

# ODISHA RENEWABLE ENERGY DEVELOPMENT AGENCY

## BHUBANESWAR

### REVISED BID DOCUMENT

DETAILS OF TENDER CALL NOTICE No. 3483 /OREDA DTD 07-09-2018 /

FOR

E-tenders are invited from interested bidders for design, supply, installation, commissioning and maintenance for a period of 5 years of Solar PV systems /devises as detailed in the tender document in schools in Angul district of the State.

Date of Hoisting of the bid document on Website	08-09-2018
Date & time of pre-bid meeting	17-09-2018 at 11:30 AM in OREDA Conference hall
Date of hoisting of final revised bid document	19-09-2018
Date and time of last submission of online bids	01-10-2018 up to 1:00 PM
Date and time of last submission of hard copy of bids	04-10-2018 up to 1:00 PM
Opening of Techno-Commercial bids	04-10-2018at 3:00 PM
Opening of the price bid	To be intimated later on to the technically qualified bidders .

S-3/59, MANCHESWAR INDUSTRIAL ESTATE, BHUBANESWAR-751010

Phone: (0674) 2588260,2586398,2580554, Fax:2586368

Website: [www.oredaorissa.com](http://www.oredaorissa.com) Email: [ceoreda@oredaorissa.com](mailto:ceoreda@oredaorissa.com)

## Disclaimer

Kindly Note:

1. This document is not transferable
2. Though adequate care has been taken for preparation of this document, the bidder shall satisfy himself 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 on the pre bid meeting or within ten days from the date of issue of the bid document, it shall be considered that bid document is complete in all respects and has been received by the bidder.
3. The Odisha Renewable Energy Development Agency (OREDA) reserves the right to modify, amend or supplement this bid document keeping in view the necessity in implementation of the scheme.
4. While the bid document has been prepared in good faith, neither OREDA nor their employees or advisors make any representation, 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 and completeness of this bid document, even if any loss or damage is caused by any act or omission on their part.



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### **DETAILS OF NOTICE INVITING TENDER**

Odisha Renewable Energy Development Agency invites e-tenders from interested bidders for design, supply, installation, commissioning and maintenance for a period of 5 years of Solar PV systems /devices as detailed in the tender document in 27 schools in Angul district of the State

Particulars	Estimated Cost (INR)	Earnest Money Deposit (INR)	Cost of Bid document (INR)	Tender processing fee (INR)
Design, supply, installation, testing, commissioning and maintenance for a period of 5 years of Solar PV systems /devices as detailed in the tender document in 27 tribal residential schools in Angul district of the State.	<b>2,45,00,000/-</b>	<b>2,50,000/-</b>	<b>10,500/-</b>	<b>5,900/-</b>

## 1. SCOPE OF THE WORK

The broad scope of the work includes

- a. Design, supply, installation and commissioning of 5kWp Solar PV Power Plant in 26 schools on a suitable rooftop of the school/ hostel to be identified by the Head Master of the concerned school and confirmed by the Asst Director( Tech) , DRDA, Anugul.
- b. Supply, Installation and commissioning of 270 nos. Solar Street Lighting Systems in 27 schools in suitable locations in the school premises as selected to be identified by the Head Master of the concerned school and confirmed by the concerned AD(T) , OREDA.
- c. Location alongwith system to be installed is reflected in Annexure- I.
- d. Separation of about 3.5 to 4 kW load from out of the existing loads and connecting the same to the ACDB of the solar PV Power plant.
- e. Testing of all installed systems in presence of the Head master and other staff of the school/ hostel and also Technician/AD(T) of OREDA.
- f. Imparting training to at least two staff members of the school/hostel in day to day maintenance and upkeep of the installed systems.
- g. Providing O&M manuals printed in Odiya language to each of the trained staff members as well as 3 extra copies to the head master of the school.
- h. Providing Remote Monitoring Systems in each of the inverters of the solar PV power plants and sharing the RMS protocol as well as log- in ID and pass word of each system with the School, AD(T), OREDA as well as concerned division of OREDA.
- i. Providing monthly report on usage of solar power by the school/hostel indicating daily and hourly consumption.
- j. Submission of quarterly maintenance report in prescribed format.
- k. Undertaking periodic maintenance of the systems as per the maintenance schedule given in this document and submitting the required maintenance reports.
- l. Displaying the contact details of Customer Relationship Centre in prominent places like near battery bank/ inverter, Solar PV array, Head Master's/ Warden's room, school/hostel common room/dining hall etc.
- m. Open a local office/ service center at Angul so as to deliver uninterrupted and sustainable maintenance services and share its contact details with all concerned.
- n. After completion of 5 years undertake detailed inspection of the installed system along with Head Master of the School and AD(T)/his representative and prepare an exit reports

and hand over the same to the school under intimation to the RE cell Angul well as to OREDA Headquarter or continue further AMC if the school so desires.

## **2. ELIGIBILITY CRITERIA FOR PARTICIPATING IN THE BIDDING:-**

- a. The bidder must be a company (registered under Indian Companies Act 1956) or a Partnership Firm (registered under Indian Partnership Act 1932) or a Sole Proprietorship Firm and should have registered under GST.
- b. The bidders must have minimum cumulative turnover of **Rs1.00 Cr.** over last three years exclusively in the business of solar PV.

The bidder must be in possession of the following valid test certificates and must submit the same along with the technical bid. The bidder must supply the tested components/system during work execution without any deviation. **The test reports should be issued on or after 1<sup>st</sup> April 2016.**

### **c. Solar Power Plant**

- i. Solar PV module
- ii. Power control Unit
- iii. Battery

**The test report should be forwarded with an Authorization letter of Original Equipment Manufacturer (OEM). The test report without authorization letter from OEM will not be accepted.**

**The component wise requirement of test certificates has been given in Annexure-1.**

### **Street Lights:**

Valid test certificate for street lights composite system in the name of bidder from any MNRE approved Test Lab.

- d. The bidder must have commissioned minimum **100kWp** (cumulative) capacity rooftop solar power plants and street lighting during last 3 years in Govt / PSUs/ Govt Agency/ Bodies. As proof of installation the bidder must submit the work completion certificates in the format given in favour of each installation.
- e. The bidder must have the capacity to manufacture/Integrate solar PV systems for a cumulative capacity of **1000 kWp** per annum. The relevant manufacturing capacity must be reflected in the stores details certified by NSIC/OSIC/DIC/such other certifying organizations.
- f. The products offered by the bidder must adhere to minimal technical requirements specified under the Jawaharlal Nehru National Solar Mission.

- g. The bidder's company/firm must have established quality assurance systems and organization in line with the requirements under ISO 9001:2015 & ISO 14001:2015 certification.
- h. The bidder's company/firm must not have been debarred / blacklisted by any Govt. Dept., agency, PSUs / institution / agencies / autonomous organisations. The bidder shall submit a self-certification by an authorized person duly notarized to this effect.

### 3. INSTRUCTIONS TO BIDDERS:

#### 3.1 GENERAL INSTRUCTIONS

- Interested bidders are advised to view the detailed tender documents on [www.oredaorissa.com](http://www.oredaorissa.com) or [www.tenderwizard.com/OREDA](http://www.tenderwizard.com/OREDA).
- Bidders desirous of participating in the tender shall have to pay the tender costs mentioned in TENDER SCHEDULE. The tender cost is required to be paid in shape of Demand draft only, drawn in **favour of Chief Executive, OREDA payable at Bhubaneswar**. The tender cost is inclusive of GST and is not refundable.
- All participating bidders shall have to pay the non-refundable tender processing fee as mentioned in TENDER SCHEDULE to K.S.E.D.C. Ltd. Bangalore through Tender Wizard Portal on e-payment modes only such as credit/debit cards, Net banking etc.
- Earnest money as specified in bid should be deposited in shape of Demand Draft drawn in favour of the Chief Executive, OREDA payable at Bhubaneswar from any nationalized bank. Alternatively the EMD can also be submitted in shape of Bank Guarantee from any nationalized bank in the format given at Annexure-2 having validity of one year from the date of submission of bid.
- The bidders shall submit copies of documents defining their respective constitutional or legal status, place of registration and principle place of business of company or firm or partnership.
- Only bidding companies are required to submit Board Resolutions in prescribed format given at Annexure-3.
- Bidding firms are required to submit documents related to assignment of Power of attorney to sign the agreement on behalf of bidders.
- Bidding Partnership firms are required to submit complete partnership deeds along with the bid documents.

- The bidder shall submit reports on their financial standing such as audited profit and loss statements, balance sheets, auditor's report for the past three years. All accounting statements must be duly audited and submitted along with auditor's note on accounts and accounting standards.
- The bidders shall submit information on their performance during last 3 years in format given at Annexure-4.
- The bidders shall have to indicate their capacity to manufacture/integrate the different solar PV systems asked for in this tender within the specified time after meeting all their other similar commitments.
- The supplied materials should strictly comply with the specifications as mentioned in the bid, otherwise the material would be liable for rejection.
- Certificate to the effect that the systems to be supplied are indigenous & not fully imported must be furnished.
- Since timely execution of works is of paramount importance, requests for extension of time shall not be ordinarily entertained.
- Notice inviting tender, bid documents, prescribed Technical bid, price bid, terms & conditions will form the part of the tender.
- Bidders may in their own interest visit the sites before submitting bids.
- All Taxes applicable at the time of supply will be admissible.
- In case of supply of any defective material or substandard material, the materials will be rejected & it will be the responsibility of the supplier for taking back & replacing the rejected materials at their own cost. In case of non-lifting of such rejected materials within a reasonable time offered by the office it will have the right to suitably dispose off the same and forfeit the amount?
- OREDA will not be responsible for any incidental or consequential losses of the firms while execution and till expiry of the period of maintenance.
- During the warranty period, MNRE/ State Agencies/ Users reserve the right to cross check the performance of the systems with the minimum performance levels specified in the MNRE specifications.

- Deviations in terms and conditions, Specification of material, Inspection clause etc. will not be accepted under any condition.
- The Electronic Form/Template of the Techno –Commercial bid, as available on the portal, shall be duly filled in and scanned copies of documents in support of meeting the minimum qualifying requirement of the tender shall be given as attachments
- Prices quoted must be firm and fixed. No price variation / escalation shall be allowed during process of completion of the project.
- **Any condition in regards to financial aspects, payments, terms of rebate etc. beyond the prescribed financial terms of OREDA will make the bid invalid.**
- Therefore it is in the interest of the bidders not to write anything extra in the Price Bid except price.
- Canvassing in any manner shall not be entertained and will be viewed seriously leading to rejection of the bid.
- All subsequent addendum/Corrigendum to the tender shall be hoisted in OREDA's official web site [www.oredaorissa.com](http://www.oredaorissa.com) and [www.tenderwizard.com/OREDA](http://www.tenderwizard.com/OREDA) only.
- **The work should be executed by a single bidder. Hence the bidder having valid test report for the both the system i.e. components of 5 KW SPV power plant and SPV street lighting system model- I are eligible to apply.**

### 3.2 SUBMISSION OF BIDS:

- The bids must be submitted only online on [www.tenderwizard.com/OREDA](http://www.tenderwizard.com/OREDA) portal.
- The bidder must ensure that the bids are received in the specified website as per the date and time indicated in the Tender notice.
- The bidders are advised to register their user ID, Password, company ID on website [www.tenderwizard.com/OREDA](http://www.tenderwizard.com/OREDA) by clicking on hyper link "**Register Me**".

#### 3.2.1 PROCEDURE FOR SUBMISSION OF ONLINE BIDS

##### A. ACQUISITION OF DIGITAL SIGNATURE CERTIFICATE

For participating in the bid it is mandatory to procure the Digital Signatures of **Class III only**.



## B. REGISTRATION IN TENDER WIZARD PORTAL

- Log in [www.tenderwizard.com/OREDA](http://www.tenderwizard.com/OREDA) Click “Register”, fill in the online registration Form.
- Un-registered bidders are required to pay registration fee of Rs 2300/- to M/s KSEDCL, Bangalore in tender wizard e-payment mode only.
- All bidders are required to pay the tender processing charge of Rs. 5900/- to M/s KSEDCL, Bangalore in tender wizard portal in **e-payment** mode only.
- As soon as the verification is done the e-tender user ID will be enabled/ provided.

## C. ON-LINE REQUEST FOR e-TENDER DOCUMENTS

After viewing Tender Notification in [www.tenderwizard.com/OREDA](http://www.tenderwizard.com/OREDA) if bidder intends to participate in tender, it has to use its e-tendering User ID and Password which has been received after registration and acquisition of DSCs (Digital signature certificate) and to follow the step by step instructions given below.

- Insert the PKI (which consists of your Digital Signature Certificate) in your System.  
**(Note: Make sure that necessary software of PKI has been installed in your system)**
- Click / Double Click to open the Microsoft Internet Explorer  
(This icon will be located on the Desktop of the computer)
- Go to Start > Programs > Internet Explorer. Type [www.tenderwizard.com/OREDA](http://www.tenderwizard.com/OREDA) in the address bar, to access the Login Screen.
- Enter e-tender User Id and Password, click on “Go”.
- Click on “Click here to login” for selecting the Digital Signature Certificate. Select the Certificate and enter DSC Password. Re-enter the e- Procurement User Id Password.
- Click “Un Applied” to view / apply for new tenders.
- Click on Request icon for online request. After making the request, bidder has to pay the requisite tender processing fee (as indicated in tender notice) through **e-payment** facility only available in the portal. Bidders will receive the Tender Documents which can be checked and downloaded by following the below steps.
  - Click on the “Show form” icon.
  - Tender documents will appear on the screen.
  - Click “Click here to download” to download the documents.

## D. SUBMISSION OF EMD AND TENDER COST:

The bidders shall have to scan the **Demand Draft** towards EMD and Tender Cost and upload the same in .pdf or .jpg format.

## E. SUBMISSION OF TECHNO-COMMERCIAL BIDS:

- The techno-commercial bid sheets in .xls format are to fill up and upload without changing the file name. Submission of incomplete techno commercial bid sheets will be liable for rejection of the bid.

- Scanned copies of all related documents as per the checklist shall be uploaded in .pdf or .jpg format prior to last date and time of receipt of bids as specified in tender Notice.

#### **F. SUBMISSION OF PRICE BIDS**

- The bidder should fill up price schedule in the given bid sheets in .xls format and up-load the same without changing the file name. The bid will be rejected if the schedule of price is submitted in incomplete form.

After completing all the formalities, Bidders will have to submit the tender as specified in NIT and must take care of all instructions. Prior to submission, verify whether all the required documents have been attached and uploaded to the particular tender or not.

##### **Note:**

- The bid sheets (.xls file) shall be uploaded in [www.tenderwizard.com/OREDA](http://www.tenderwizard.com/OREDA) portal, prior to online closing of the tender. By no other means (except online) price bid shall be accepted for evaluation of tender.
- Please note down or take a print of bid control number once it displayed on the screen.

#### **G. SUBMISSION OF HARD COPIES**

- Along with the e-tender, bidders shall also submit hard copies of all uploaded as well as other documents as asked for in the bid document in the form of a **single hard bound** book properly page numbered and Indexed.

**No loose/ separate paper or spiral bound documents will be accepted.**

- The bidders must sign at the bottom of all the pages of the hard bound book including each page of the bid document (which will also form an integral part of the hard bound book) as token of unconditional acceptance of the departmental terms and conditions, technical specifications etc.
- The Hard bound copy must be submitted in OREDA office at S-57, Mancheswar Industrial Estate, Bhubaneswar 751010 on or before the stated date in the manner prescribed elsewhere in the document. Submission extra/ unrelated documents may be avoided.

##### **Note:**

**Filled in price bids/copies of the uploaded price bids must not be submitted in hard form. Submission of the same in hard form will liable the tender for rejection.**

#### **4. DEAD LINE FOR SUBMISSION OF BIDS**

- Soft copy of the bid shall be uploaded through the portal [www.tenderwizard.com/OREDA](http://www.tenderwizard.com/OREDA) on or before the last date and time specified for online submission of the bids. **DD towards Tender cost, DD towards EMD, tender processing fee acknowledgement & a set of hard copies of all uploaded documents must be received by OREDA at the address specified not later than the time and date stated in the tender notification.**
- In the event of the specified date for the submission of bids being declared a holiday for

OREDA, the bids will be received on the next working day as per the time indicated in tender notification.

- OREDA may, at its discretion, extend this deadline for submission of bids by amending the Bidding Documents in accordance with Instruction to Bidders for the reasons specified therein at any time prior to opening of, in which case all rights and obligations of Employer and bidders will thereafter be subject to the deadline as extended.

## **5. LATE BIDS**

- Soft copy of the bid will not be uploaded on the portal after expiry of submission time and the bidder shall not be permitted to submit the same by any other mode. In such case, even if the bidder has submitted the specific documents in hard copy in original (viz., EMD, tender cost & any other document) within the stipulated deadline, its bid shall be considered as late bid. The hard copy submitted [specific documents (viz., EMD, tender cost.)] shall be returned unopened to the bidder.
- Hardcopy of the EMD in shape of DD if received by OREDA after the last date for submission of the bid the same will be considered as late bid even if the bidder has uploaded the soft copy of the bid within the stipulated deadline.
- In such a case, the soft part of the bid uploaded on the portal shall be sent unopened to "Archive" and shall not be considered at all any further.

## **6. MODIFICATION AND WITHDRAWAL OF BIDS**

- Bidder may modify or withdraw their bids through the relevant provisions on the portal [www.tenderwizard.com/OREDA](http://www.tenderwizard.com/OREDA) up to the due date and time of submission of bid indicated in tender notification
- The Bidders may modify and resubmit their bids as per the provisions given in the portal.
- Bidders may withdraw their bids through the relevant provisions as mentioned in the portal.

## **7. PROCEDURE FOR OPENING THE BIDS:**

- The Technical bid shall be opened at the time & date mentioned in the NIT by OREDA in the presence of bidders, who choose to be present. If necessary, the firms may be called for Technical Presentation the schedule for which will be intimated by OREDA.
- The Price bid shall be opened after evaluation of technical suitability of the offers. The date for opening of Price bid shall be communicated subsequently. The Price Bid of only those bidders shall be opened who qualify in the technical bid.
- If due to any reason the due date is declared as a holiday the bid will be opened on next working day at the same time.
- Tender Opening event can be viewed online.

- Competitors bid sheets can also be viewed by all participating bidders.

## **8. SELECTION OF VENDORS:**

Following opening of the price bids of technically qualified vendors the same will be evaluated by the designated purchase committee.

## **9. ALLOCATION OF WORK:**

The work will be allotted to only L1 bidder. Depending upon the performance of the vendors, Chief Executive, OREDA will be at liberty to cancel/modify/revise the work orders of any of the selected vendor.

**All supply / installation orders shall be placed with the state local registered office of the qualified vendor only.**

## **ISSUE OF LETTER OF INTENTS (LOI)**

- Allocation of work will be done through specific work orders issued in the name of the select bidders.
- Prior to issue of work orders a Letter of Intent will be issued to the selected bidders detailing out the quantity and scope of the works, locations of works, Bank Guarantees and documents to be submitted before issue of work orders, other deliverables, etc.
- Upon receiving the same the bidder is required to visit the project sites along with AD(T)/Technician of the concerned districts , discuss details of the project with the concerned customers, finalize the exact sites of installation, loads to be separated for connecting to the solar power plants, convenient dates of installation etc. as well as all logistics details. Following this the bidder has to submit a letter of acceptance of the Lol along with the required bank guarantees, work execution schedule etc. and after of the same by Chief Executive, OREDA formal work orders will be issued.

## **10. ACCEPTANCE/REJECTION:**

OREDA reserves the right to accept / reject any or all Tenders without assigning any reason thereof and alter the quantity of materials mentioned in the Tender documents at the time of placing purchase orders. Tender will be summarily rejected if:

- i) EMD is not deposited either in shape of Bank Draft in favor of OREDA payable at Bhubaneswar or in Bank Guarantee (BG).This shall not apply to those who are eligible for exemption from depositing EMD under NSIC etc. subject to submission of such exemption certificates.

**Note: EMD against previous Tenders, if any, will not be adjusted towards EMD against this Tender.**

- ii) Submission of incomplete technical and /or financial bid sheets.
- iii) Non submission of any of the documents (both soft and hard) as asked for in the tender document.
- iv) Submission of Late bids.

#### **11. VALIDITY OF OFFER:**

- The offer must be kept valid for a period of one year from the date of opening of the technical bid or till the completion of the project whichever is later. No escalation clause except the admissible tax component under the period of consideration would be accepted.

#### **12. WARRANTY:**

- The complete system should be warranted against any manufacturing defect or bad workmanship at least for a period of 5 (five) years from the date of commissioning of the systems.
- Major system sub-component SPV modules must be warranted against any manufacturing defect of bad workmanship for a period of 10 years.
- Warranty certificate to the above effect must be furnished along with the commissioning reports. Any defect noticed during warranty period should be rectified / replaced by the supplier free of cost upon due intimation by OREDA.

#### **13. PENALTY AND TERMINATION OF CONTRACT:**

- The systems shall be supplied, installed and commissioned within the scheduled time. If the bidder fails to adhere to the schedule, OREDA shall without prejudice to its other remedies under the contract deduct from the contract price as liquidated damages a sum equivalent to 1% of the delivery price of the delayed goods or unperformed services for each week of delay until actual delivery or installation/commissioning up to a maximum deduction of 5% of the contract price for delayed goods or installation and commissioning. Once the maximum is reached (i.e 5 weeks of delay) OREDA may consider termination of the contract and forfeit the security deposit without prejudice to the other remedies of the contract.
- However, Chief Executive, OREDA may at own discretion allow reasonable time extension upon written application of the supplying firm. If the delay is considered intentional or due to the negligence of the vendor, no extension can be allowed with imposition of penalty. If the delay is considered to be genuine time extension can be allowed without imposition of penalty.

- In case, the qualified bidder fails to take up and/or complete the project after acceptance without any substantial reason thereof, then besides forfeiting its EMD and revocation of Performance bank Guarantee, the bidder will be blacklisted and the event of such blacklisting will be intimated to all concerned and posted on the website of OREDA. Under such circumstance the decision of OREDA will be final.
- In case the qualified bidder resorts to any act of tampering/forging the data or documents in connection with assigned projects or mal-represent the case before the authority, then in such cases it would be construed to be a sufficient ground to blacklist the bidder.
- In case the qualified bidder fails to complete the project and abandons the same without any substantial reason, the firm will liable to be debarred from participating in subsequent tenders for a period of 1 year.
- In case any serious allegations are levelled against the qualified bidder by the customers or stakeholders whosoever, the authority shall have the right to take appropriate action against the bidder on necessary enquiry and establishment of the allegations thereof.

#### **14. FORCE MAJEURE:**

The supplier of the SPV system shall not be charged with liquidated damages nor shall his security for performance be forfeited when failure of the supplier in making delivery is due to any event beyond the control of the supplier and could not have been foreseen, prevented or avoided by a prudent person. These include, but are not restricted to acts of nature, acts of public enemy, acts of Government, fires, floods, epidemics, strikes, freights, embargoes and unusually severe weather.

#### **15. INSPECTION:**

- All tests and inspections shall be made at the place of delivery. Officers authorized by OREDA shall be entitled at all reasonable time to inspect and supervise and test during erection and commissioning. Such inspection will not relieve the executing firm of their obligation in the contract.
- OREDA shall have the right to have the tests carried out at its own cost by an independent agency at any point of time.

#### **16. PAYMENT:**

- **90 %** of the cost of system and installation charge along with all applicable tax shall be released upon commissioning of the systems at the location specified in the purchase order upon due verification by authorised officers and submission of following documents
-

- **Performance report signed by the Assistant Director, OREDA**
  - **JCC**
  - **Warranty**
  - **GPS based photograph**
  - **Web enabled generation report**
  - **I-V Curves**
  - **Operation manual**
  - **Dos & Don'ts in the form of a booklet**
  - **Conducting training programme**
  - **Photographs of all installations in the specified manner**
- Balance **10%** cost of the supplied materials, Installation & Commissioning charges will be released after 3 months successful performance following submission of the following documents
    1. **Submission of monthly/ hourly power consumption reports supported by the reading of inverter given with the power plant in the format given.**
    2. **Performance report of Street Lights duly signed by the head master of the school/authorised representative.**

## **17. EXECUTION:**

Execution of work shall be carried out in an approved manner as outlined in the technical specification or where not outlined, in accordance with relevant Indian Standard Specification, to the reasonable satisfaction of the Authorized OREDA Officer. The general schedule of execution will be as follows

- Under normal circumstances all ordered systems must be installed and commissioned in all respects within 90 days of receipt of firm work order from OREDA.
- Under exceptional circumstances Chief Executive, OREDA may consider to extend the execution period by a maximum of 90 days upon written application of the vendor stating justified reasons for delay which should be supported by the concerned customer and recommended by the concerned AD(T) of OREDA.
- Upon intimation about commissioning of the systems by the executing firm a joint inspection will be carried out by the representatives of the executing firm, OREDA and User organization.
- The issuance of a JCC shall, in no way relieve the executing firm of its responsibility for satisfactory operation of the power plant.

The bidder must securitize the execution schedule by providing bank guarantee equal to 10% of the ordered value from any nationalized bank with validity of 200 days from the date of issue of the work order. In case of delay beyond the approved period the bank guarantee will be encashed and retained by OREDA. Additionally penalty may be imposed / order may be terminated as per provisions in the tender.

## **18. COMPREHENSIVE MAINTENANCE CONTRACT (CMC):**

- Upon selection, the bidder must enter into a Comprehensive Maintenance Contract with OREDA for a period of 5 years from the date of commissioning of each project in the format given at Annexure-5. Willingness to execute such CMC will have to be submitted along with the tender.
- The broad scope of CMC shall cover
  - a. Routine visit to each project site at least once in 3 months.
  - b. Attend maintenance calls given by customer/ escalated by OREDA-CRC within maximum 3 days of receipt of the intimation.
  - c. Repair/Replace defective/malfunctioning spares/components within warranty period.
  - d. Provide monthly kWh meter reading to OREDA.

At the time of execution of maintenance contract the bidder shall deposit five numbers of bank guarantees (BG) each of value equal to 2 % of ordered value towards maintenance Performance Guarantee fees with the Chief Executive, OREDA having validity of 1, 2, 3, 4 and 5 years respectively from the date of commissioning of the systems.

The Performance Bank Guarantees will be returned after completion of 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> year maintenance and submission of reports thereon.

Annual Maintenance Charges (AMC) will be paid annually upon successful maintenance of the systems and submission all necessary reports thereon.

### **Note:**

**Execution of CMC and submission of Performance Bank Guarantees (Format at Annexure-6) are pre conditions for release of 1<sup>st</sup> payment of 90%.**

## **19. LIMITATION OF LIABILITY:**

OREDA, will, in no case be responsible for any accident fatal or non-fatal, caused to any worker or outsider in course of transport or execution of work. All the expenditure including treatment or compensation will be entirely borne by the Executants. The



Executants shall also be responsible for any claims of the workers including PF, Gratuity, ESI & other legal obligations.

**20. DISPUTE:**

For adjudication of any dispute between OREDA and the bidders arising in this case, reference can be made to any Law courts under the jurisdiction of Odisha High court only. The Chief Executive, OREDA reserves the right to accept or reject any or all bids without assigning any reason thereof.

**Chief Executive**

I/We have carefully read and understood the above terms and conditions of the bid and agree to abide by them.

**Signature of Bidder with Seal**

**For any assistant, Contact:**

**E-Tendering help desk number: 080- 40482000/121/133/140(Bangalore)**

**OREDA Help Desk- 09776823641/09937140591**

**Check list of documents to be uploaded on e-tender portal and to be submitted along with the hard copy of the bid**

<b>Sl. No</b>	<b>Particulars</b>	<b>Name of the file uploaded on e-tender portal</b>	<b>Page No. of the hard bound copy</b>
1	Cost of Tender document for Rs.10,500/- (Copy of Bank Draft to be uploaded & enclosed ) or exempt as admissible with proof.		
2	Acknowledgement for tender processing fee.		
3	Cost of EMD in shape of Bank Draft/ Bank Guarantee (Copy of DD/BG to be uploaded & enclosed)		
4	Forwarding letter duly signed and stamped by the bidder		
5	Undertaking duly signed and stamped by the bidder.		
6	Certificate of Unconditional Acceptance of all terms and conditions of the tender		
7	Confirmation to Technical Specification		
8	Copy of Board Resolution in the prescribed format (Applicable to Companies only)		
9	Declaration duly signed and stamped by bidder		
10	Letter of Authorization		
11	Undertaking to supply Indigenous items as per relevant guidelines of MNRE, GoI		
12	Willingness to open service centre in the state of Odisha and local registered office for execution of the works		
13	Power of attorney to sign the agreement on behalf of applicant & partnership deed articles, if any		
14	Valid document registering the status of the applicant as manufacturer /systems integrator		
15	Organizational Profile containing the original documents defining the constitution or legal status, place of registration / branches, annual off-grid and on-grid wise capacity of solar power plants installed for last 3 years.		
16	Willingness to open service centre in the state of Odisha and local registered office for execution of the works		
17	Undertaking to supply Indigenous items as per relevant guidelines of MNRE, GoI		
18	Copy of GST registration certificate in the name of bidder		
19	Copy of the PAN card in the name of bidder		
20	Copy of the TIN No. in the name of bidder		
21	Copy of Tax return of the bidding company/firm		

22	Turnover certificate over last three years (2015-18) exclusively in the business of solar PV duly certified by Chartered Accountant.		
23	Audited Balance Sheet in exclusively solar business		
	2015-16		
	2016-17		
	2017-18		
	Total		
24	Proof of cumulative capacity for installation of Solar PV Power plant with Work Completion Report as given format		
25	Proof of production capacity of SPV power plant		
26	Proof of Quality assurance systems 9001:2015 and ISO 14001:2015 certification		
27	Valid Test report of solar PV module		
28	Valid test report of Power Control Units (PCU)		
29	Valid test report of Battery		
30	Valid test report of Solar street lighting system		
31	Performance Report of last 3 years as given format		

**Signature of bidder with seal**

## TECHNICAL SPECIFICATION FOR 5 KW SPV POWER PLANT

The general scope under this contract includes to design, manufacture, testing, inspection, packing and forwarding, transportation up to project site, loading & unloading, storage in safe custody, erection, carrying out preliminary tests at site, commissioning, performance testing, operation and maintenance for 5 years & handing over to all the equipment of SPV Power plant on the respective sites / as per instruction from time to time. The illustrative Schedule of requirements is in accordance with the specifications contained in this document

### **System Details for 5 KWp Off-Grid Solar PV Power Plant:**

Sl. No.	Brief Description
1	SPV modules for a 5KWp Off-Grid Solar PV Power Plant, as per specifications
2	SPV module mounting structure suitable for accommodating 5KWp capacity SPV modules including foundation as per specifications on rooftop
3	PCUs as per specifications- 5 kVA, 1-Phase
4	Battery Bank as per Specification
5	Array Junction Boxes
6	Main Junction Boxes(optional)
7	DC Distribution units as per specifications
8	AC Distribution units as per specifications
9	Cables requirement as per design
11	Lightning arrester complete set as per specification
12	SPD (Protection device)
13	Earthing complete set as per specification
14	Recommended underground /sealed cabling up to distribution control panel
15	Providing training to engineers and site staff for operating Maintenance and trouble shooting skills, if necessary

### **1. SOLAR PV MODULES:**

The modules having capacity above 200Wp should only be provided in the array to obtain the required array power output. Indigenously produced PV module (s) containing mono/ multi crystalline silicon solar cells should only be used.

All modules must comply with to IEC 61215, 61730 part 1 & 2 (Certificates from MNRE test centres in support of such compliance must be submitted along with the tender document. The other criteria are as follows:

- Crystalline Silicon Solar Cell Modules IEC 61215 Edition (II)
- PV modules must have quality to IEC 61730 Part I & II, for safety qualification testing and to be used in a highly corrosive atmosphere throughout their lifetime, they must qualify to IEC 61701.

- PV modules used in solar power plants must be warranted for output wattage, which should not be less than 90% at the end of 10 years and 80% at the end of 25 years.
- Each PV module used in solar power project under this tender must use a RF identification tag (RFID), which must contain the following information. The RFID should be laminated inside the module and but must be able to withstand harsh environmental conditions.
  - Name of the manufacturer of PV Module.
  - Name of the manufacturer of Solar cells.
  - Month and year of the manufacture (separately for solar cells and module).
  - Country of origin (separately for solar cells and module).
  - I-V curve for the module.
  - Peak Wattage,  $I_m$ ,  $V_m$  and FF for the module.
  - Unique serial No and Model No of the module.
  - Date and year of obtaining IEC PV module qualification certificate.
  - Name of the test lab issuing IEC certificate.

## 2. MODULE MOUNTING STRUCTURE:

- Module mounting structures should be non-invasive type.
- The structure shall be hot dipped galvanised as per IS 2629/2633/4759 standard with minimum coating thickness of 80 micron .
- The structures should be laid on the roof and proper drainage of rain water over terrace through the installation area should be maintained.
- The structures should be suitably loaded with re-enforced concrete blocks of appropriate weight made out of M25 concrete mixture.
- Special care should be taken while designing all structures for modules to cater to heavy rainfall.
- The array shall be located sufficiently inside the boundary wall of the terrace (parapet wall) and should not be projecting out. PV array shall be installed in the terrace space free from any obstruction and/or shadow.
- PV array shall be installed utilizing optimum terrace space to minimize effects of shadows due to adjacent PV panel rows.
- Adequate spacing shall be provided between two panel frames and rows of panels to facilitate personnel protection ease of installation, replacement, cleaning of panels and electrical maintenance.
- Additional waterproofing if required shall be provided in the areas where RCC blocks are placed on the terrace.
- The minimum clearance between lower edge of PV panel and terrace ground level shall be 500mm to allow ventilation for cooling, also ease of cleaning and maintenance of panels as

well as cleaning of terrace.

- Each PV panel structure shall incorporate one bird repellent spike at a level higher than the panel upper edge. The location of the spike should be selected for minimum shadow effect.
- The support structure shall be free from corrosion when installed.
- PV modules shall be secured to support structure using screw fasteners and/or metal clamps. Screw fasteners shall use existing mounting holes provided by module manufacturer. No additional holes shall be drilled on module frames. Module fasteners/clamps shall be adequately treated to resist corrosion.
- Adequate spacing shall be provided between any two modules secured on PV array for improved wind resistance.
- The structure shall be designed to withstand operating environmental conditions for a period of minimum 25 years.
- The total load of the structure (when installed with PV modules) on the terrace should be less than 50 kg/m<sup>2</sup>. The load shall be well distributed so that point loads are well within the limits.
- The structure should be appropriately designed to withstand high wind velocities up to 180-200 km per hour. **The structure should be certified by the Chartered Engineer.**

### **3. JUNCTION BOXES (JBS):**

The junction boxes shall be dust and waterproof and made of thermo-plastic. The terminals will be connected to copper lugs or bus bar of proper sizes. The junction boxes will have suitable cable entry points fitted with cables glands. Suitable markings shall be provided on the legs or bus bar for easy identification and cable ferrules will be fitted the cable termination points for identification. Each main junction box shall be fitted with appropriate rating blocking diode. The junction boxes shall be of reputed make.

- Array Junction Box should be IP 65 as per IEC 60529 and should be provided with fuses and Isolators of suitable ratings.
- DC Distribution board should comply with IP 21 as per IEC 60529. It should be equipped with suitable rating of DC isolators for solar input from array junction box and fuse of suitable rating between PCU and battery.
- AC distribution board should comply with IP 21 as per IEC 529 and should be equipped with suitable rating of MCB between PCU and load.
- All switch, circuit breakers and connectors should comply with IEC 60947 (part –i, ii, iii) / is 60947 (Part-i, ii , iii).

#### 4. **BATTERY BANK:**

There will be one battery bank comprising of appropriate capacity for respective SPV Power Plant. The batteries should be VRLA Type and shall have long service life. The cells should confirm IS 15549/ IEC 61427 / IS 1651 / IS 133369 and as per specification given below shall be provided.

Battery Bank Capacity	Minimum 96 V and 400 Ah
Terminals	Made of lead alloy suitable for bolted connection. The terminals should be greased with petroleum gel.
Self Discharge	Less than 3% per month at 30 degree C
Life expectancy	1500 cycle duty at 27degree C at 80% depth of discharge 3000 cycle duty at 50% discharge.
Battery Voltage	2 Volt
Approval	Batteries shall have to be approved by any MNRE approved test centers
Service Life	Should perform satisfactory for a minimum period of 5 year under operating conditions as mentioned.

#### 5. **POWER CONDITIONING UNIT (PCU):**

As SPV array produce direct current electricity, it is necessary to convert this direct current into alternating current and adjust the voltage levels before powering equipment designed for nominal mains AC supply. 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" OR simply PCU. In addition, the PCU shall also house MPPT (Maximum Power Point Tracker), an interface between Solar PV array & the Inverter, to maximize Solar PV array energy input into the System. PCU should conform IEC 61683, IEC 60068, IEC 62116as per specifications.

PCU refers to combination of charge controller, inverter and AC charger and shall be supplied as integrated unit or separate units.

#### *Inverter:*

The inverter will be highly efficient. The inverter should confirm IEC 61683 /IS 61683, IS 16169/IEC 62116, IEC 60068 and should be based on MPPT design. Inverters would display its own parameters and the parameters of battery bank connected to the inverter. Beyond the maximum load the inverters will trip. The inverters should be designed to be completely compatible with the charge controllers and distribution panels and are of integrated design.

Salient features of the Inverters shall be as follows:

- The PCU should be designed to be completely compatible with the SPV array voltage.

- A Central inverter with MPPT shall be used with the power plant for maximum efficiency and shall be efficient based on PWM with IGBT/ reliable power based design.
- The sine wave output of the inverter shall be 230V, Single phase, 50 HZ AC.
- **There should be provision to charge the battery using Grid power as long as grid voltage is between 170V-265V. In case Grid voltage falls below 170V up to 130V, Grid charging shall stop but load shall continue to run using Grid supply not by Solar.**
- The peak inverter efficiency inclusive of built in isolation transformer shall exceed 85% at full load
- There should be provision to export excess PV power to grid in case the load consumption is less than the actual generation.**This is futuristic feature and provision should be there to enable or disable this export feature.**
- Inverter shall provide display of PV array DC voltage & current, Battery Voltage & Current, Inverter Voltage & Current, Grid voltage & Current, Battery charging status and required parameters when fault occurs. Remote monitoring of inverter parameters should be possible.
- Operating temperature Range shall be 0 to 55 deg C
- Maximum Power Point Tracker (MPPT) shall be integrated in the power conditioner unit to maximize energy drawn from the Solar PV array.
- The charge controller/ MPPT units should qualify to IEC standards.
- Online microprocessor based Data Acquisition Systems and Remote Monitoring facility for 365 days with data Recovery from remote location should equip.

Inverter Capacity	1 Phase, 230 V
Nominal Battery Voltage	96 VDC
Output frequency	50 Hz +/- 0.5 Hz
Overload Capacity	150% for 10 Second
Efficiency	80% at 50% of load and More than 90% at full load 0.8 PF
Short Circuit Protection	Circuit Breaker and Electronics protection against sustained fault.
Low Battery Voltage	Automatic Shut Down
Total Harmonic Distortion	Less than 3%
Over Voltage	Automatic Shut Down
AC over Current/Load	Automatic Shut Down
Protection	Over Voltage both at Input & Output Over Current both at Input & Output Over Frequency Surge voltage inducted at output due to external source.
Protection Degree	IP20/IP21
Instrumentation & Indication	Input & Output voltage, Input & Output Current, Frequency, Power output, different status of inverter, kind of fault by audio signal.

### *Charge Controller Unit:*



The Charge Controller shall be dual input type, where under normal condition the input is fed from a SPV panel and in the absence of SPV power or low SPV power conditions an external single phase AC source can be used for battery charging. A selector switch shall be provided for choosing between those modes. When the batteries are charged from external AC sources, the charging current should be set manually depending on the capacity of the source and the charging requirement of the batteries. The charge controller shall be of MPPT type employing IGBT switching elements.

Charge controller should confirm IEC 62093 / IEC 60068 as per specification.

The charging sequence from SPV array or external AC source shall be as follows:

#### *From SPV Array:*

The battery shall be charged at the maximum rate depending on the solar radiation until the battery terminal voltage reaches 2.25 volts per cell. The battery charging should be automatically terminated when the rate of increase of battery voltage is steady (dv/dtsensing). The charger shall switch on the „trickle charge after this.

#### *From AC Source:*

The battery shall be charged at the rate manually set depending on the battery condition or capacity of AC source. The maximum rate shall be internally preset.

The battery charging should be automatically terminated when the rate of increase of battery voltage is steady (dv / dt sensing) or when the battery terminal voltage reaches 2.75 volts per cell.

Salient features of the Charge Controller shall be as follows:

Switching elements	IGBT/MOSFET
Type of Charger	PWM
Input :	From Solar PV array
Output Voltage:	Suitable for charging nominal battery bank from respective capacity of SPV array.
Protections:	Short Circuit, Deep Discharge, Input Surge Voltage, Over Current (load), Battery Reverse Polarity, Solar array reverse polarity.
Indication :	String „ON“, Main „ON“, Charging „ON“, 80% Charged, 100% Charged, Charger Overload, Battery On Trickle.

Battery disconnected / Fault Battery Reverse Polarity, Low Solar Power, System Fault and Charger over Temperature and Input Over / Under Voltage (for AC).

MIMIC Diagram: To indicate power flow and operation of the charge controller/ battery charger; shall have provision for visual indications of existing power input/output through MIMIC diagram.

You may design Power Conditioning Unit (PCU), which consist of a solar charge controller & inverter as per design mentioned above. In addition, it should have a Grid Charger.

It provides the facility to charge the battery bank either through Solar or Grid set. The PCU continuously monitors the state of Battery Voltage, Solar Power output and the loads. Due to sustained usage of power, when the Battery Voltage falls below a preset level, the PCU will automatically transfer the load to the grid power and also charge the Batteries through the in-built Grid Charger. Once the batteries are charged to the present level, the PCU cuts off the Grid power from the system and will restore to feeding the loads from the battery bank & continue to charge the battery bank from the available solar power.

The PCU always gives preference to the solar power and will use Grid power only when the solar power / battery charge is insufficient to meet the load requirement.

**Salient Features:**

- Priority of charging is from Solar panels.
- Over heating Protection.
- Dual Display Showing PV & Inverter output.
- Short circuit & Over load Protection.
- Inbuilt Heavy Duly Solar Charge Controller.
- No Load Shut Down for load = 5% (not applicable for > 1 kVA systems) Fully equipped with powerful Grid Charger.
- User friendly client and Web based Software.

**6. AC DISTRIBUTION PANEL BOARD:**

The AC Distribution Board shall consist of the components as per designed PCU.

**7. CABLES & WIRINGS:**

The Cable & Wires should comply to IEC60227 or IS694 & IEC60502 or IS1554 BSEL50618(for DC cables for PV systems). The details are as follows:

- Cables running between solar panels and array junction box should be 4 Sqmm copper flexible.
- Cables running between AJB and DCDB should be of 25Sqmm copper flexible cable.
- Cable running between PCU and battery should be 25Sqmm coppers flexible cable.
- Cable running between PCU and ACDB should be 6 Sqmm Copper cables.
- All copper flexible cables should comply to IS651 and make should be Polycab, Havells or equivalent.
- Colour code should be followed for over all wiring i.e, red for positive, black for negative, green for earth.

- All cable should run in suitable PVC Conduits .No cable should be directly exposed to sunlight.

#### **8. DANGER PLATES:**

The bidder have to provide at least 8 Danger Notice Plates of 200 mm X 150 mm made of mild steel sheet, minimum 2 mm thick and vitreous enamelled white on both sides and with inscription in signal red colour on front side as required. The inscription shall be in English and local language. Out of eight, four danger notice shall have to be provided at PV Power plant& Four-danger notice at Control Room & Battery room.

#### **9. LIGHTENING & OVER VOLTAGE PROTECTION SYSTEM:**

- The SPV power plant should be provided with Lightning and over voltage protection, connected with proper earth pits. The main aim of over voltage protection is to reduce the over voltage to a tolerable level before it reaches the PV or other sub-system components. The source of over voltage can be lightning or other atmospheric disturbance.
- The lightning Conductors shall be made of 25 mm diameter 4000 mm long GI spike as per provisions of IS 2309-1969. Necessary concrete foundation for holding the lightning conductor in position to be made after giving due consideration to maximum wind speed and maintenance requirement at site in future. The lightning conductor shall be earthed through 20 mm X 3 mm thick GI flat earth pits/earth bus made with 25 mm X 5 mm GI flats.
- Most areas of the State being prone to lightening, Type-II SPDs shall be included as a mandatory requirement.
- Similarly Type I+II SPD should also be provided on the grid side in ACDB or PCU to protect the PCU from damage

#### **10. EARTHING SYSTEMS:**

Chemical Earthing (Maintenance Free) system including Lightning & Surge Protection arrangement to be provided.Earthing system design should be as per the standard practices and should conform to the latest edition of IS 3043.

#### **11. DISPLAY BOARD:**

You shall provide the display board of size 3 ft x 3 ft that gives detailed circuit diagram of the system with its description.

#### **12. COMPREHENSIVE MAINTENANCE CONTRACT (CMC):**

- The PV module (s), battery bank, Inverter and other sub - components will be warranted as per the given clause. The manufacturers can also provide additional information about the system and conditions of warranty as necessary.

- Scope of Operation & Maintenance of SPV Power Plant for a period of 5 years from date of commissioning
- Regular maintenance of the SPV Power Plant for a period of 5 years after commissioning along with supply of consumable items.
- The breakdown maintenance of the entire system including supply of necessary spare parts if any shall be for a period of 5 years from the date of commissioning of power plant
- 5 years maintenance period shall begin on the date actual commissioning of the power plant.
- Normal and preventive maintenance of the power plant shall be covered under CMC.
- During maintenance period of the power plant, if there is any loss or damage of any component of the power plant due to miss management/miss handling or due to any other reasons pertaining to the vender's deputed personnel, what-so-ever, the vender shall be responsible for immediate replacement/rectification. The damaged component may be repaired or replaced by new component. It is understood after examination the performance of the component or the system shall not degrade.

### **13. DRAWINGS & MANUALS:**

2 copies 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 and distribution for street lighting system along with protection equipment. Approved ISI and reputed makes for equipment be used.

### **14. REMOTE MONITORING SYSTEM:**

For better appreciation, the Solar PV Power plant must be provided with remote monitoring system. In case of mobile network is not available, the same may be provided with data dumping system.

Monthly Report have to be submitted to OREDA. The format is given at Annexure-7.

### TECHNICAL WHITE-LED (W-LED) BASED SOLAR STREET LIGHTING SYSTEM, MODEL-I

A standalone solar photovoltaic street lighting system (SLS) is an outdoor lighting unit used for illuminating a street or an open area. The Solar Street Lighting System consists of solar photovoltaic (SPV) module, a luminaire, storage battery, control electronics, inter-connecting wires/cables, module mounting pole including hardware and battery box. The luminaire is based on White Light Emitting Diode (W-LED), a solid state device which emits light when electric current passes through it. The luminaire is mounted on the pole at a suitable angle to maximize illumination on the ground. The PV module is placed at the top of the pole at an angle facing south so that it receives solar radiation throughout the day, without any shadow falling on it. A battery is placed in a box attached to the pole.

Electricity generated by the PV module charges the battery during the day time which powers the luminaire from dusk to dawn. The system lights at dusk and switches off at dawn automatically.

#### Model- I

(Dusk to Dawn, Full Light Level)

#### **BROAD PERFORMANCE SPECIFICATIONS**

PV Module	40 Wp under STC
Battery	Tubular LMLA 12V- 40 AH @ C/10
Light Source	White Light Emitting Diode (W-LED) 7 Watt (Max.), W-LED luminaire, dispersed beam, soothing to eyes with the use of proper optics and diffuser
Light Out put	Minimum 16 Lux when measured at the periphery of 4 meter diameter from a height of 4 meter. The illumination should be uniform without dark bands or abrupt variations, and soothing to the eye. Higher light output will be preferred.
Mounting of light	Minimum 4 metre pole mounted
Electronics Efficiency	Minimum 85% total
Duty Cycle	Dusk to dawn
Autonomy	3 days or Minimum 42 operating hours per permissible discharge

## 1. PV MODULE

- Indigenously manufactured PV module should be used.
- The PV module should have crystalline silicon solar cells and must have a certificate of testing conforming to IEC 61215 Edition II / BIS 14286 from an NABL or IECQ accredited Laboratory.
- The power output of the module(s) under STC should be a minimum of 40 Wp at a load voltage\* of  $16.4 \pm 0.2$  V.
- The open circuit voltage\* of the PV modules under STC should be at least 21.0 Volts.
- **The module efficiency should not be less than 12 %.**
- The terminal box on the module should have a provision for opening it for replacing the cable, if required.
- There should be a Name Plate fixed inside the module which will give:
  - Name of the Manufacturer or Distinctive Logo.
  - Model Number
  - Serial Number
  - Year of manufacture
- **A distinctive serial number starting with NSM will be engraved on the frame of the module or screen printed on the tedlar sheet of the module.**

\*The load voltage and Voc conditions of the PV modules are not applicable for the system having MPPT based charge controller

## 2. BATTERY

- Compact maintenance free batteries based on Lithium ion family shall be used.
- The battery will have a minimum rating of 12V, 40 Ah at C/10 discharge rate.
- 75 % of the rated capacity of the battery should be between fully charged and load cut off conditions.
- Battery should conform to the latest BIS/ International standards.

## 3. LIGHT SOURCE

- The light source will be a white LED type.
- The colour temperature of white LED used in the system should be in the range of 5500°K–6500°K.
- W-LEDs should not emit ultraviolet light.
- The light output from the white LED light source should be constant throughout the duty cycle.
- The lamps should be housed in an assembly suitable for outdoor use.
- The temperature of heat sink should not increase more than 20°C above ambient temperature during the dusk to dawn operation.

## 4. ELECTRONICS

- The total electronic efficiency should be at least 85%.
- Electronics should operate at 12 V and should have temperature compensation for proper charging of the battery throughout the year.
- No Load current consumption should be less than 20 mA.
- The PV module itself should be used to sense the ambient light level for switching ON and

OFF the lamp.

- The PCB containing the electronics should be capable of solder free installation and replacement.
- Necessary lengths of wires/cables, switches suitable for DC use and fuses should be provided.

## **5. ELECTRONIC PROTECTIONS**

- Adequate protection is to be incorporated under “No Load” conditions e.g. when the lamp is removed and the system is switched ON.
- The system should have protection against battery overcharge and deep discharge conditions.
- Fuse should be provided to protect against short circuit conditions.
- Protection for reverse flow of current through the PV module(s) should be provided.
- Electronics should have temperature compensation for proper charging of the battery throughout the year.
- Adequate protection should be provided against battery reverse polarity.
- Load reconnect should be provided at 80% of the battery capacity status.

## **6. MECHANICAL COMPONENTS**

- A corrosion resistant metallic frame structure should be fixed on the pole to hold the SPV module.
- The frame structure should have provision to adjust its angle of inclination to the horizontal, so that it can be installed at the specified tilt angle.
- The pole should be made of Galvanised Iron (GI) pipe.
- The height of the pole should be 4 metres above the ground level, after grouting and final installation.
- The pole should have the provision to hold the luminaire.
- The lamp housing should be water proof and should be painted with a corrosion resistant paint.
- A vented, acid proof and corrosion resistant metallic box with a locking arrangement for outdoor use should be provided for housing the battery.

## **7. INDICATORS**

- The system should have two indicators, green and red.
- The green indicator should indicate the charging under progress and should glow only when the charging is taking place. It should stop glowing when the battery is fully charged.
- Red indicator should indicate the battery “Load Cut Off” condition.

## **8. QUALITY AND WARRANTY**

- **The street lighting system (including the battery) will be warranted for a period of five years from the date of supply.**
- **The PV module(s) will be warranted for a minimum period of 25 years from the date of supply.** The PV modules must be warranted for their output peak wattcapacity, which should not be less than 90% at the end of Ten (10) years and 80% at the end of Twenty five (25) years.

- The Warranty Card to be supplied with the system must contain the details of the system.

## **9. OPERATION AND MAINTENANCE MANUAL**

An Operation, Instruction and Maintenance Manual, in English and the local language, should be provided with the Solar Street Lighting System. The following minimum details must be provided in the Manual:

- Basic principles of Photovoltaic.
- A small write-up (with a block diagram) on Solar Street Lighting System - its components, PV module, battery, electronics and luminaire and expected performance.
- Type, Model number, Voltage & capacity of the battery, used in the system.
- The make, model number, country of origin and technical characteristics (including IESNA LM-80 report) of W-LEDs used in the lighting system.
- About Charging and Significance of indicators.
- Clear instructions about erection of pole and mounting of PV module (s) and lamp housing assembly on the pole.
- Clear instructions on regular maintenance and trouble shooting of the Solar Street Lighting System.
- DO's and DONT's.
- Name and address of the contact person for repair and maintenance, in case of non-functionality of the solar street lighting system.



**PRICE BID for 5 KW OFF-GRID SPV POWER PLANT**

SI No	Particulars	Price in INR
1	Design & Supply of 5KWp Off-grid Solar PV Power Plant as per the technical specification given in the tender	
2	GST@5% levied on Sl. No-1	
3	Sub Total ( 1 +2)	
4	Cost of Installation and commissioning of the system	
5	GST@18% levied on Sl. No-4	
6	Sub Total (4+5)	
7	CMC for 5 years from the date of Commissioning 1 <sup>st</sup> year 2 <sup>nd</sup> year 3 <sup>rd</sup> year 4 <sup>th</sup> year 5 <sup>th</sup> year	
8	GST@18% levied on Sl. No-7	
9	Sub Total (7+8)	
10	<b>Grand Total (3+6+9)</b>	

**PRICE BID (SOLAR STREET LIGHTING SYSTEM- W-LED BASE SOLAR STREET LIGHTING, MODEL-I)**

SI No	Particulars	Price in INR
1	Design & Supply of W-LED based Solar street lighting system: Model-I as per the technical specification given in the tender	
2	GST@5% levied on SI. No-1	
3	Sub Total ( 1 +2)	
4	Cost of Installation and commissioning of the systems	
5	GST@18% levied on SI. No-4	
6	Sub Total (4+5)	
7	CMC for 5 years from the date of Commissioning 1 <sup>st</sup> year 2 <sup>nd</sup> year 3 <sup>rd</sup> year 4 <sup>th</sup> year 5 <sup>th</sup> year	
8	GST@18% levied on SI. No-7	
9	Sub Total (7+8)	
10	<b>Grand Total (3+6+9)</b>	

## Forwarding Letter

**(To be submitted in the letter head of the applicant)**

To,

The Chief Executive  
Odisha Renewable Energy Development Agency (OREDA)  
S.59. MIE, Bhubaneswar -751010  
Odisha.

Sub:- Submission of tender for Design, supply, installation, commissioning and maintenance for a period of 5 years of 5 Kw SPV power plant and Street Lighting system as per the technical specification and description given in the tender document in Residential Schools in Anugul districts of the State.

Sir,

Having studied the bid document carefully I/we, the undersigned, offer to submit our bid for Design, supply, installation, commissioning and maintenance for a period of 5 years of 5 KW Solar PV Power Plants (with battery backup), Solar Street Lighting Systems (SLS), as per the technical specification and description given in the tender document in Schools in Anugul district of the State.

I/We have also read the various provisions therein and confirm that the same are acceptable to us. We further declare that any additional conditions, variations, deviations, if any, shall not be given effect to. We further understand that **any deficiency / illegibility in documents shall make our application liable for rejection.**

I/we submit our application understanding fully well that

- (a) The documents submitted along with our application are subject to verification by appropriate authorities.
- (b) OREDA reserves the right to accept or reject any application or the empanelment process itself without assigning any reasons thereof and shall not be held liable for any such action.
- (c) Any genuine changes made by OREDA in the interest of the work with respect to the technical requirement during the course of project implementation will be acceptable.
- (d) All acts, rules, regulations, norms and conditions of Govt of India and Govt of Odisha shall be applicable during the process of empanelment as well as during the period of execution of project.

We hereby declare that all the information and statements made in this proposal are complete, true and correct and also accept that any misinterpretation contained in it may lead to our disqualification.

We hereby declare that our application has been submitted in good faith and the information contained is true and correct to the best of our knowledge and belief.

**Yours faithfully,**

**Signature of bidder with seal**

### UNDERTAKING BY THE BIDDER

#### I/we here by undertake that

1. We have thoroughly read and examined the notice inviting tender and the tender document along with all its schedules, annexure etc.
2. The rates quoted by us are firm and final and are meant for execution of the allotted supply / installation within the time frame stipulated in the tender/supply / installation order.
3. All terms and conditions of the tender including the rates quoted by us shall remain valid for a period of min one year from the date of opening of the technical bids.
4. In case our tender is incomplete in any respect or we violate any of the prescriptions given in the tender for submission of the same OREDA shall , without prejudice to any other right or remedy , be at liberty to forfeit the earnest money deposited by us.
5. In case of award of supply / installation in our favour OREDA shall have the right to convert the EMD deposited by us in to full or part (as the case may be) of the security deposit to be deposited by us against award of the supply / installation.
6. In case we fail to commence or complete the supply / installation as per the time schedules or fail to fulfill any of the terms and conditions given in the tender OREDA shall , without prejudice to any other right or remedy , be at liberty to forfeit the security deposit made by us against the award of the supply / installation.
7. I/We hereby declare that I/We shall treat the tender documents, specifications and other records connected with the supply / installation as secret/confidential and shall not communicate information derived there-from to any person other than a person to whom I/We have authorized to communicate the same or use the information in any manner prejudiced to the safety of OREDA/the State Govt.
8. I/We shall abide by all the laws prevailing at the time of the execution of the supply / installation and shall be responsible for making payments of all the taxes, duties, levies and other Govt. dues etc. to the appropriate Govt. departments.
9. The entire tender document has been discussed in the Board meeting and a resolution has been concurred for participation in the tender (copy enclosed as given format)
10. We are not blacklisted / debarred / defaulted in any manner by any Central / State Government / Public Sector Undertaking in India.
11. In case any false documents submitted and found any time in future the firms shall be liable to be proceeded against as per prevailing laws.
12. Our state commercial tax / TIN registration no. is \_\_\_\_\_ and CST registration No. \_\_\_\_\_.  
The PAN No. under the Income Tax Act is \_\_\_\_\_ and Service Tax Registration No. is \_\_\_\_\_
13. I/We shall be responsible for the payment of the respective taxes to the appropriate authorities and should I/we fail to do so, I/we hereby authorize OREDA to recover the taxes due from us and deposit the same with the appropriate authorities on their demand.

**Signature of bidder with stamp & date**

**Letter of Authorization**

**(To be submitted in the letter head of the bidder)**

To,  
Chief Executive  
Odisha Renewable Energy Development Agency  
S-59, MIE, Bhubaneswar-751010  
Odisha

Sub:Submission of tender for Design, supply, installation, commissioning and maintenance for a period of 5 years of 5 Kw SPV power plant and Street Lighting system as per the technical specification and description given in the tender document in Residential Schools in Anugul districts of the State..

Ref: Tender Call **NoticeNo.** -----/ **OREDA, dtd** -----.

Sir,

I/we hereby authorise Ms. /Mr. \_\_\_\_\_ , Designation .....of our company to sign all relevant documents on behalf of the company/firm in dealing with the above tender. She / He is also authorized to attend all meetings and submit technical and commercial information as may be required by OREDA in the course of processing of the tender.

We further authorise Ms. /Mr. \_\_\_\_\_ designation..... of our company to make technical presentation on behalf of the company.

Signature of the authorise persons

1. \_\_\_\_\_
2. ....

Signature attested

Name and designation of the attesting officer with stamp.

**Yours faithfully**

**Head of the organization**

**DECLARATION**

**(To be submitted on the letter head of the company)**

To,

The Chief Executive,  
Odisha Renewable Energy Development Agency,  
S-59, MIE, Bhubaneswar 751 010,  
Odisha.

Sub:-Submission of tender for Design, supply, installation, commissioning and maintenance for a period of 5 years of 5 Kw SPV power plant and Street Lighting system as per the technical specification and description given in the tender document in Residential Schools in Anugul districts of the State.

Ref:- Tender call Notice No. \_\_\_\_\_ /OREDA, dt. \_\_\_\_\_ /

Sir,

I/we hereby declare the following in the context of the aforementioned tender that:

- a) The entire tender document has been discussed in the Board meeting and a resolution has been passed for participation in the tender (copy enclosed as given format)
- b) We are not involved in any litigation that may have an impact of affecting or compromising the delivery of services as required under this tender
- c) We are not blacklisted / defaulted in any manner by any Central / State Government / Public Sector Undertaking in India.
- d) In case any false documents submitted and found in future the firms shall be liable to be proceeded against as per prevailing laws.

Yours faithfully,

Authorised signatory

(Stamp).

**Certificate of Unconditional Acceptance of the tender**  
**(To be submitted on the letter head of the company)**

We \_\_\_\_\_ a prospective bidders for the work of “Submission of tender for Design, supply, installation, commissioning and maintenance for a period of 5 years of 5 Kw SPV power plant and Street Lighting system as per the technical specification and description given in the tender document in Residential Schools in Anugul districts of the State.” here by certify that we have carefully studied and understood the contents of the entire bid document comprising of .....pages hoisted on the website of OREDA as well as tenderwizard.com/OREDA on Dtd. .... having NIT No. .... dated ..... and hereby confirm our unconditional acceptance to each and every line of the said bid document.

Date:.....

(Signature).....

Place:.....

(Printed Name).....

(Designation).....

(Common Seal).....

**Confirmation to Technical Specifications**  
**(To be submitted on the letter head of the company)**

Certified that we have carefully read and understood the technical specifications of the products and services to be provided under this tender and we hereby confirm our total adherence to the given technical specifications. The test certificates provided by us also base on the same technical specifications/ parameters.

Date:.....

(Signature).....

Place:.....

(Printed Name).....

(Designation).....

(Common Seal).....



## Format of Work Completion Report

(Each Installation will have a separate Work Completion Report)

Sl. No.	Particulars	Details to be filled-up
1	Location (GPS Co-ordinates)	
2	Customer's Name & Contact Details	
3	Capacity of Solar Power Plant/Street lighting system	
4	Type of Solar Plant(Off-grid/On-grid)/ Street lighting system	
5	Date of Commissioning of the Project	
6	Copy of Completion report submitted to MNRE or State Nodal Agency if any	
7	URL of Remote Monitoring System (Mandatory for the plant capacity of 5 KW or above)	
8	Joint commissioning certificate duly signed by customer & the applicant	
9	URL of GPS tagged site location as uploaded on MNRE SPIN website etc if any	
10	Photograph of the project with the customer in the inset.	

**Signature of bidder with stamp & date**

## Annexure-1

## Component wise requirement of test certificate

S/N	Major Component	Test Certificates Required	Test description	Designated Test Labs
1	Crystalline Silicon Terrestrial PV Modules	IEC 61215	Design qualification	UL India( up to 400 Wp), TUV Rheinland( up to 400 Wp) , NISE(up to 100 Wp), ETDC
		IEC 61730	Safety Qualification	UL India( up to 400 Wp), TUV Rheinland( up to 400 Wp)
		IEC 61701	Salt Mist Corrosion Test	UL India( up to 400 Wp), TUV Rheinland(upto 350 Wp), ETDC ( up to 100 Wp)
2	Power Control Units (PCU)	IEC 61683	Efficiency Test	UL India( up to 50 KVA), TUV Rheinland(upto 20 KVA) , NISE(upto 10 KVA), ERTL, ETDC( upto 3 KVA), CPRI(upto 10 KVA), ERTL North(upto 5 KVA), Intertek(upto 5 KVA)
		IEC 60068	Environmental Test	UL India (upto 250 KVA), TUV Rheinland, NISE, ERTL,ETDC,CPRI, ERTL, Intertek
		IEC 62116	Islanding prevention for on-grid	UL India (upto 50 KVA), NISE
		IP 20	Protection from touch by fingers and objects greater than 12mm but not from liquids	TUV Rheinland, NISE
		IP21	Protection from touch by fingers and objects greater than 12mm and from condensation	TUV Rheinland,NISE
3	Battery	IS 15549 - 2005	As per IS 15549 -2005	NTH,NISE, ERTL East(upto 1000H),ETDC(upto 100 AH),CPRI(upto 1000AH)
4	Street Lights	As per MNRE Specs	As per MNRE	CPRI,ETDC,UL India,TUVRheinland (W-LED), NISE,ERDA,ERTL(East),

**Annexure-2**

**Model Bank Guarantee format for Furnishing EMD**

Whereas ..... (herein after called "tenderer") has submitted their offer dated ..... for the supply of -----  
----- (herein after called "tenderer") against the purchaser's tender enquiry No.  
.....

KNOW ALL MEN by this present that we ..... of  
..... having registered office at ..... are bound onto  
..... (herein after called "Purchaser") in the sum of  
..... for which payment will and truly to be made to the said purchaser, the bank binds itself, its successors and assigns by this presents.

Sealed with the

Common Seal of the said Bank this .....day of 20.....

**THE CONDITIONS OF THIS OBLIGATIONS ARE**

- 1) If the tenderer withdraws or amends, impairs or derogates from the tender in any respect within the period of validity of this tender.
- 2) If the tenderer having been notified of the acceptance of his tender by the purchaser during the period of its validity;-
  - a. If the tenderer fails to furnished the performance security for the due performance of the contract.
  - b. Fails or refuses to accept / execute the contract.

We undertake to pay the purchaser up to the above amount upon receipt of its first written demand, without the purchaser having to substantiate its demand, provided that in its demand the purchaser will note that the amount claimed by it due to it owing to the occurrence of one or both the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to one year from the date of submission of bid and any demand in respect thereof should reach the bank not later than the above date.

Our ..... branch at .....\* (Name and address of the  
.....\* branch) is liable to pay the guaranteed amount depending on the filling of claim and any part thereof under this bank Guarantee only and only if you serve upon us at our  
.....\* branch a written claim or demand and received by us at our  
.....\* branch on or before Dt..... otherwise bank shall be discharged of all liabilities under this guarantee thereafter.

.....  
Signature if the authorized officer of the bank

.....  
Name and Designation of the officer

.....  
Seal, Name and address of the Bank and the Branch

\* Preferably at the head quarter of the authority competent to sanction the expenditure for purchase of goods or at the concerned district headquarter or the state headquarter.

**Annexure-3**

**BOARD RESOLUTION**

**(To be submitted on pre-printed Corporate Letter Head)**

CERTIFIED TRUE COPY OF THE RESOLUTION PASSED IN THE MEETING OF THE BOARD OF DIRECTORS OF M/S.....

HAVING ITS REGISTERED OFFICE AT..... HELD ON DD/MM/YY AT.... HRS

Resolved that the company/firm do agree to participate in the tender invited by OREDA vide Notice No ..... Dtd..... for Design, supply, installation, commissioning and maintenance for a period of 5 years of 26X 5 Kw Solar PV Power Plants (with battery backup), 270 Solar Street Lighting Systems in 27 schools as per the technical specification and description given in the tender document in Residential Schools located in Angul district of Odisha.

RESOLVED FURTHER THAT, the company/firm does agree to unconditionally accept all terms and conditions mentioned in the aforementioned tender document.

RESOLVED FURTHER THAT, subject to eligibility, the company/firm agree to open an effective service center in the state of Odisha, preferably in the vicinity of projects so as to cater regular maintenance services to the customers of the company/firm.

RESOLVED FURTHER THAT, Ms/Mr ..... Director and/or Ms/Mr..... authorized signatory of the company be and hereby authorized to sign, execute and submit such applications, undertakings, agreements and other requisite documents writings and deeds as may be deemed necessary or expedient to implement the above assignment

AND RESOLVED FURTHER THAT, the common seal of the company is affixed, wherever necessary, in the presence of any Director of the company who shall sign the same as token of the presence.

For .....

Chairman/Company Secretary

Name of the Authorized person

Specimen Signature of Authorized person

**The above signature to be attested by the person signing the resolution**

## Annexure-4

**Format of Performance for last 3 years**  
(To be submitted on letter head of company)

Sl. No	Particulars	Details to be filled up
1	Name of the bidder and contact details	
2	Status of bidder (Manufacturer/System integrator)	<i>In support of this the bidder may submit valid certificate from MNRE/Other state agency/Rating agency</i>
3	Production/Integrating capacity per annum	<i>In support of this the bidder may submit valid Production/integrating certificate from NSIC/DIC/OSIC</i>
4	Total amount of solar system (On/Off-grid Power plant, Street light, Solar Pump, Home lighting system) installed in kWp in 3 years (2015-18)  2015-16  2016-17  2017-18	<i>Please submit year wise installed data along with roofs thereof such as work completion reports by the concerned customer.</i>
5	Annual Turnover over last 3 years (2015-18)  2015-16  2016-17  2017-18	
6	No. of employee currently working	
7	Awards/Honours received during 3 year	

Date:.....(Signature).....

Place:..... (Printed Name).....

(Designation).....

(Common Seal).....

**Annexure-5****SAMPLE FORMAT FOR C.M.C**

(Subject to modification as per suitability of system and project requirement)

Comprehensive Maintenance Contract (CMC) for maintenance of SPV power plant supplied and install by M/S .....

.....

for five years.

---

This Comprehensive Maintenance Contract (CMC) is executed between the Orissa Renewable Energy Development Agency ( OREDA ) , S-3-59, Mancheswar Industrial Estate, Bhubaneswar-10, represented by its Deputy Director ( Tech), Project Division herein after called as 1st. party and M/S .....herein after called as 2<sup>nd</sup> party, for maintenance of ..... sets of .....for a period of five years with effect from ..... AD, supplied, installed and commissioned vide purchase order No ..... Dated ..... in ..... village ..... blocks of ..... Districts.

The 2<sup>nd</sup> party will maintain these ..... Systems as per the terms and conditions mentioned here under.

1. It has been envisaged in the purchase order No ...../ OREDA dated ..... under clause No ..... that these ..... No/sets of ..... shall be warranted against any manufacturing defect and bad workmanship at least for a period of 5 years for the system and battery and 10 years for the PV modules from the date of commissioning . As these systems have been commissioned and handed over to the 1<sup>st</sup> party through its Assistant Director ( Tech) / authorized OREDA official at DRDA ..... During ..... all these systems , as such are covered under warranty period up to ....., ..... and ..... respectively. Hence, the 2<sup>nd</sup> party is fully responsible for their trouble free maintenance

and the 2<sup>nd</sup> party is liable to rectify / remove any defect noticed within the aforesaid period free of cost.

2. The 2<sup>nd</sup> party will impart training to two nos. of youth from each completed village to be able to provide first aid repair service for the SPV systems installed in the village.

3. The 2<sup>nd</sup> party will ensure a formal training of such identified youth (2 from each village) at a cluster level of villages in consultation with the 1<sup>st</sup> party.

4. An amount of 10% of the ordered value shall be kept as fees towards Performance guarantee for a period of 10 years of warranty & maintenance . After expiry of the successful and satisfactory maintenance period of 10 years which remains valid up to ..... AD , the security deposit / PGF shall be returned to the 2<sup>nd</sup> party thereafter only.

5. The CMC includes repair/ replacement of all spares and consumable, including CF Lamp, battery & PV module during the maintenance period.

6. The 2<sup>nd</sup> party will setup a state level office at Bhubaneswar duly headed by a Service Engineer.

7. The 2<sup>nd</sup> party shall undertake the periodical maintenance work of these ..... sets prescribed formats attached herewith ( Format I ) on the 10<sup>th</sup> of every succeeding quarter duly countersigned by the concerned Assistant Director ( Tech), / Authorized Officer, R.E. Cell , DRDA .....

8. The 2<sup>nd</sup> party should be in readiness to attend to the defects of any system ( out of these..... Sets ), as and when required by the beneficiary/ 1<sup>st</sup> party and ensure rectification of defects and restore functionality within seven days of lodging the complaints. The 2<sup>nd</sup> party shall furnish the status report after

the maintenance work are over, which shall invariably bear the signature of the beneficiaries as per the format annexed herewith (format- II ).

9. The 2nd party shall appraise the 1st party about the requirements and supply of spares during warranty as well as CMC period.

10. The 2nd party will ensure to submit quarterly reports of visits made by their representatives to the completed villages every three months during the warranty and CMC period.

11. The 1st party in consultation and cost sharing with the 2nd party will maintain a central complaint cell at Bhubaneswar alongwith adequate stock of spare parts as a backup.

12. Separate bills/ invoices in triplicate enclosing the prescribed formats duly filled in (Format-I and II ) are to be submitted by the 2nd party to 1st party for effecting payment after end of the each year from the date of maintenance of the systems.

13. Certificates in support of successful maintenance of the system(s) shall be obtained from the users which should be countersigned by the Assistant Director ( Tech), / Authorised Officer, RE Cell , DRDA ..... In token of verification of maintenance done.

14. It will be the liberty of the 1st party to cross check the systems maintained by the 2nd party. Random verification of the maintenance may be carried out by the 1st party wherever necessary.

15. The 2nd party may continue to maintain the gadgets after expiry of the maintenance period of 10 years , provided the beneficiaries/ 1st party desires.

16. For adjudication of any dispute between the two parties arising on execution of this CMC , the matter shall first be brought to the notice of Chief Executive, OREDA.

17. In case, there will be no amicable settlement of the issues, the matter can be referred to the court of law having jurisdiction at Bhubaneswar only. The Annual Maintenance contract is signed jointly between the two parties today i.e on dated ..... day of 2016 and shall come into force from the date of its signature(s).

For and on behalf of Odisha Renewable Energy Development Agency,  
Bhubaneswar .....

For and on behalf of M/S

( 1stParty) .....

( 2ndparty) .....with Seal

**Annexure-6****Model Bank Guarantee Format for Performance Security**

Annexure-II of Finance Department Office Memorandum 4939 dtd 13.2.12, Govt of Odisha

[Ref Para 22(i1) To

WHEREAS----- (name and address of the supplier) (hereinafter called "the supplier") has undertaken. in pursuance of contract no---- dated----- to supply -----(description of goods and services) (herein after called "the contract")'

AND WHEREAS it has been -stipulated by you in the said contract that the supplier shall furnish you with a bank guarantee by a scheduled commercial bank recognized by you for the sum specified therein, as security for compliance with its obligations in accordance with the contract;

AND WHEREAS we have agreed to give the supplier such a bank guarantee;

NOW THEREFORE we hereby affirm that we, are guarantors and responsible to you on behalf of the supplier. up to a total of ----- .(Amount of the guarantee in words and figures).and we undertake to pay you. Upon your first written demand declaring the supplier to be in default under the contract and without cavil or argument, any sum or sums within the limits of (amount of guarantee)as aforesaid. without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

We hereby waive the necessity of your- demanding the said debt from the supplier before presenting us with the demand.

We further agree that no change or addition to or other 'modification of the terms of the contract to be performed there under or of any of the contract documents --which may be made between you and the supplier shall in any way release us from any liability under this guarantee and we hereby waive notice of any such change. Addition or modification.

This guarantee shall be valid until the day of-----20----- .

Our branch at \* (Name & Address of the \* branch) is liable to pay the guaranteed amount depending on the filing of claim and any part thereof under this Bank Guarantee only and only if you serve upon us at our----- \* branch a written claim or demand and received by us at our \* branch on or before Dt.-----otherwise bank shall be discharged of all liabilities under this guarantee thereafter.

(Signature of the authorized officer of the Bank)

Name and designation of the officerSeal.

Name& address of the Bank and address of the Branch



**Annexure-7****Format of Monthly Generation Report****(Report will contain Daily Average data and to be submitted on monthly basis)**

<b>Sl. No</b>	<b>Particulars to be reported</b>
1	Name of Project site along with GPS Co-ordinates
2	Capacity of Solar Power plant
3	Capacity of Solar Inverter
4	Capacity of Battery Bank
5	Monthly Average Solar PV generation
6	Monthly Average Power consumption
7	URL of Remote Monitoring System
8	User Id and Password of Remote Monitoring system

**Signature of bidder with stamp & date**

**Annexure-A****List of Schools for Solar Electrification Programme**

Sl No	Name of the district	Name of the block	Name of the Gram Panchayat	Name of the Location.	Nos of Systems	
					SLS(7watt)	Power plant
1	Angul	Angul	Tikarpada	MajhipadaSevashram School	10 sets	5kwp
2	Angul	Angul	Kothabhuin	Baghamunda Ashram School	10 sets	5kwp
3	Angul	Angul	Purunakote	ChhotkeiSevashram School	10 sets	Not required
4	Angul	Athamallik	Sapaghara	Rainali Ashram School	10 sets	5kwp
5	Angul	Athamallik	Ambasarmunda	AmbasarmundaSevashram	10 sets	5kwp
6	Angul	Banarpal	Banarpal	BanarpalSevashram School	10 sets	5kwp
7	Angul	Banarpal	Kukudanga	Tentolei Ashram School	10 sets	5kwp
8	Angul	Kishorenagar	Oskapali	BadibahalSevashram School	10 sets	5kwp
9	Angul	Kishorenagar	Bamura	DangapalSevashram School	10 sets	5kwp
10	Angul	Kishorenagar	Kadalmunda	Kusuni Ashram School	10 sets	5kwp
11	Angul	Kishorenagar	Thelconali	Phulamba Govt. High School	10 sets	5kwp
12	Angul	Kaniha	Deranga	DerangaSevashram School	10 sets	5kwp
13	Angul	Kaniha	Balipasi	Kaliadama Ashram School	10 sets	5kwp
14	Angul	Kaniha	Baliposi	Palasbahali Ashram School	10 sets	5kwp
15	Angul	Kaniha	Deranga	Govt. High School Deranga	10 sets	5kwp
16	Angul	Pallahara	Bandhabhuin	Jamardiha Ashram School(Boys)	10 sets	5kwp
17	Angul	Pallahara	Bandhabhuin	Jamardiha Ashram School(Girls)	10 sets	5kwp
18	Angul	Pallahara	Seegarh	Naikaripali Ashram School	10 sets	5kwp
19	Angul	Pallahara	Seegarh	Kamparkala Ashram School	10 sets	5kwp
20	Angul	Pallahara	Nampasi	NamagapmSevashram School	10 sets	5kwp
21	Angul	Pallahara	Badasada	KurumulaSevashram School	10 sets	5kwp
22	Angul	Pallahara	Seegarh	Karadapal Ashram School	10 sets	5kwp
23	Angul	Pallahara	Allori	Allori Ashram School	10 sets	5kwp
24	Angul	Pallahara	Dimiria	DebahaliSevashram School	10 sets	5kwp
25	Angul	Pallahara	Nijigarh	Malyagiri Govt. High School	10 sets	5kwp
26	Angul	Pallahara	Bandhabhuin	Bandhabhuin Govt. Girls High School	10 sets	5kwp
27	Angul	Talcher	Padmabatipur	Kanhabereni Ashram School	10 sets	5kwp
<b>Total</b>					<b>270 sets</b>	<b>130 Kwp</b>