
- 1.5 The bidder shall be deemed to know the scope, nature and magnitude of the works and requirement of materials, equipment, tools and labour involved, wage structures and as to what all works he has to complete in accordance with the bid documents irrespective of any defects, omissions or errors that may be found in the bid documents

## 2. Scope of Work

- 2.1 The scope of work for the bidder include complete design, engineering, manufacture, supply, storage, civil work, erection, testing & commissioning and obtaining "No Objection Certificate (NOC)" from Distribution Company (DISCOM) for grid connectivity including supply, installation of required meter for net metering for the 50 KWp grid connected rooftop solar PV project of the OFDC on the roof top of the Corporate Office building including operation and maintenance (O&M)

of the project for a period of Five years after commissioning. PV modules used in the power plant must be warranted for their output peak watt capacity, which should not be less than 90% at the end of 10 years and 80% at the end of 25 years.

- 2.2 The project targets installation of grid-connected roof top solar PV projects on the roofs of Corporate Office, OFDC Ltd at A/84 Kharavel nagar, Unit-III, Bhubaneswar, Odisha, India, PIN-751001. The generated solar power may be utilized for captive application and the surplus power will be fed to the grid. The scheme aims to reduce the fossil fuel based electricity load on main grid and make building self-sustainable from the point of electricity, to the extent possible.

### 3. Minimum Eligibility Conditions

- 3.1 The bidder must have submitted the cost of the Tender document fees and amount of Earnest Money Deposit as required under clause- of this document.
- 3.2 The bidder must have accepted all the terms and conditions of the tender unconditionally and must have submitted a undertaking to that effect under the letter head of his organization.
- 3.3 The bidder should be:  
A Registered Manufacturing Company/Firm/ Corporation in India of PV Cells / Modules or Battery or PV System Electronics (Conforming to relevant National / International Standards)

OR

A PV system integrator having experience for installation and commissioning of at least 50 KW solar photovoltaic systems.

OR

At least one or more Solar Photovoltaic Power Plant (s) aggregating to a total of 50 KWp capacity

- 3.4 The Bidder should have installed & commissioned at least one Grid connected Solar PV system/Power Project having a capacity of not less than 50 kW which should have been commissioned at least six months prior to Techno-Commercial Bid Opening date. The list of project commissioned at least 6 months prior to Techno-Commercial Bid Opening date, indicating whether the project is grid connected, along with a copy of the Commissioning certificate and Work order / Contract / Agreement/ from the Client/Owner shall be submitted in support of the project handled.

- 3.5 The bidder should have valid test report of SPV modules as per MNRE, GOI latest guidelines “minimal technical requirements / standards for SPV systems / plants to be deployed” (Test Certificate are necessary and should have been issued on or after 1st April 2013)
- 3.6 The Bidder should have batteries and power conditioning unit (PCU) of MNRE (GOI) empanelled manufacturer and should have valid tests reports as per MNRE, GOI latest guidelines “minimal technical requirements/standards (Test Certificate are necessary and should have been issued on or after 1st April, 2013).
- 3.7 Bidder should have the cumulative experience during the last three years in executing contracts for the supply; installation and commissioning of solar photovoltaic systems / solar power plants at least Rs. 50.00 lacs in the proforma provided in the Annexure.
- 3.8 The overall average turnover of the company/firm/corporation in the last three financial years should be at least Rs. 50.0 Lac (This must be the individual Company’s turnover and not that of any group of company). Certificate from Chartered Accountant shall be enclosed with the offer in the proforma provided in the Annexure. There is no need to provide entire voluminous balance sheet. Further details, if required, may be asked for the contractors after opening of technical bid.
- 3.9 The bidder should have valid CST/ State VAT/TIN registration certificate. A copy of which should be enclosed.
- 3.10 The bidder shall submit a certificate that their firm has never been debarred by any Government agencies/departments/PSUs. The bids of the debarred firm will be rejected out rightly.
- 3.11 Consortium, Joint Venture/ Business partnership is not allowed.
- 3.12 In case of system integrator, if not a manufacture of any major part solar panel, battery and PCU, must submit the tie-up certificate with the manufacture with assurance to supply the offered quantity.
- 3.13 In case the bidder is an Electrical contractor, then certified copy of the license issued by the ELBO is to be enclosed.
- 3.14 Only indigenous crystalline solar PV modules are allowed.

**4. Other Eligibility Conditions:**

The Bidder should score minimum score of 50 as per following scoring criteria for consideration of his financial bid.

Sr. No.	Criteria	Points
1	MNRE accredited off-grid Channel partner/Programme Administrator or Credit Rating (From MNRE Accredited Rating Agency) of SP 3D and above.	10

2	Cumulative Experience * of the Bidder in Executing contracts of Solar Photovoltaic Systems/Power Plant (Installation & Commissioning of PV Systems/Power Plants)  >25 KWp  >50 KWp  >100 KWp	5 10 25
3	Value of a "Single Order"* of PV Systems/ Power Plants executed by the Bidder:  Valued more than Rs. 25 Lakhs  Valued more than Rs. 50 Lakhs  Valued more than Rs. 1.0 Crore	5 10 25
4	Cumulative Experience * of the Bidder in executing contracts (Installed & commissioned) of Stand Alone solar P V Systems/ Power Plants:  At least 100% of the tendered value  At least 200% of the tendered value	5 10
5	Bidder has Test Certificate for solar Lanterns, Solar Home lighting systems, Solar Street Lighting Systems, Solar Water Pumping Systems of SPV Modules, battery, Electronics etc from a MNRE authorized testing center. (Test Certificate should have been issued on or after April 2009.)  Certificate for any two of the above  Certificate for more than two of the above	5 10
6	The Bidder has ISO 9001 certification	10
7	The Bidder must be a HT Electrical Contractor Licence holder issued by ELBO, Odisha	10

\* Bidder's experience should be in supply, installation/commissioning (contracts executed, completed and handed over) of Solar Photovoltaic Systems/ Power Plants for MNRE/ Govt. supported Schemes / Programmes, (including Projects executed by channel partners availing MNRE support) OR Any Government Organization/ Agency/ PSU.

## **5. Project Cost/ Bid Price**

- 5.1 The Project cost/ Bid Price shall include all the costs related to above Scope of Work. Bidder shall quote for the entire facilities on a “single responsibility” basis such that the total Bid Price covers all the obligations mentioned in the Bidding Documents in respect of Design, Supply, Erection, Testing and Commissioning including Warranty, Operation & Maintenance for a period of 5 years (under CAPEX Model), goods and services including spares required if any during O&M period. The Bidder has to take all permits, approvals and licenses, Insurance etc., provide training and such other items and services required to complete the scope of work mentioned above.
- 5.2 The Project cost/ Bid Price quoted is on lump sum turnkey basis and the bidder is responsible for the total Scope of Work described at Clause 2 above.
- 5.3 The Project cost/ Bid Price shall remain firm and fixed and shall be binding on the Successful Bidder till completion of work irrespective of his actual cost of execution of the project. No escalation will be granted on any reason whatsoever. The bidder shall not be entitled to claim any additional charges, even though it may be necessary to extend the completion period for any reasons whatsoever.
- 5.4 The Project cost/ Bid Price shall be inclusive of all duties and taxes, insurance etc. The prices quoted by the firm shall be complete in all respect and no price variation /adjustment shall be payable
- 5.5 The operation & maintenance of Solar Photovoltaic Power Plant would include wear, tear, overhauling, machine breakdown, insurance, and replacement of defective modules, invertors / Power Conditioning Unit (PCU), spares, consumables & other parts for a period of 5 years.

## **6. VALIDITY OF BID AND RATE CONTRACT**

The bids shall be valid for a period of one year from the date of opening of tender. OFDC Ltd may ask to the bidder(s) to extend the validity, if necessary. The rate contract shall be valid for one year from the date of its issue.

## **7. EARNEST MONEY DEPOSIT & TENDER FEE**

### **7.1 Earnest Money Deposit**

- 7.1.1 The Payment for EMD Rs.50,000/- (Rupees Fifty Thousands only) can be deposited in shape of Bank Draft drawn in any nationalized bank in favour of Managing Director, Odisha



Forest Development Corporation Ltd payable at Bhubaneswar.

7.1.2 The offers without EMD will be rejected without assigning any reason as being non-responsive.

7.1.3 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% PSD.

7.1.4 EMD will be forfeited in case of non-submission of PSD against the work order placed and if a bidder withdraws its tender during the period of tender validity specified.

#### 7.2 Cost of Tender Fee

The Payment for Tender Document Fee Rs. 1000/- (Rupees one thousand only ) can be made in shape of Bank Draft drawn in any nationalized bank in favour of Managing Director, Odisha Forest Development Corporation Ltd payable at Bhubaneswar. The Cost of Tender Document fee is Non-Refundable.

7.3 MSME are exempted from payment of tender fee and EMD they furnish documentary evidence that they are registered for the items they intend to quote against this tender.

### **8. PERFORMANCE SECURITY DEPOSIT (PSD) AND PAYMENT TERMS**

8.1 The successful bidder shall have to deposit 10 % of the total work order value within 30 days from the date of issue of work order in the shape of demand draft/bank guarantee valid for five years as PSD. If required, OFDC Ltd may ask to extend the validity of the PSD.

8.2 100% shall be released after installation and commissioning of the systems and after connectivity Grid Connectivity with net metering arrangement supported with Joint Commissioning Report (JCR) duly signed and dated by the concerned official of the OFDC or any authorized person engaged for this purpose by the OFDC and the vendor.

### **9. INSURANCE**

9.1 The Bidder shall be responsible and take an Insurance Policy for transit-cum-storage-cum-erection for all the materials to cover all risks and liabilities for supply of materials on site basis, storage of materials at site, erection, testing and commissioning. The bidder shall also take appropriate insurance during O&M period.

9.2 The Bidder shall also take insurance for Third Party Liability covering loss of human life, engineers and workmen and also covering the risks of damage to the third party/material/equipment/properties during execution of the Contract. Before commencement of the work, the Bidder will ensure that all its employees and representatives are covered by suitable insurance against any damage, loss, injury or death arising out of the execution of the work or in carrying out the Contract. Liquidation, Death, Bankruptcy etc., shall be the responsibility of bidder.

## 10. **WARRANTEES AND GUARANTEES**

- 10.1 The Bidder shall warrant that the goods supplied under this contract are new, unused, of the most recent or latest technology and incorporate all recent improvements in design and materials.
- 10.2 ***The warranty period shall be 25 Years for the PV modules and 5 years for complete system from the date of commissioning of the systems and handed over to OFDC Ltd.*** The contractor shall rectify defects developed in the system within Warranty period promptly. 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.
- 10.3 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 above after the equipment has been accepted by the OFDC Ltd 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 OFDC Ltd.
- 10.4 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 OFDC Ltd shall take appropriate action against the firm
- 10.3 The successful bidder has to transfer all the Guarantees /Warrantees of the different components to the OFDC Ltd. ***The responsibility of operation of Warrantee and Guarantee clauses and Claims/ Settlement of issues arising out of said clauses shall be the responsibility of the Successful bidder and OFDC Ltd will not be responsible in any way for any claims whatsoever on account of the above.***

## **11. TYPE AND QUALITY OF MATERIALS AND WORKMANSHIP**

11.1 The Design, engineering, manufacture, supply, installation, testing and performance of the equipment shall be in accordance with latest appropriate IEC/Indian Standards as detailed in the Part-II (Technical specifications) of the bid document. Where appropriate Indian Standards and Codes are not available, other suitable standards and codes as approved by the MNRE shall be used.

11.2 Any supplies which have not been specifically mentioned in this Contract but which are necessary for the design, engineering, manufacture, supply & performance or completeness of the project shall be provided by the Bidder without any extra cost and within the time schedule for efficient and smooth operation and maintenance of the SPV plant.

## **12. TIME SCHEDULE, PENALTY/LIQUIDATED DAMAGES**

These systems are to be supplied, installed and commissioned within **three months** time from the date of issue of work order and all the materials, equipments, permissions etc required for this project should be at site well within two months from the issue of the work order and to be ready for inspection of the OFDC officials or any third party authorized by the OFDC in this regard. The time of delivery or dispatch stipulated in the supply order shall be deemed to be the essence of the contract, and once the maximum is reached, the "OFDC LTD" may consider forfeit the EMD and/or PSD deposited with the OFDC and termination of the contract.

## **13. OPERATION & MAINTENANCE (O&M)**

The bidder shall be responsible for Operation and Maintenance of the Roof top Solar PV system of capacity above 50kWp for a period of 5 years, during which OFDC Ltd will monitor the project for effective performance in line with conditions specified elsewhere in the bid document and should have warranty for 5 years only. During this period, the bidder shall be responsible for supply of all spare parts as required from time to time for scheduled and preventive maintenance, major overhauling of the plant, replacement of defective modules, inverters, PCU's etc and maintaining log sheets for operation detail, deployment of staff for continuous operations and qualified engineer for supervision of O&M work, complaint logging & its attending.

**14. METERING AND GRID CONNECTIVITY**

Metering and grid connectivity of the roof top solar PV system under this project would be the responsibility of the Bidder in accordance with the prevailing guidelines of the concerned DISCOM and / or CEA (if available by the time of implementation). OFDC could facilitate in the matter; however the entire responsibility lies with bidder only.

**15. PLANT PERFORMANCE EVALUATION**

The successful bidder shall be required to meet minimum guaranteed generation with Performance Ratio (PR) at the time of commissioning and related Capacity Utilization Factor (CUF) as per the GHI levels of the location during the O&M period. PR should be shown minimum of 75% at the time of inspection for initial commissioning acceptance to qualify for release of 10% subsidy and as per Clause 6.9 of Section-II. Minimum CUF of 15% should be maintained for a period of 5years. The bidder should send the periodic plant output details to [NAME OF THE ORGANISATION] for ensuring the CUF. The PR will be measured at Inverter output level during peak radiation conditions.

**16. PROJECT INSPECTION.**

The project will be monitored by the OFDC and the projects will be inspected for quality at any time during commissioning or after the completion of the project either by officer(s) from OFDC Ltd or any authorized agency/ experts. OFDC Ltd reserves the right to do sample inspection checks for the projects commissioned by the Bidder. OFDC Ltd may also depute a technical person(s) from its list of empanelled experts of Government/ Government Agencies/ DISCOMS for inspection, Third party verification, monitoring of system installed to oversee, the implementation as per required standards and also to visit the manufactures facilities to check the quality of products as well as to visit the system integrators to assess their technical capabilities as and when required.

**17. FORCE MAJEURE**

- a. Notwithstanding the provisions of clauses contained in this deed; the vendor 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.

- b. For purpose of this clause, "Force majeure" means an event beyond the control of the vendor and not involving the vendor'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.
- (ii) However, if a force majeure situation arises, the vendor shall immediately notify the OFDC Ltd in writing. The decision of the Managing Director, OFDC Ltd in above conditions shall be final and binding to the vendor.

## **18. ARBITRATION**

If any question, dispute or difference what so ever shall arises between OFDC Ltd and the successful bidder, in the connection with this project 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 arbitrator to be appointed by the OFDC Ltd. 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 contract shall be continuing during the arbitration proceedings unless the OFDC Ltd or the arbitrator directs otherwise.

## **19. CORRESPONDENCE**

Bidder requiring any clarification on bid documents may contact in E Mail to [general@odishafdc.com](mailto:general@odishafdc.com).

## **20. AMENDMENTS TO TENDER DOCUMENT**

- a. At any time prior to the deadline for submission of Bids, the OFDC Ltd may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, modify the tender document by issuing clarification(s) and/or amendment(s).
- b. The clarification(s) / amendment(s) (if any) may be notified on OFDC Ltd's website [www.odishafdc.com](http://www.odishafdc.com) at least Two (2) days before the proposed date of submission of the Bid. If any amendment is required to be notified within Two (2) days of the proposed date of submission of the Bid, the Bid Deadline may be extended for a suitable period of time.

- c. OFDC Ltd will not bear any responsibility or liability arising out of non-receipt of the information regarding Amendments in time or otherwise. Bidders must check the website for any such amendment before submitting their Bid.
- d. In case any amendment is notified after submission of the Bid (prior to the opening of Techno-Commercial Bid. Bids received by OFDC Ltd shall be returned to the concerned Bidders on their request through registered post or courier and it will be for the Bidders to submit fresh Bids as the date notified by the OFDC Ltd for the purpose.
- e. **All the notices related to this Bid which are required to be publicized shall be uploaded on website [www.odishafdc.com](http://www.odishafdc.com).**

## **21. SUBMISSION OF TENDER**

- I. Tender should be submitted in two envelopes i.e. part-I (Technical and Commercial) and part-II (price part in Annexure-VIII). The firm should submit their offers in two separate envelopes.
- II. All the pages of tender documents, technical specifications, bids, supporting documents etc. shall be indexed, numbered and signed
- III. 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.

## **22. 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 details provide Annexures and their attached documents.

- ii) Price part: Part-II

- a) The price of solar power plant of each 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 Annexure- VIII alongwith bills of material as an attachment to the said annexure-VIII under the letter head of the Bidder .

- 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.

### **23. OTHER TERMS AND CONDITIONS**

- (i) The offer shall be submitted on tender form issued by this office or downloaded from its website [www.odishafdc.com](http://www.odishafdc.com) alongwith the proof of payment of Tender Fee or Demand Draft as the case may be. Conditional tender and tender not accompanied by EMD and document fees shall not be accepted and outright will be rejected.
- (ii) The price quoted should include 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 bidder exclusively. TDS will be deducted from the payment of the bidder as per the prevalent laws and rules of Government of India and Government of Odisha in this regard.
  - (iii) All columns of the technical and financial bid shall be duly filled in and there shall be page numbering of bid document, the rates shall not be overwritten and be both in figures and words.
  - (iv) All corrections must be signed by the tenderers.
  - (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.
  - (vi) All disputes relating to this work shall be subject to the jurisdiction of Bhubaneswar, Odisha and Chairman, OFDC Ltd shall be the sole arbitrator.
- (vii) The Managing Director, OFDC Ltd will have the right of rejecting all or any of the quotation without assigning reason thereof.
- (viii) In case of any ambiguity in interpretation of any of the clauses/ provision of the said rate contract/DNIT, the decision of the Managing Director, OFDC Ltd shall be final and binding.
- (xi) It shall be the sole responsibility of the bidder to get verified the quality & quantity of the supplied material at the site of delivery.
- (xii) The bidder shall indemnify the OFDC Ltd 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) The Bidder, 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 in proper packing.

- (xiv) The bidder shall inform the OFDC Ltd 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 offices at least 7 days in advance.
- (xv) All demurrage, wharf age and other expenses incurred due to delayed clearance of the material or any other reason shall be to the account of the bidder.
- (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) OFDC Ltd, may by written notice sent to the bidder, 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 interest of OFDC .



## TECHNICAL SPECIFICATIONS

The proposed projects shall be commissioned as per the technical specifications given below. Any shortcomings will lead to cancelation of the bid as decided by OFDC Ltd and the decision of the OFDC Ltd shall be final and binding on the bidder

### 24. 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

### 25. SOLAR PHOTOVOLTAIC MODULES:

25.1 The PV modules used should be made in India.

- 25.2 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-2- requirements for construction & Part 2 – requirements for testing, for safety qualification or equivalent IS.
- 25.3 For the PV modules to be used in a highly corrosive atmosphere throughout their lifetime, they must qualify to IEC 61701/IS 61701
- 25.4 The total solar PV array capacity should not be less than allocated capacity (kWp) and should comprise of solar crystalline modules of minimum **250** Wp and above wattage. Module capacity less than minimum **250** watts should not be accepted
- 25.5 Protective devices against surges at the PV module shall be provided. Low voltage drop bypass diodes shall be provided.
- 25.6 PV modules must be tested and approved by one of the IEC authorized test centers.
- 25.7 The module frame shall be made of corrosion resistant materials, preferably having anodized aluminum.
- 25.8 The bidder shall carefully design & accommodate requisite numbers of the modules to achieve the rated power in his bid. OFDC Ltd may allow only minor changes at the time of execution.
- 25.9 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.

25.10 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

#### **25.11 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 Owners sole option
- b) Performance Warranty:

- i. 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.

## 26. **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 Bhubaneswar where a PV system is proposed to be installed. 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 OFDC Ltd. 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, 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 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 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 should be less than  $60 \text{ kg/m}^2$ .

- h) The minimum clearance of the structure from the roof level should be 300 mm.

## 27. **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 gasket to prevent water entry. Single / double 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) / SPDs, 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

## 28. **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.

## 29. **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 changeover switches, cabling work should be undertaken by the bidder as part of the project.
- d. All the Panel's shall be metal clad, totally enclosed, rigid, floor mounted, air - insulated, cubical type suitable for operation on three phase / single phase, 415 or 230 volts, 50 Hz
- e) The panels shall be designed for minimum expected ambient temperature of 45 degree Celsius, 80 percent humidity and dusty weather.
- f) All indoor panels will have protection of IP54 or better. All outdoor panels will have protection of IP65 or better.
- g) Should conform to Indian Electricity Act and rules (till last amendment).
- h) All the 415 AC or 230 volts devices / equipment like bus support insulators, circuit breakers, SPDs, VTs etc., mounted inside the switchgear shall be suitable for continuous operation and satisfactory performance under the following supply conditions

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

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

- a. The combined wattage of all inverters should 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.

**31. 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  
(In case single phase inverters are offered, suitable arrangement for balancing the phases must be made.)
- Output frequency : 50 Hz
- Grid Frequency Synchronization range : + 3 Hz or more
- Ambient temperature considered : -20<sup>o</sup> C to 50<sup>o</sup> 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 10kW or above )
- Inverter efficiency (minimum ) : > 90% (In case of less than 10 kW)
- THD : < 3%
- PF : > 0.9

- a) Three phase PCU/ inverter shall be used.
- 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 (if any) / 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.

### **32. 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.

### **33. DATA ACQUISITION SYSTEM / PLANT MONITORING**

- i. Data Acquisition System shall be provided for 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 / Solar cell based irradiation sensor (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/or 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. Computerized AC energy monitoring shall be in addition to the digital AC energy meter.
- xi. 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.
- xii. All instantaneous data shall be shown on the computer screen.
- xiii. Software shall be provided for USB download and analysis of DC and AC parametric data for individual plant.
- xiv. Provision for Internet monitoring and download of data shall be also incorporated.
- xv. 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 temperature monitoring system.
- xvi. Ambient / Solar PV module back surface temperature shall be also monitored on continuous basis.
- xvii. 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.
- xviii. Remote Monitoring and data acquisition through Remote Monitoring System software at the owner / [NAME OF THE ORGANISATION] 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 [NAME OF THE ORGANISATION] server and portal in future shall be kept.

**34. TRANSFORMER “IF REQUIRED” & METERING:**

- i. 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.
- ii. The bidirectional electronic energy meter (0.5 S class) shall be installed for the measurement of import/Export of energy.
- iii. 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 OFDC Ltd before commissioning of SPV plant.
- iv. Reverse power relay shall be provided by bidder (if necessary), as per the local DISCOM requirement.

**35. POWER CONSUMPTION:**

Regarding the generated power consumption, priority need to give for internal consumption first and thereafter any excess power can be exported to grid. Decisions of appropriate authority like DISCOM, state regulator may be followed.

**36. PROTECTIONS**

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

**36.1 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.

**36.2 SURGE PROTECTION**

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

### 36.3 EARTHING PROTECTION

- i. 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/[NAME OF THE ORGANISATION] as and when required after earthing by calibrated earth tester. PCU, ACDB and DCDB should also be earthed properly.
- 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.

### 37. 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 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.
- ii. A manual disconnect 4pole 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

### 38. 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:  $-10^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$ .
- 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 Armoured 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 %.

### **39. CONNECTIVITY**

The maximum capacity for interconnection with the grid at a specific voltage level shall be as specified in the Distribution Code/Supply Code of the State and amended from time to time.

### **40. TOOLS & TACKLES AND SPARES:**

- i. 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.

- ii. 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.

**41. DANGER BOARDS AND SIGNAGES:**

Danger boards should be provided as and where necessary as per IE Act. /IE rules as amended up to date. Three signage shall be provided one each at battery –cum- control room, solar array area and main entry from administrative block. Text of the signage may be finalized in consultation with OFDC Ltd.

**42. FIRE EXTINGUISHERS:**

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

- a) Portable fire extinguishers in the control room for fire caused by electrical short circuits
- b) Sand buckets in the control room
- c) 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.

**43. DRAWINGS & MANUALS:**

- a. Two sets of Engineering, electrical drawings and Installation and O&M manuals are to be supplied. Bidders shall provide complete technical data sheets for each equipment giving details of the specifications along with make/makes in their bid along with basic design of the power plant and power evacuation, synchronization along with protection equipment.
- b. Approved ISI and reputed makes for equipment be used.
- c. For complete electro-mechanical works, bidders shall supply complete design, details and drawings for approval to OFDC Ltd before progressing with the installation work.

#### **44. PLANNING AND DESIGNING:**

- i. 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 OFDC Ltd for approval.
- ii. OFDC Ltd 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.
- iii. 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.

#### **45. 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

#### **46. 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.

**47. 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.

\_\_\_\_\_XXX\_\_\_\_\_



## **Annexure-I**

### **DECLARATION BY THE BIDDER (to be submitted under the official letter head)**

I/we \_\_\_\_\_ (hereinafter referred to as the Bidder) being desirous of tendering for the work and having fully understood nature of the work and having carefully noted all the terms and conditions, specification 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 with all provisions of the tender document.
2. The Bidder is capable of executing and completing the work as required in the tender.
3. The Bidder accepts all risks and responsibilities directly or indirectly connected with the performance of the tender.
4. The Bidder has no collusion with other Bidder, any employee of OFDC Ltd or with any other person or firm in the preparation of the bid.
5. The Bidder has not been influenced by any statement or promises of OFDC Ltd or any of its employees, but only by the tender document.
6. The Bidder is financially solvent and sound to execute the work.
7. The Bidder is sufficiently experienced and competent to perform the contract to the satisfaction of OFDC Ltd .
8. The information and the statements submitted with the tender are true.
9. 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.
10. The Bidder has never been debarred from similar type of work by OFDC Ltd and or Government undertaking/ Department.
11. This offer shall remain valid for acceptance for 12 Months from the date of opening of the tender.
12. The Bidder gives the assurance to execute the tendered work as per specifications terms and conditions
13. 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.

**(Signature of Bidder)**  
**with SEAL**

**Format for forwarding/covering letter**

**To be submitted by tenderers on the official letterhead )**

No.....Dated:

.....

To,

The Managing Director

Odisha Forest Development Corporation Limited

A/84 Kharavel Nagar, Unit-III

Bhubaneswar, Odisha-PIN-751001

Subject:- **Offer in response to Notice Inviting Tender No. \_\_\_\_\_ for the rate contract of supply, installation & commissioning of 50Kw solar power plants at Corporate Office Building at A/84 Kharavel nagar, Unit-III Bhubaneswar, Odisha-751001.**

Sir,

We hereby submit our offer in full compliance with terms & conditions of the above tender. A blank copy of the tender, duly signed on each page is also submitted as a proof of our acceptance of all specifications as well as terms/ Conditions.

We confirm that, we have the capability to supply and install more than 50 KWp capacity PV Systems in .....months.

The tender is submitted in two separate and sealed envelopes marked Part-I & Part-II.

**(Signature of Bidder)**

**With Seal**

**Annexure-III**

**Information in support of PV System Integrator**

Details of orders received and executed by manufacturer/ supplier for supply of solar systems/ power plants to different govt. organizations/state nodal agencies/others

Sl. No	Name of Agency/ Organisation	Purchase Order No & Date	Nos/ Capacity of Solar Systems/ Power Plants Supplied	Year in which the plants were commissioned
1	2	3	4	5
Total				

Note:1. Attach photocopies of Purchase Orders

2. Attach Photo copies of Certificate of satisfactory performance of the plant issued by concerned agency/organsiation

**Signature of Authorized Signatory**

**Name** \_\_\_\_\_

**Designation**\_\_\_\_\_

**Company seal**\_\_\_\_\_

**Signature of Chartered Accountant with seal**

**Name** \_\_\_\_\_ **M.No.**

\_\_\_\_\_



**INFORMATION IN SUPPORT OF MEETING ESSENTIAL ELIGIBILITY CONDITIONS REGARDING ANNUAL TURNOVER OF THE BIDDER IN THREE FINANCIAL YEAR i.e. 2014-15, 2015-16 and 2016-17.**

Name of the Firm \_\_\_\_\_

Address \_\_\_\_\_

Contact Number \_\_\_\_\_

S.No.	Financial Year	Turn Over ( Rs. In lacs)
1.	2014-15	
2.	2015-16	
3	2016-17	
	<b>TOTAL</b>	

Signature of Chartered Accountant with seal

Name \_\_\_\_\_

M.No. \_\_\_\_\_

**Information in support of meeting others eligibility conditions regarding Cumulative Experience in PV Systems/power plants in Kwp capacity**

Details of orders received and executed by manufacturer/ supplier for supply of solar systems/ power plants to different govt. organizations/state nodal agencies/PSU

Sr. No.	Name of agency/ organization	P.O. NO./date	capacity of Solar systems/power plants executed in Kwp	Year in which the plants were commissioned
1	2	3	4	5
Total				

Note: (1) Attach photocopies of Purchase orders

(2) Attach photocopies of certificate of Satisfactory performance of the plant issued by Concerned Agency/Organization

**Signature of Authorized Signatory**

**Name** \_\_\_\_\_

**Designation** \_\_\_\_\_

**Company seal** \_\_\_\_\_

**GENERAL PARTICULARS OF BIDDER**

1	Name of firm	
2	Postal Address	
4	Telephone, Telex, Fax No	
5	E-mail	
6	Web site	
7	Name & designation of the authorized signatory to whom reference shall be made	
8	Present activities/business of the firm (whether Module Manufacturer/PCU Manufacturer/ PV System Integrator/ Electrical Contractor etc)	
9	Type of organization (whether Pvt. Ltd Company/Public Ltd Company/ Other Category	
10	Sale tax registration number TIN No & State of billing	
11	EMD of Rs.50,000/-	Attached/ not attached DD No._____ dated_____ Bank_____ Payable at.....
12	Tender fee of Rs. 1000/-	Attached/ not attached DD No._____._____dated_____ Bank_____ Payable at_____ Or OFDC receipt No._____ dated_____ Or
13	Have anything /extra other than price has been written in the price schedule	

Name:

Designation and company seal:

**FINANCIAL BID FOR THE RATE CONTRACT FOR SUPPLY, INSTALLATION AND COMMISSIONING OF 50 KWp SOLAR POWER PLANT AT CORPORATE OFFICE, OFDC LTD AT A/84 KHARAVEL NAGAR, UNIT-III, BHUBANESWAR, ODISHA, PIN-751001**

<b>Sl. No</b>	<b>Description</b>	Cost of the 50 KWp Solar Power Plant system including supply installation of net metering/bi-directional metering, SPV module FOR including transportation, packaging, installation/VAT/CST/Octrai etc with five years warranty/guarantee on the system and 25 years on the PV modules
1	<b>50 KWp RooftopSolar Power Plant</b>	Rs. _____ Rupees in Words( _____ _____ )

Place of Billing: \_\_\_\_\_

**Signature of Authorized Signatory**

**Name** \_\_\_\_\_

**Designation** \_\_\_\_\_

**Company seal** \_\_\_\_\_