



**ODISHA CONSTRUCTION CORPORATION LTD.**  
**(A Govt. of Odisha Undertaking)**  
*Unit-VIII, Gopabandhu Nagar, Bhubaneswar-751012*

**COVER – I**  
**(TECHNICAL BID)**

**Bid identification No. OCCL-MECH/14/2020-21**

**NAME OF WORK**

**DESIGN, SUPPLY, INSTALLATION, TESTING, COMMISSIONING AND MAINTENANCE OF 50 KWP GRID CONNECTED ROOF TOP SOLAR POWER PLANT WITH NET METERING FACILITY AT HEAD OFFICE, OCC Ltd., UNIT-VIII, GOPABANDHU NAGAR, BHUBANESWAR**

**Director (Mechanical)**  
**O.C.C. Ltd., Bhubaneswar**

## **PARTICULARS OF TENDER**

1	Name of work:	Design, supply, installation, testing, commissioning and maintenance of 50 KWP grid connected roof top Solar Power Plant with net metering facility at Head Office, OCCL, Unit-VIII, Gopabandhu Nagar, Bhubaneswar
2	E.M.D.	Rs. 23,000.00
3	Period of Completion	04 (Four) Calendar months
4	Cost of Bid Documents	Rs. 7,080.00 including GST
5	Date of availability of tender document	10.02.2021
6	Date and time for Pre Bid Meeting with	12.02.2021 at 11.30 A.M in the conference Hall of OCC Ltd., Head Office, Bhubaneswar.
7	Due date and time for submission of tender	24.02.2021 up to 03:00 pm
8	Date and time of opening technical bids	24.02.2021 at 04:00 pm
9	Date of opening of Financial Bid	To be intimated to qualified bidders after evaluation of Technical Bid by registered post/Speed Post/E-mail.

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## NOTICE INVITING TENDER

**Bid identification No. OCCL-MECH/ 14 /2020-21**

10<sup>th</sup> February 2021

M/s Sirs,

Notice inviting tender – Design, Supply, installation, testing, commissioning and maintenance of Grid connected Roof Top Solar Power Plant with net metering facility at Head Office, OCCL, Unit-VIII, Gopabandhu Nagar, Bhubaneswar.

1. Odisha Construction Corporation Ltd.(OCCL) intends to install a 50 KWP Grid connected Roof Top Solar Power Plant with net metering facility (RTSPP) on the terrace of its existing Office Building at Unit-VIII, Gopabandhu Nagar,Bhubaneswar-751012 and invite you to bid for the same.
2. You are requested to submit your offer in sealed envelope for the afore said work as per the details, specifications and other requirements as mentioned more specifically elsewhere in this tender document.
3. The pre-bid meeting will be held on 12<sup>th</sup> February 2021 at 11:30 PM at our office premises. Bidder should have already conducted a site survey and should have satisfied himself about the overall feasibility of the work before the pre– bid meeting.

Sealed offers in 02 separate envelopes indicating clearly “Technical bid” and “Price bid” should be addressed to the Director(Mechanical) , OCCL Regd. Office, Unit-VIII, Gopabandhu Nagar,Bhubaneswar-751012 and super scripted “**Tender for Design, Supply, installation, testing, commissioning and maintenance of 50 KWP Grid connected Roof Top Solar Power Plant with net metering facility at Head Office, OCCL, Unit-VIII, Gopabandhu Nagar ,Bhubaneswar-751012**” . The tender should not be submitted later than 03.00 pm on 24<sup>th</sup> February 2021.

4. Technical bid should contain the following :
  - a. Part – 1 of the tender, every page of which should be duly signed and stamped.
  - b. Bar chart indicating the programme for the execution of the work.
  - c. Tender paper cost of Rs 7,080/- including GST & Earnest Money Deposit (EMD) of Rs.23,000/- (Rs. Twenty three Thousand Only) by way of a Demand draft from Nationalized /Scheduled Bank payable at Bhubaneswar in favour of “Odisha Construction Corporation Ltd.”. Tender without EMD and tender paper cost shall be rejected. **The SSI/NSIC/MSME units participating in tender are not entitled for exemption from payment of EMD/ Security Deposits/ Tender Paper costs as communicated vide DOWR Letter No. IIM-24/ 2018-14318/WR dated 24.05.2018**

- d. The tender document may be downloaded from OCCL website [www.odishaconstruction.com](http://www.odishaconstruction.com) or Govt. of Odisha website [www.tendersodisha.gov.in](http://www.tendersodisha.gov.in)
  - e. Technical aspect of the offer.
  - f. Drawings.
  - g. Copy of valid ESI Registration certificate issued by competent authority
  - h. Copy of valid registration certificate from Provident Fund Authority
  - i. Copy of valid labour licence
  - j. Copy of Registration certificate as per Clause No-1 of Pre-bid Qualification criteria (Page No-24) of DTCN
  - k. Copy GST Registration Certificate
  - l. Copy of PAN Card
  - m. Annual turnover certificate (Annexure-VII)
  - n. List of Manpower (Annexure-V)
  - o. List of Projects as per Annexure- VI
  - p. No Relation certificate as per format attached (Page No-29)
  - q. Affidavit to be furnished for genuineness of all documents submitted by the bidder(Annexure-III)
  - r. Affidavit for Past contractual performance(Annexure-IV)
  - s. Un-priced list of spare parts to be maintained during the AMC period
5. Price bid should contain the following:
- a. Price bid complete in all respects duly sealed and addressed by Name of Director (Mechanical), Head Office, OCCL Regd. Office, Unit-VIII, Gopabandhu Nagar, Bhubaneswar-751012.
  - b. Price bid should not contain any conditions, whatsoever and conditional bids, if any, shall be rejected.
6. Technical bid will be opened on 4.00 PM, 24<sup>th</sup> February 2021 at our office address in the presence of representative of Bidders, should they choose to be present.  
Price bid will be opened on a suitable date, which will be communicated to the eligible Bidders.
7. Before filling up the tenders , the Bidders may note the following:
- a. The bid shall remain valid and open for acceptance for 90 days from date of opening of technical bid. If a Bidder withdraws his tender before the expiry of the said period or makes any modifications in the terms and conditions of the tender which are not acceptable to OCCL, then OCCL, without prejudice to any other right or remedy, will be at liberty to forfeit the earnest money.

- b. The work shall be completed within 04 months from the date of issuance of Work order. The successful contractor will have to give a detailed work program in bar/activity chart of various activities of works to be done along with time schedule so that the work is completed within the stipulated time. The work program shall be submitted within 10 days from the date of acceptance of the tender.
  - c. All documents in support of the offer should be signed and sealed by the firm.
  - d. Liquidated damages for delay in completion of the work will be levied at 0.25% of the value of the accepted tender for every week of delay or part thereof, subject to maximum of 5% of the value of the accepted tender, in case of delay on account of the executant.
  - e. OCCL reserves the right to accept or reject any/all tenders in part or whole of any firm /firms without assigning the reasons for doing so.
  - f. Bidder should quote the rate in figures as well in words. The rate of each item should be worked out and the requisite total amount shall be calculated accordingly.
  - g. The tender document must be filled in English and all entries must be either hand written or neatly typed.
  - h. Bidder should visit the site to ascertain the working conditions and local authority regulation / restrictions if any and other information required for proper execution of the work.
  - i. The Quoted price shall be inclusive of all taxes like income tax, cess, royalty, fees etc. payable under the local rule excluding GST. GST will be paid extra to the contractor as per the prevailing rules.
  - j. Canvassing in connection with tenders is strictly prohibited and the tenders submitted by Bidder/s who resort to canvassing will be liable for rejection
8. The successful Bidder shall execute an agreement with OCCL on the lines of the format enclosed (Articles of Agreement) within 10 days from the date of acceptance of the offer failing which the Bidder's EMD shall stand forfeited.

**Director Mechanical  
OCCL**

## Form of Tender

**Date:**

**The Director (Mechanical),**  
Odisha Construction Corporation Ltd  
Unit-VIII, Gopabandhu Nagar,  
Bhubaneswar-751 012

**Dear Sir,**

Tender for Design, Supply, installation, testing, commissioning and maintenance of 50 kW Grid connected Roof Top Solar Power Plant with net metering facility at Head Office, OCCL, **Unit-VIII, Gopabandhu Nagar, Bhubaneswar-751012.**

I /we , the undersigned have carefully gone through and clearly understood the scope of work, technical specification and guidelines relating to the contract for “Design, Supply, installation, testing, commissioning, and, maintenance of Grid connected Roof Top Solar Power Plant with net metering facility at Head Office, OCCL, Unit-VIII, Gopabandhu Nagar, Bhubaneswar” as specified in the Tender after visiting and examining the site of the work specified in the Tender and having acquired the requisite information relating to the tender. I/We hereby offer to execute the work/s specified in the said Tender within the time specified at the rates mentioned in the financial bid and in accordance in all respects of the tender with the specifications and instructions in writing referred to in the conditions of the tender, the articles of the agreement, special terms and conditions and in all other respects in accordance with such conditions so far as they may be applicable.

## Memorandum:

1	Description of the works	Design , Supply, installation, testing, commissioning, and, maintenance of 50 KWP Grid connected Roof Top Solar Power Plant with net metering facility at Head Office, OCCL, Unit-VIII, Gopabandhu Nagar, Bhubaneswar -751012.
2	Estimated cost	Rs. 23,00,000
3	Earnest money	The agency shall pay as earnest money a sum of Rs. 23000/- by way of demand draft.
4	Period of contract	The completion period of the work is 04 months from the Date of issuance of work order.
5	Security Deposit	5% from every Running Account Bill, maximum 5% of actual value of work
6	Initial Security Deposit	2% of value of accepted tender

1. I/we here by agree to abide by the terms and conditions of the contract of the tender hereto so far as they may be applicable or in default thereof to forfeit and pay to Odisha Construction Corporation Ltd. the amount mentioned in the said conditions.
2. I/We have submitted a sum of Rs.23, 000/- as Earnest money to the Odisha Construction Corporation Ltd., which is not to bear any interest.
3. Should I/We fail to execute the contract when called upon to do so, I/We hereby agree that this sum shall be fortified by me/us to the Odisha Construction Corporation Ltd.
4. I/We further agree to complete the work within 04 months from the date of issuance of the work order by OCCL.
5. I/We agree not to employ Sub-Contractors other than those that may be approved by OCCL.
6. I/We agree to pay Sales Tax , Change in tax if any, Work Contract Tax, Octroi duties, GST levied by the government, as prevailing from time to time, and any other tax as to be fixed by the Govt. on the Design, Supply of items as laid out in Bill of Quantities including items of additional fitments as per requirement.



Our PAN No. is \_\_\_\_\_ (Copy of PAN to be attached) Our Bankers

are:

(i)

(ii)

(iii)

The Names of partners of our firm are:

(i)

(ii)

(iii)

Name of the partner of the firm authorized to sign Or Name of person having Power of Attorney too sign the contract (certified true copy of the Power of Attorney should be attached)

Yours Faithfully,

Signature of Authorized signatory (Signature and address of witnesses)

(i)

(ii)

(iii)

## STANDRAD FORMAT (ARTICLES OF AGREEMENT)

Articles of agreement made on this .....day of .... between Odisha Construction Corporation Ltd. [OCCL] having its Regd. Office, Unit-VIII, Gopabandhu Nagar, Bhubaneswar-751012; hereinafter referred to as "OCCL" of the one part and Ms/s------(hereinafter called "The Bidder") having its registered office at.....of the other part.

Whereas OCCL is desirous of getting executed "Design, Supply, installation, testing, commissioning, and, maintenance of 50 KWP Grid connected Roof Top Solar Power Plant with net metering facility at Head Office, OCCL, Unit-VIII, Gopabandhu Nagar, Bhubaneswar-751012 (Odisha)" and has caused financial bid showing and describing the work to be done under the direction of OCCL AND WHEREAS the said technical specifications and the financial bid have been signed by or on behalf of party hereto.

AND WHEREAS Bidder has agree to execute upon and its subject to the conditions set forth in the Price bid and terms & conditions of the contract (all of which are collectively hereinafter referred to as "the said conditions") the work shown upon the said technical specifications , and included in the Price bid at the respective rates therein set forth amounting the sum as therein arrived or such other sum as shall become payable there under (herein after referred as "the said contract amount").

‘NOW IT IS HEREBY AGREED AS FOLLOWS:-

1. In consideration here in after mentioned, Bidder will upon and subject to the conditions annexed, carry out and complete the work shown in the contract, described by or referred to the schedule of quantities and in the said conditions.
2. OCCL shall pay Bidder the said contract amount or such sum as shall become payable at the times and in the manner specified in the said conditions.
3. The said Conditions and Appendix there to and the documents attached hereto shall be read and construed as forming part of this agreement and the parties hereto shall be respectively abide by, submit themselves to the said Conditions and the correspondence and perform the agreements on their part respectively in the said conditions and the documents contained herein.
4. This agreement and documents mentioned herein shall form the basis of this contract.
5. This contract is fixed lump – sum contract for the complete work to be paid for according to necessary installation carried out at site, at the rate contained in the Schedule of Rates or as provided in the said conditions.

6. Bidder shall afford every reasonable facility for carrying out of all works of other Contractors employed by OCCL and shall make good any damage done to walls, floors etc. after completion of such works.
7. Time shall be considered as the essence of this contract, and Bidder hereby agrees to commence the work/ job within the 10<sup>th</sup> day of the receipt of the work order as provided for in the said conditions and to complete the entire work within the time period prescribed be low reckoned from date of receipt of such work order subject nevertheless to the provision for extension of time.
8. All payments by OCCL under this contract will be made only at Bhubaneswar.
9. All disputes arising out of or in any way connected with this agreement shall be deemed to have arisen at Bhubaneswar and only courts in Bhubaneswar shall have jurisdiction to determine the same to the exclusion of all other courts.
10. That the several parts of this contract have been read by Bidder and fully understood by the Bidder  
 IN WITNESS WHEREOF OCCL has set its hands to these presents through its duly authorized officials and Bidder has caused its common seal to be affixed hereunto and the said two duplicates / has caused these presents and the said two duplicates here of to be executed on its behalf, the day and year first herein above written (if Bidder is a company).

Signed and delivered by the  
 Odisha Construction Corporation Ltd  
 By the hand of its authorized official Shri

[Name and Designation]

In the presence of the witness

[i]\_

[ii]\_

**Signed and Delivered by Shri-----**

**In presence of**

[i]

[ii]

**Place: Date:**

## **GENERAL TERMS AND CONDITIONS / INSTRUCTIONS TO THE BIDDERS**

1. Bidder must use only the price bid format issued by OCCL, to fill in the rates. Any additional/alteration in the text of the tender made by Bidder shall not be considered. Such tender /s may be considered invalid by OCCL at its discretion.
2. All entries must be made by hand and written in ink. If any of the documents is missing or unsigned, the tender may be considered invalid by OCCL in its discretion.
3. Rates and amounts should be quoted both in figures and in words, in columns specified. All erasures and alterations made while filling the tender must be attested by the initials of the Bidder. Overwriting of the figures is not permitted.
4. Failure to comply with either of these conditions will render the tender void at OCCL's option. No advice whatsoever especially on any change in rate, specifications or conditions after opening of the tender will be entertained. If on check there are difference between the rates given by Bidder in the words and figures or in amount worked out by him, the following procedure shall be followed:
  - a. When there is a difference between the rates in figures and in words, the rates that correspond with the rate written either in the figures or in words, then rate quoted by Bidder in words shall be taken as correct.
  - b. When the amount of an item is not worked out by Bidder or it does not correspond with the rate written either in figures or in words, then the amount corresponding to the rate quoted by Bidder s in the words shall be taken as correct.
  - c. When the rates quoted by Bidder in figures and in words tallies but the amount is not worked out correctly, the rate quoted by Bidder shall be taken as correct and not the amount.
5. Each page of the tender document should be signed by the authorized person or persons submitting the tender in token of his/their having acquainted himself/themselves with the general conditions of contract. General specifications, special conditions etc. as laid down. Any tender with any of the documents not so signed will be liable to be rejected.
6. The tender submitted on the behalf of a firm shall be signed by all the partners of the firm or by a partner who has the necessary authority on the behalf of the firm to enter into the proposed contract. Otherwise the tender may be rejected by OCCL.

7. Bidder shall furnish earnest money in the form of Demand Draft in favour of “Odisha Construction Corporation Ltd.” from any Nationalized/ scheduled bank. A tender that is not accompanied by EMD shall be rejected. The EMD will be returned to Bidder if his tender is not accepted by OCCL but without any interest thereon. The EMD paid by the successful Bidder shall be retained by OCCL as a part of security for execution of fulfillment of the contract. The EMD of successful Bidder will be forfeited if he fails to comply with any of the conditions of the contract / tender documents or if he withdraws his tender during the specified period of validity of offer or if he fails to sign the contract agreement within the stipulated period.
8. On receipt of intimation from OCCL of the acceptance of his/their tender, by way of Work Order, the successful Bidder shall sign an agreement on the lines of the agreement in the format prescribed herein. **Senior Manager (Mech), Central Store and Machinery Bank** shall be the Officer-in-charge of the project and agreement shall be drawn by him on behalf of OCCL. All payments shall be effected by the **Senior Manager (Mech), CSMB** on behalf of OCCL for the agreement. A Work order by OCCL will constitute a binding contract between OCCL and Bidder so tendering, whether such formal agreement is or is not subsequently executed. The cost of the necessary stamp paper for execution of the agreement shall be borne by the successful Bidder.
9. Bidder shall not assign the contract and shall not sublet any portion of the contract. In the case of breach of these conditions, OCCL may serve a notice in writing on Bidder rescinding the contract where upon the security deposit shall stand forfeited to OCCL, without prejudice to his other remedies against the Bidder.
10. Bidder shall carry out all the work strictly in accordance with the details and Engineer / Officials. If in the opinion of OCCL, changes have to be made in the design and with the prior approval in writing they desire, Bidder to carry out the same. OCCL's engineer/ officials decision in such case shall be final.
11. A schedule of probable quantities in respect of each work and specifications accompany their general and special conditions. The financial bid should contain not only the rates but also the value of each item of work entered in a separate column and all amount quoted against various items entered in a separate column and all amounts quoted against various items should be totaled in order to show the aggregate value of entire tender.
12. Bidder must obtain for himself on his own responsibility and at his own expenses all the information which may be necessary for the purpose of making tender and for entering in to a contract and inspect site of the work, acquaint himself with all local conditions, means of access to the work, nature of the work and all matters pertaining thereto.

13. The rates quoted in the tender/ offer shall be for the complete item including design, supply, installation, testing and commissioning of plant at site along with annual maintenance. The rate shall also include all charges for storing, watch and ward, reinstating and making good damaged work if any to its original finish etc. The rates quoted shall be deemed to be finished work to the measured at site. The rate quoted in the tender shall include all charges for packing, transporting, loading, unloading and for delivery at site. The rates shall also be firm during the period of the contract including extended period if any and rates shall not be subject to exchange variation, labour conditions and fluctuations in railway freights, taxes or any conditions whatsoever. Bidders must include in their rates, income tax, cess, fees, royalties etc. or other levy as existing, levied by the central government or any state government or local authority, if applicable. Only GST as applicable will be paid extra. The same will remain firm during the contract period.
14. Rate should include:
  - (a) Charges for removal of debris out of premises, removing stains, cleaning the site thoroughly and restoring it to original condition where work is undertaken,
  - (b) All Taxes, Duties, fess, royalty except GST which shall be paid extra as per prevailing rule
  - (c) Freight & Insurance, and, (d) all overheads & profits etc.
15. Quoted rate should be workable, and should be firm for the entire contract period. No variation of rates will be allowed.
16. Bidder is required under the contract to deliver the goods to the site. (The storage/handling etc. shall be sole responsibility of Bidder till the commissioning/ handover of the system).
17. If any new tax/duty is levied during the contract period the same will be borne by the firm exclusively. TDS will be deducted from the payment of Bidder as per the prevalent laws and rules of Government of India and Government of Odisha in this regard.
18. Bidder in consultation with concerned official/officials of OCCL will conduct training program for users, focusing on main features, operation and maintenance of the systems.
19. Bidder shall submit an un-priced list of spare parts to be maintained during AMC period (after expiry of warranty period) with the technical bid.
20. Bidder shall provide one copy of instruction manual and routine maintenance manual with each system supplied or installed, this shall be in English. The following minimum details must be provided with manual for Grid connected Solar PV Power Plant:

- (a) About the complete photovoltaic system including PV modules, PCU, and electronics etc.
  - (b) Do's and Don'ts
  - (c) Clear instructions on regular maintenance and troubleshooting of the system
  - (d) Name & address of the contact person in case of non-functioning of the system
21. Bidder shall indemnify OCCL against all third party claims of Infringement of patent, royalties' trademark or industrial design rights arising from use to the goods or any part thereof.
  22. Bidder, wherever applicable, shall after proper painting, pack and crate all the equipment in such manner as to protect them from deterioration and damage during rail and road transportation to the site and storage at the site till time of installation. Bidder shall be held responsible for all damage due to improper packing.
  23. Bidder shall inform OCCL of the date of each shipment from his works, and the expected date of arrival at the site for the information of OCCL project offices at least 7 days in advance.
  24. All demurrage, wharf age and other expenses incurred due to delayed clearance of the material or any other reason shall be to the account of Bidder.
  25. The goods supplied under the contract shall be fully insured against loss or damage incidental to manufacture or acquisition, transportation; natural calamities shall be included in the bid price.
  26. All the equipment and materials including spares, if any, being supplied by the Bidder shall be completely insured at his own cost from the time of dispatch till installation & commissioning of the project and taking over by beneficiary/User in accordance with the Bidding Documents.
  27. It will be the responsibility of Bidder to lodge, pursue and settle all claims with the Insurance Company for all equipment / materials in case of any damage, loss, theft, pilferage or fire during execution of Contract and OCCL shall be kept informed about it. Bidder shall be responsible for replacement of the lost /damaged materials promptly irrespective of the settlement of the claims by the underwriters and Bidder shall ensure that the work progress is as per the agreed schedule without cost over-run/time overrun. The losses, if any, for such replacement shall be borne by Bidder.
  28. Bidder shall note that unless otherwise stated the tender is strictly on lump sum basis and his attention is drawn to the fact that rate should be correct, workable and self-supporting. This tender shall carry out all works necessary for completion of the work and for delivering the desired results. No claim shall be entertained on this account.
  29. Bidder should not employ any person who is prohibited by law from being employed for fulfilling obligations under this contract.

30. Any act of indiscipline/ misconduct/ theft/ pilferage on the part of any employee/ person engaged by Bidder resulting in any loss to OCCL in kind or in cash will be viewed seriously and OCCL will have the right to levy damages or fine and/or even terminate the contract forthwith.
31. In case of any default or failure on part of Bidder to comply with all / anyone of the terms/conditions, OCCL reserves to itself the right to take necessary steps to remedy the situation including, inter-alia, the deduction of appropriate amount/s from dues otherwise payable to Bidder and/or by taking recourse to appropriate recovery proceedings.
32. Time allowed for carrying out the work shall be strictly observed by the tenderer. The work shall throughout the stipulated period of the contract be proceeded with all due diligence.
33. Bidder must submit a certificate from the manufacturers that the supplier is an authorized dealer for the sales and service of the products used in the solar power plant System.
34. Bidder shall not be entitled to any compensation for any loss suffered by him on the account of delays in commencing or executing the work, whatever the cause of delays may be including delays arising out of the modification to the work entrusted to him or in any subcontract connected therewith or delays in awarding contracts for other trades of the project or in commencement or the works or in procuring government controlled or other building materials or in obtaining water and power connections for the construction purpose or for any other reason what so ever and OCCL shall not be liable for any claim in respect thereof. OCCL does not accept the liability for any sum besides the tender amount, subject to such variations as are provided for herein.
35. The successful Bidder is bound to carry out any or all items of work necessary for the completion of the job even though such items are not included in the quantities and rates.
36. The successful Bidder must cooperate with the other contractor appointed by OCCL so that the work shall proceed smoothly with the least possible delay and to the satisfaction of OCCL.
37. The tender shall guarantee that the work shall be free from any defects whatsoever for a period of 05 year Defect Liability period (Warranty) from the date of handing over of the system.
38. The work allotted to Bidder is to be complete within 04 months reckoned from the date of issue of the work order. Bidders are advised to visit the site and get themselves fully acquainted with the general and local site conditions, particularly those bearing up on transportation, handling, storage and the like, prior to quoting for the work.



39. Any defect or shortcomings found during the completion of the work and during the defects liability period from the completion of the entire work shall be attended/ rectified by Bidder without any extra cost to OCCL. In case of failure to do so within 10 days from such notice from OCCL, OCCL may get such rectifications works carried out through any other firm and expenditure incurred by OCCL shall be recovered from any money due to Bidder.
40. A sum equivalent to 2% of the contract sum is required to be deposited by the firm with in 07 (Seven) days from the date of issue of the Letter of Intent in the form of Demand Draft/Term Deposit Receipt of any nationalized or schedule Bank. The TDR shall be duly pledged in favour of the Odisha Construction Corporation Limited. Earnest money deposit will form a part of total ISD. Failure to enter in to the required agreement and to deposit the ISD as above shall entail forfeiture of the EMD. No tender shall be finally accepted until the required amount of ISD is deposited. The Initial Security Deposit will be released after completion of the work and settlement of the final bill of the Contractor.

41. WITH HELD AMOUNT FOR EPF, FPF AND ESI DUES

2 (Two)% shall be deducted and kept withheld from R.A. bills of the “Contractor” towards EPF, FPF and ESI dues. If the “Contractor” produces clearance in support of deposit of EPF, FPF and ESI dues with the concerned authority within 3(Three) months from the end of each financial year, the above-withheld amount shall be released.

**42. No escalation shall be allowed on the rates of the contract.**

43. No mobilization advance shall be paid to Bidder.

44. No Relation Certificate.

The Contractor shall have to furnish certificate along with the tender to the effect that they are not related to any officer of Govt. of Odisha/OCCL in the rank to an Asst. Executive Engineer and above and any officer of the rank of Under Secy. and above in the W.R. Department. If the fact subsequently proved to be false the contract will be rescinded. The earnest money and the total security will be forfeited and shall be liable to make good the loss or damage, resulting from such cancellation. (The proforma for no relation certificate is contained in a separate sheet in Annexure-II, Page-28)

45. On site, lockable storage space will be given as per availability, the security for which will be the responsibility of Bidder. OCCL will not be responsible for contractor's materials. Bidder may be required to vacate the storage space as per exigency without any extra cost.
46. Bidder has to make his own arrangement of stay for his employees.

47. Bidder shall be entitled to receive payment on the basis of installation and commissioning,

- approved and certified by OCCL engineer. Officials regarding compliance with the specification and acceptability subject to deductions herein after mentioned in Annexure –1.
48. Bidder will be governed by the local labour laws / acts inforce.
  49. If in the opinion of OCCL engineer/ officials, works be delayed by force majeure such as war/hostilities, riots or civil commotion, earthquakes, fire, tempest, lightening or other natural disasters, restriction imposed by the Government which prevent or delay execution of the order or by any other reasons, a suitable extension of time will be given and no extra claim will be paid by OCCL whatsoever.
  50. Bidder shall use all materials conforming to the relevant BIS/MNRE/relevant code and will use the best material of approved manufacturer.
  51. Bidder shall maintain at site responsible, efficient, qualified and well experienced in charge during the whole contract period. Any clarification, explanation, instruction or notices given by OCCL to such in charge shall be deemed to be given to Bidder and shall be binding on Bidder.
  52. Bidder shall on request of OCCL, immediately dismiss from the work any person in the opinion of OCCL be unsuitable or incompetent or who may be guilty of misconduct.
  53. Bidder shall at the instructions of OCCL within such time as notified, open up for inspection any work and *if* Bidder refuse or neglect to comply with such instructions, OCCL may employ other workman to open of the same. Such work if it is found not in accordance with approved specifications, or the instructions, expenses of opening up and redoing if required shall be borne by and recoverable from Bidder from any money due or which may be due to Bidder.
  54. Notices of OCCL, to Bidder may be served personally or by being left at or sent by registered post to the last known place of the business of the party to whom the same is given or in the case of Bidder by being left on the works. Notices may be served at or sent by registered post to the registered office of Bidder. Any notice sent by registered post shall be deemed to be served at the time when in the ordinary course of post, it would be delivered.
  55. The Warranty period shall be 25 Years for the PV modules and 5 years for complete system from the date of handing over of the system. Bidder shall rectify defects developed in the system within Warranty period promptly. In case the defects are not rectified within 10 days of the receipt of the complaint by Bidder, OCCL shall have full liberty to restore the system in working condition. The expenditure so incurred by OCCL shall be deducted from Bidder pending claims, security deposit or in other lawful manner.

56. Termination of the contract by OCCL:

If Bidder being an individual or a firm, commit any “Act of insolvency“ or shall be adjudged an insolvent or being an incorporated company shall have an order for compulsory winding up or applies for voluntary winding up or subject to the supervision of the court and of the official assignee or the liquidator, in such

Acts of insolvency or winding up shall be unable within seven days after notice to him requiring him to do so, to show to the reasonable satisfaction of OCCL that they are able to carry out and fulfill the contract , and to give security , there for , if required by OCCL.

Or

If Bidder (whether an individual firm or incorporated company) shall suffer execution to be issued , or shall suffer any payment under this contract to be attached by or on behalf of any of the creditors of Bidder , or shall assign or sublet the contract without the consent in writing of OCCL first obtained.

Or

Shall charge or encumber this contract or any payments due or which may become due to Bidder there under.

Or

If Bidder:

- a. Has abandoned the contract, or
- b. Has failed to commence the works, or has without any lawful excuse under these conditions suspended the progress of the works for seven days after receiving from OCCL written notice to proceed ,or
- c. Has failed to proceed with the works with such diligence and failed to make such progress as would enable the work to be completed within the time agree upon, or
- d. Has failed to remove materials from the site or to pull down and replace work for seven days after receiving from OCCL written notice that the said material of work were condemned and rejected by OCCL under these conditions ,or
- e. Has neglected or failed persistently to observe and perform all or any of the acts, matters or things by this contractor to be observed and performed by Bidder for seven days after written notice shall have been given to Bidder requiring Bidder to observe or perform the same , or
- f. Has to the detriment of good workmanship or in defiance of OCCL`s instructions to the contrary sublet any part of the contract then and in event of any of the aforesaid cases, OCCL may, notwithstanding any previous waiver, after giving seven days` notice in writing to Bidder , determine the contract but without thereby affecting the powers of OCCL or the obligation and liabilities of Bidder , the whole of which shall continue in force as fully as if the contract has not been so determined and as if the works

subsequently executed has been executed by or on behalf of Bidder.

And further , OCCL may enter upon and take possession of the work and all plants, tools, scaffolding, sheds, machinery and material lying upon the premises or the adjoin lands or roads and use the same as his own property or may employ the same by means of his own servants and workmen in carrying on and completing the works ,and Bidder shall not in any way interrupt or do any act, matter or thing to prevent or hinder such other contractor or other persons employed for completing and finishing or using the materials and plant for the works. When work shall be completed or as soon thereafter as convenient, OCCL shall give a notice in writing to Bidder to remove his surplus material and plant, and should Bidder fail to do within period of 14 days after the receipt thereof by him, OCCL shall sell the same by public auction, and shall give credit to Bidder for the amount realized on deducting there from the costs of removal and sales.

If any sum shall be due or payable to or by OCCL for the values of the said plant and materials so taken possession of by OCCL and the expenses of loss which OCCL shall have been put to in requiring the works to be completed, and the amount, if any, owing to Bidder and the amount which shall be so certified shall thereupon be paid by OCCL to Bidder or by Bidder to OCCL, as the case may be, and OCCL`s certificate shall be final and conclusive between parties. On termination of the contract, Bidder shall forth will remove himself and his workmen from the work site.

57. Matters to be finally determined by OCCL

OCCLs' decision, opinion, direction with respect to all or any of the matter such as scope of work, contract or to provide everything necessary materials and workmanship to conform the description, assignment of subletting, defects after completion, delay and extension of time, opened up works and schedule of rates as contained in the price bid hereof and as to the exercise by them the right to have any works opened up shall be final and conclusive and binding on Bidder. OCCL`s instructions if any, in this regard in case of any urgency, shall also be complied immediately.

58. Arbitration

All questions and disputes of any kind whatsoever between the parties hereto arising out of or in connection with the contract or execution of the works, whether during the execution of the works or after cancellation, termination, determination, completion of abandonment or any dispute which cannot be settled by mutual discussion, the same will be settled by arbitration. One Arbitrator shall be appointed by each party and these two Arbitrators shall appoint an Umpire as provided under conciliation and Arbitration Ordinance, 1996.

The Jurisdiction of the Tender shall be the State of Odisha with the High Court at Cuttack.

59. Insurance contract conditions, contractor's liability and insurance

- a. From the commencement to the completion of the works, Bidder shall take full responsibility for the care of the work and for taking precautions to prevent loss or damage to the works and to minimize the loss or damage to the greatest extent possible and shall be liable for any damages or loss that may happen to the works or any part thereof from any cause whatsoever, inherent defects and failure due to poor workmanship and causes such as fire, lightening, explosion, earthquake, storm, hurricane, floods inundation, subsidence, landslides, rock slides, riots (excluding civil war , rebellion, revolution and insurrection) and shall at his own cost repair and make good the same so that at all times the work shall be in good order and condition and in conformity in every respect within the requirement of the contract.

Explanation: For the purpose of this condition, the expression “from the commencement to completion work shall mean the time commencing from the issue of the work order to Bidder and ending with the successful completion of the plant.

- b. Without limiting the obligation and responsibilities under this condition, Bidder shall insure and keep insured the works from the commencement to completion, as afore said, for their full value provided under this contract. In the event of there being a variation in the nature and extent of the work, Bidder shall from time to time increase or decrease the value of the insurance correspondingly. The entire premium shall be borne and paid by Bidder. The said insurance shall also provide for the removal of debris of the lost or damaged works.

- c. Bidder shall at all times indemnify OCCL against all losses , claim for damages or compensation under the provision of the payment of wages Act 1936, minimum wages act 1948, employer liability act, 1961, Industrial dispute act 1947, employer state insurance act 1948 or any modification thereof or any other law relating thereto and rules made there under from time to time or as a consequence of any accident or injury to any workman or other persons in or about the work whether in the employment of OCCL , or contractor or not and also against all costs, charges and expenses of any suit, action or proceeding whatsoever out of such accident or injury or combination of any such claims.

- d. Before commencing the work, Bidder shall without limiting his obligation and responsibilities under this condition insure against any loss of life or injury to any personnel in the employment of Bidder/ sub-contractor/ nominated contractor. For this purpose insurance shall be taken by Bidder /sub-contractor/nominated contractor. Such insurance shall be taken to include both employees/workmen covered by workmen's compensation Act 1923, as well those employees/workmen not covered by the said act. Separate insurance policies may be taken for employees/workmen covered under workmen's compensation Act 1923, and

employees/ workmen not covered by the said act. All premiums shall be paid by Bidder.

- e. Bidder shall at all times indemnify and keep indemnified OCCL against all losses and claim for injuries or damage to any person or any property whatsoever which may arise out of or in consequence of the construction and maintenance of the work and against all claims, demands, proceeding, damages, costs, charges and expenses whatsoever in respect of or on relation thereto. Before commencing the execution of the works, Bidder shall without in any way limiting his obligation and liabilities under this condition, insure at his cost and expenses against any damage or loss or injury which may be caused to any person or property including the employee or servant of OCCL and the consultant and their property by or in the course of execution of works. Such insurance to be known as the third party insurance shall be in a sum equivalent to two percent of the value of the accepted tender subject to the minimum sum of rupees five lakh. The insurance policy to be so obtained by Bidder shall be deposited by Bidder with OCCL within the seven days of its issue by the insurer.
  - f. Bidder shall ensure that similar insurance policies are taken out by his sub- contractors or nominated contractors, if any, and shall be responsible for any claim or loss resulting from their failure to obtain adequate protection in connection thereof . While taking the insurance policies, contractor should indicate clearly to the insurance companies that the policies issued cover their sub-contractor and nominated contractor also.
  - g. No work shall be commenced by Bidder unless and until he has obtained the insurance or insurance required to be obtained by him under or by the foregoing clauses and no work shall be carried out or continued by Bidder unless and until each insurance is current and valid at that time.
  - h. In the event of any claim for insurance becoming due on the account of any eventuality covered by the respective insurance policy/policies, Bidder shall reinstate the installation, replace the material or equipment's or pay compensation to the affected personnel /employees without waiting for the settlement of the claim from the insurance company.
60. The person deployed by Bidder in OCCL shall not have claims of Master and Servant relationship (implicitly or explicitly) between him/her/them and OCCL nor have any principal and agent relationship with or against OCCL. Bidder's personnel shall not claim any benefit/ compensation/ absorption/ regularization of services under the provision of the Industrial Disputes Act, 1947 or Contractor Gardener (Regulation & Abolition Act,1970).

Declaration by the Bidder : I/We hereby declare that I/We have read and understood the above instructions to the Bidders and that the same are binding on me/us.

Date:

Signature of Bidder Seal

Place:



## **Pre bid qualification criteria:**

1. The Bidder must furnish Registration certificate from **competent authority (MSME) for generation of Electric Power using Solar Energy (Code-35105)**

Or,

**Udyam Registration Certificate for generation of Electric Power using Solar Energy**

2. **TECHNICAL ELIGIBILITY CRITERIA:**

- a. The Bidder should have installed & commissioned at least one Grid connected Solar PV Power Project having a capacity of not less than 50 kW which should have been commissioned at least six months prior to Techno- Commercial Bid Opening date.

The list of project commissioned at least 6 months prior to Techno -Commercial Bid Opening date, indicating whether the project is grid connected, along with a copy of the Commissioning certificate and Work order/Contract/Agreement/ from the Client/Owner shall be submitted in support of above.

- b. The bidder must be manufacturer/ System Integrator of any or all of the 2 major components of the solar PV power plant namely Solar PV panels, Inverters or an Integrator of solar PV power plants. In either case the bidders must submit the valid test reports of all major components issued by any of the authorized test centres of MNRE/NABL in favour of the OEM.

3. **FINANCIAL ELIGIBILITY CRITERIA:**

The Bidder should have an Annual Turnover or Net worth as indicated below:

To qualify for award of the contract, each bidder in its name should have in the last five years (from FY 2014-15 to FY 2018-19) achieved a minimum annual turnover ( in Solar Power Business) of Rs. 46.00 Lakhs at 2020-21 price level in any one financial year (Attested copy of certificate to be produced from the statutory auditor of the last financial year). Weight age of 10% per year shall be given on financial turnover of the previous years to bring them to the price level of current financial year i.e. 2020-21.

**Note:** The attested copies of certificate towards Annual Turnover from statutory auditor who has audited the Profit-loss account of the last financial year of the bidder shall only be considered.

4. The firm must not have been debarred / blacklisted by any Govt. Dept, agency, PSUs / institution / agencies / autonomous organizations. The bidder shall submit a self certification by an authorized person duly notarized to this effect.



### **Pre installation Obligations:**

- a. Successful bidder(s) after site visit are required to submit single Line Diagrams for all power plants indicating all wiring details, connectivity details etc. before commencement of installation work.
- b. The successful bidder should intimate the Distribution Utility and obtain Permission/NOC for Interconnection for each SPV installation before the scheduled date of commissioning.
- c. The successful bidder should procure the Generation Meters for each SPV system, get the same tested from the concerned MRT circle and ensure installation at the sites before the scheduled date of commissioning.
- d. Before submission of the Bid, Bidders in their own interest should visit the sites.
- e. All Electrical works shall be executed by a competent Electrical contractor with MV license issued by Electrical licensing Board of Odisha.

**FORMS OF TENDER**

**Annexure-I**

**Information to be furnished by the Vendor**

1	Name and Registered address	
2	Organizational set up of the firm including names, qualifications and experience of partners / Associates and staff	Details to be furnished in the prescribed proforma (Statement I)
3	Whether Registered (If yes, please enclose copies of relevant supporting documents)	
4	Experience (give number of years)	Years
5	Important large projects executed during last one year by the firm together with approximate cost of the individual project. The full postal address of the clients for whom the works have been executed shall also be given.	Details to be furnished in the prescribed proforma (Statement II)

6	Important large projects on which the firm is engaged at present and their estimated cost. (Stages of work. viz. Planning and Construction). The full address of the clients shall be Indicated against each project.	Details to be furnished in the prescribed proforma (Statement III)
7	Important large projects, if any, completed by the partners prior to	Attach a separate sheet
	joining the firm (these projects shall not be included under 5 & 6 above, but shall be shown separately).	
8	Name and address of banker/s of the Firm	
9	Turnover of the firm during last 3 years (Year-wise)	

**Note:** Please enclose copies of relevant supporting documents, wherever necessary.

Signature of the applicant with Full address and Office Seal.

## Bank Account Particulars of the Bidder

1	Name of Firm	
2	Address of firm	
3	Name of Bank Branch and Address	
4	Bank Code & Branch Code	
5	IFS Code of Bank Branch	
6	Type of Account	(Saving / Current / Cash Credit)
7	Account Number	
8	PAN of firm	
9	Service Tax Registration No.	

Signature of the applicant with Full  
address and Office Seal.

**CERTIFICATE OF NO-RELATIONSHIP**

I/We hereby certify that I/We am/are not related to any officer of Govt. of Odisha/OCC Ltd of the rank of Asst. Executive Engineer and above and any officer of the rank of Under Secretary and above in the W.R. Department, Odisha. I/We am/are aware that if the facts subsequently proved to be false my/our contract will be rescinded with forfeiture of EMD & security deposit and I/We shall be liable to make good the loss or damage resulting from such cancellation.

I/We also note that, non- submission of this certificate will render my/our tender liable for rejection.

Signature of the Bidder

\_\_\_\_\_  
Name \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

Date : \_\_\_\_\_

**(AFFIDAVIT)**

(To be submitted in original in legal stamp paper duly registered)

1. The undersigned (Name of the firm and full address of the registered office contact details) hereby certifies that, all the statements made in the required attachments are true and correct.
2. The undersigned also hereby certify that, neither our firm \_\_\_\_\_ nor any of its construction partners have abandoned any Solar Power Project or other project work in India nor any contract awarded to us for such works have been rescinded during the last five years prior to the date of this bid.
3. The undersigned hereby authorized and request (s) bank, firm or Corporation to furnish pertinent information as deemed necessary and as requested by the Corporation to verify this statement or regarding my (our) competency and general reputation.
4. The undersigned understands and agrees that further qualifying information may be requested and agree to furnish any such information at the request of the Corporation.

(Signed by an Authorized of the firm)

Title of Officer

Name of Firm

Date.

**PROFORMA FOR SUBMISSION OF PAST CONTRACTUAL PERFORMANCE**

(Affidavit on non-judicial stamp paper of Rs 20/- duly attested by Notary/Magistrate)

This is to certify that We, M/s\_\_\_\_\_ , in submission of this offer,

- i) Have not made any misleading or false representation in the forms, statements and attachments in proof of the qualification requirements;
- ii) Do not have records of poor performance such as abandoning the work, not properly completing the contract, litigation history, financial failures or fatal accident in self operated Solar Power plants etc.
- iii) Business has never been banned with us by any Central/State Govt. Departments/Public Sector Undertakings or Enterprises of Central/State Govt.
- iv) Have submitted all the supporting documents and furnished the relevant details as per the prescribed format.
- v) The information and documents submitted with the tender by me/us are correct and I/we am/are fully responsible for the correctness of the information and documents submitted by me/us.

**SIGNATURE AND SEAL OF THE BIDDER**

**List of technical personnel, giving the technical qualification, experience, including that in the present organization**

<b>Sl. No.</b>	<b>Name</b>	<b>Age</b>	<b>Qualifications</b>	<b>Work Experience</b>	<b>Nature of works handled</b>	<b>Name of the projects handled (costing more than Rs.46.00 Lakhs*)</b>	<b>Date from which employed in the present organization</b>	<b>Indicate special experience, if any</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>

Mention other points, if any, to show technical and managerial competency to indicate any important point in your favor.



**List of Important Projects ON HAND being executed by the Organization during the last 05 year costing Rs. 46.00 Lakhs and above.**

Sl. No.	Name of the Project and location	Nature of work involved in contract (eg. residential Office, etc.)	Name of the owner, also indicate whether Govt./ Semi-Govt./ Govt. of India Undertaking or Pvt. Body with full Address	Project cost in lakhs of Rupees	Completion Period		Any Other relevant information
					Stipulated	Actual	
1	2	3	4	5	6	7	8

Signature of the applicant with Full address and Office Seal.

**FINANCIAL ELIGIBILITY CRITERIA REQUIREMENT**

(To be submitted on the letterhead of Bidding Company / Lead Member) To,

[Name of the Organization]

(Address)

Dear Sir,

Sub: Bid for Implementation of Grid connected Roof Top Solar PV System

- a. We submit our Bid for the total capacity of ... kWp (Insert total offered capacity in kWp and submit details of our Financial Eligibility Criteria as follows:

We certify that the Financially Evaluated Entity (ies) had an Annual Turnover as follows:

The maximum Annual turnover of Rupees            Crore per MW in any one of the last 3 financial years preceding the Bid Deadline subject to the condition that the Bidder should at least have completed one financial year.

OR

Net worth of Rs. ....Crore computed as per instructions provided in tender document

(Strike Out whichever Is Not Applicable)

**Financial eligibility criteria**

<b>Name of Financially Evaluated Entity*</b>	<b>Relationship with Bidding Company**</b>	<b>Financial year</b>	<b>Year of Incorporation of the Bidding company</b>	<b>*** Total Maximum Annual Turnover (Rs. Crore)</b>	<b>Net worth (in Rs. Crore)</b>

\* The Financially Evaluated Entity may be the Bidding Company itself.

\*\* The column for “Relationship with Bidding Company” is to be filled only in case financial capability of Parent Company and/or Affiliate has been used for meeting Qualification Requirements.

\*\*\* Bidder shall furnish maximum annual turnover in any of the last three financial years.

Yours faithfully

(Signature and stamp (on each page) of Authorized Signatory of Bidding Company.

Name:.....

Date:.....

Place:.....

(Signature and stamp (on each page) of Chartered Accountant/Statutory Auditors of Bidding

Company.

Name:.....

Date:.....

Place:.....

**Notes:** Audited consolidated annual accounts of the Bidder may also be used for the purpose of financial criteria provided the Bidder has at least 26% equity in each company whose accounts are merged in the audited consolidated accounts and provided further that the financial capability of such companies (of which accounts are being merged in the consolidated accounts) shall not be considered again for the purpose of evaluation of the Bid.

## Technical specifications

### Scope of work

- a. Study the existing power system in the office, terrace layout and available space for installing the solar power plant system.
- b. Design, Supply, Install, Test, commission and maintain the Grid connected Roof Top Solar Power Plant with net metering facility in coordination OCCL implementation team.
- c. Liaise with MNRE/Any other agency for obtaining capital subsidy and subsidy receivable is to be credited to OCCL.
- d. Conduct end user training on operation and maintenance for identified group of employees along with the appropriate training tools such as details training manuals, presentations containing flow charts and images etc.
- e. Prepare and supply 05 sets of all the as built drawings in softcopy (AutoCAD) and hardcopy. All operating manuals, system manuals etc. as required.
- f. Post commissioning support in terms of five years defects liability period and comprehensive annual maintenance contract for further five years period after completion of defect liability period.
- g. Bidder will have to prepare terrace area layout plan.
- h. Location and design of PV module structure should be such as that the existing infrastructure on the terrace is not disturbed.
- i. Fabrication works are to be done at the factory only. Only the assembly with nuts and bolts is to be done at the site.
- j. Bidder has to visit the site and only after being satisfied about the entire nature of the work, has to submit the bid.
- k. The supporting MS section/girder should be located at a height such as to completely avoid the parapet wall shadows from falling onto the PV modules.
- l. Bidder has to arrange for dismantling of Solar Panel before any Cyclonic condition and reinstallation of the same after Cyclone at his own cost during Defect Liability Period of 05 years as well as AMC period of 05 years(Post Defect Liability Period)

## **System Description**

The Photo voltaic (PV) grid connected system consists mainly of three components viz. the solar photovoltaic (SPV) array, module mounting structure and power conditioning unit (PCU)/ inverter. The PV array converts the solar energy in to direct current and DC power is then converted to alternating current (AC) power by the Power Condition unit. This power is fed into the building power system through metering panel and isolation panel.

### **1. Solar Photo Voltaic Modules:-**

- a. The PV Modules shall contain poly crystalline solar cells.
- b. The power output of the modules should be a minimum of 50kW. Photo /electric conversion efficiency of SPV module shall be greater than 16%.
- c. The module used shall be grouped in an optimum number of strings with module to module cable connections.
- d. The modules shall be held fixed on MS hot – dipped powdered coated structures.
- e. The modules shall be inclined at optimum horizontal tilt angle facing due south depending on the site location.
- f. The DC output from the modules shall be fed to Array junction box and the strings are to be paralleled at the sub main and main junction box.
- g. The output of the main junction box shall be fed to DC distribution board.
- h. The output from DC distribution board shall be fed to the power conditioning unit.
- i. The power conditioning unit shall be installed in a control room (to be strategically located).
- j. The environment requirements/infrastructure to be provided in the control room will be in Bidder scope.
- k. The AC synchronized power output of the inverter shall be fed to the AC distribution Board of the building through the metering panel and isolation panel.

### **2. System bill of materials**

- a. Poly crystalline solar PV modules.
- b. Power conditioning Units.
- c. Array /sub main /Main junction boxes.
- d. Support structures.
- e. Cables
- f. AC distribution Board (Metering Panel, Isolator panel).

### **3. Acceptance testing**

The Acceptance testing of various components of the system and the integrated system to be offered by Bidder shall be done at the factory of the successful Bidder.

#### 4. Minimum specification of the various components

##### A. PV Module

- i. The PV module should comprise of poly crystalline silicon solar cells. The module must be tested and certified by MNRE/IEC approved test centres of India. SPV Module conversion efficiency should be greater than 16% under standard testing conditions.
- ii. The PV module shall perform satisfactorily in the humidity upto 100% with temperature between – 4 to + 85 degrees centigrade.
- iii. The total solar PV array capacity should not be less than the required capacity.
- iv. Since the modules would be used in a high voltage circuit, the high voltage insulation test shall be carried out on each module and test certificate to that effect to be provided.
- v. The peak power point voltage and peak power point current of any supplied module and /or any module string (series connected modules) shall not vary more than 3% from the respective arithmetic mean for all modules and /or for all modules strings , as the case maybe.
- vi. The PV Module should have suitable number of poly crystalline silicon solar cells connected in the series and hermetically sealed with impact resistant, low iron and high transmission toughened glass on the top and suitable lamination material on the back using state of art technology.
- vii. The module frame shall be made of corrosion–resistant material that shall be electrolytic alloy compatible with the structural material used for mounting the modules. Anodized aluminum channels may be used for framing the laminates.
- viii. The module shall be provided with a junction box with provision of external screw terminal connection and with arrangement for provision of by –pass diode. The box shall hinged, weather proof lid with screws and cable gland entry points or may be sealed type and IP 21/20 rated or of latest edition.
- ix. Necessary I – V/ P-V curves at 25, 45, 60 are required to be furnished.
- x. 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.
- xi. Modules should have a RF identification tag. The following information will be mentioned in the RFID used on each modules (This can be inside or outside the laminate, but must be able to withstand harsh environmental conditions).

- Name of the manufacturer of the PV module

- Name of the manufacturer of Solar Cells.
- Month & year of the manufacture (separate for solar cells and modules)
- Country of origin (separately for solar cells and module)
- I-V curve for the module 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.
- Other relevant information on traceability of solar cells and module as per ISO 9001 and ISO 14001. A strip containing Name of manufacturer, Module serial number and year of Make details should be laminated inside the module so as to be clearly visible from the front side.

### **B. Array Structure /PV Panel structure**

- i. Wherever required, suitable number of PV panel structures shall be provided. Structures shall be of either I or L sections.
- ii. The structures will be MS hot – dipped power coated to make them non corrosive and long lasting and also give enough working space for other installations on terrace.
- iii. Structures shall be supplied complete with all members to be compatible for allowing easy installation at the roof top site.
- iv. The structure shall be designed to allow easy replacement of any module.
- v. Each structure will have a provision to adjust its angle of inclination to the horizontal as per the site condition and will be capable of withstanding a wind load of 200 Km/hr after grouting and installation.
- vi. The front end of SPV array must be 01 meter above the roof surface. Grouting material for SPV structure shall be as per M25 concrete specifications.
- vii. The structure shall be designed for simple mechanical and electrical installation. There shall be no requirement of welding or complex machinery at the installation site.
- viii. If prior civil work or support platform is absolutely essential to install the structures, Bidder shall clearly and unambiguously communicate such requirements along with their specification in the technical bid.
- ix. Detailed engineering drawings and instructions for such prior civil work shall be carried out prior to the supply of goods.
- x. The supplier shall specify installation details of the PV modules and the support structures with appropriate diagrams and drawings.

- xi. Such details shall include , but not limited to the following:
- Determination of true south at the site.
  - Array tilt angle to the horizontal with permitted tolerance.
  - Details with drawing for fixing the modules.
  - Details with drawing for fixing the junction/terminal boxes.
  - Interconnection details inside the junction /terminal boxes.
  - Structure installation details and drawing.
  - Electrical grounding (earthing)
  - Inter – panel /inter row distances with allowed tolerance.
  - Safety precaution to betake.
- xii. The array structure shall support PV module at a given orientation and absorb and transfer the mechanical loads to the roof top columns properly.
- xiii. All nut and bolts shall be of very good quality stainless steel.
- xiv. Detailed design and drawing shall have to be submitting to OCCL for acceptance and approval before execution of work.
- xv. The Mounting structure must be Non-invasive Ballast Type and any sort of penetration of roof to be avoided. The design details are as follows:
- a. The inclination of module should be within 10-15 degrees.
  - b. The upper edge of the module must be covered with wind shield so as to avoid bulk air ingress below the module. Slight clearance must be provided on both edges (upper & lower) to allow air for cooling.
- xvi. The mounting structure should be as per latest IS 2062: 1992 and galvanization of the mounting structure shall be in compliance of latest IS 4759
- xvii. The minimum clearance of the structure from the roof level should be in between 70-150 mm.
- xviii. The structures should be laid on the rooftop on weather resistant FRP mountings which should be non-penetrating type and proper drainage of rain water over terrace through the installation area should be maintained.
- xix. 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.



- xx. 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.
- xxi. Additional waterproofing shall be provided in the areas where RCC blocks are placed on the terrace.
- xxii. The minimum clearance between lower edge of PV panel and terrace ground level shall be 150 mm to allow ventilation for cooling, also ease of cleaning and maintenance of panels as well as cleaning of terrace.
- xxiii. The PV array structure design shall be appropriate with a factor of safety of min. 1.5.
- xxiv. Each array may be provided with two bird repellents spikes at a level higher than the upper edge of the array. The location of the spike should be selected for minimum shadow effect.
- xxv. The support structure shall be free from corrosion when installed.
- xxvi. 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.
- xxvii. Adequate spacing shall be provided between any two modules secured on PV array for improved wind resistance.
- xxviii. The structure shall be designed to withstand operating environmental conditions for a period of minimum 25 years.
- xxix. The structure should be appropriately designed to withstand high wind velocities up to 180-200 km per hour.

### **C. Power Conducting unit**

- i. DCDB output will be fed to PCU which mainly consists of Maximum Power Point Tracker (MPPT), Charge controller, inverter, Voltage Stabilizer, Frequency and Voltage synchronizer and distribution panel along with necessary displays, indicators and alarms.

ii. The power conditioning unit (50KW) shall convert DC power produced by SPV module into grid quality AC power.

iii. Common technical Specification are:

Type	Self-commuted, current regulated, high frequency, IGBT based.
Output voltage	3 phase, 440 VAC (+10%)
Wave form	Pure Sine wave
Continuous rating	50KW
Nominal DC input	120 V DC
Total harmonic distortion	< 3%
operating temperature	50 to 85C
Housing cabinet	IP 20
Inverter efficiency	≥ 95%

iv. The charge controller and MPPT should preferably conform to IEC 62109 – 3, IEC 62093 and IEC 62509 standards or equivalent BIS standard.

v. The inverter shall be preferably from Indian manufacturer having qualification as per IEC 61683, IEC 62109 – 2 and IEC 62093 or equivalent BIS Standards.

vi. Important features/protections in the PCU:

- MPPT included.
- Array ground fault detection.
- LCD keypad operator interface menu drive.
- Automatic fault conditions reset for all parameters like voltage, frequency and /or black out.
- MOV type surge arrestors on AC and DC terminals for over voltage protection from lightening induced surges.
- PCU operation from 50 to 85C. All parameters shall be accessible through an industry standard communication link.
- Overload capacity (for 30 Seconds) shall be 200% of continuous rating.

vii. The PCU shall be self-commuted and shall utilize a circuit topology and components suitable for meeting the specification listed above at high conversion efficiency and with high reliability.

viii. The PCU shall be hybrid type and shall give the preference to feed the load from SPV power produced and shall draw the additional power from mains.

- ix. Automatic starting and transfer for extended grid failure periods.
- x. Since PCU is to be used in solar photovoltaic system, it should have high operational efficiency. The idling current at no load shall not exceed 2% of the full load current.
- xi. In PCU, there shall be a direct current isolation provided at the output by means of a suitable isolating transformer.
- xii. The PCU shall include appropriate self-protective and self-diagnostic features to protect itself and the PV array from damage in the event of PCU component failure or from parameters beyond the PCU safe operating range due to internal or external causes. The self-protective features shall not allow signals from the PCU front panel to cause the PCU to be operated in a manner which may be unsafe or damaging.
- xiii. Faults due to malfunctioning within the PCU including excess temperature, commutation failure shall be cleared by the PCU protective devices.
- xiv. Solar Meter: The installation of Solar Meter to measures the total solar electricity generated by the plant will be carried out by the successful Bidder. Solar meter shall be installed at the delivery point of the solar energy system to measure the total solar electricity generated. The Solar Meter shall be of 0.2s class accuracy and with facility for reading. The solar meter shall preferably have the facility for downloading meter reading using meter reading instrument (MRI) or wireless equipment or such other devices.
- xv. Net Meter: The installation of Net Meter as per regulations stipulated by RERC/other concern agency will be carried out by the successful Bidder in consultation/liaison with JVNL/RERC/other concern agency.
- xvi. The AC output voltage and frequency of the inverter must synchronize automatically to the exact AC voltage and frequency of the grid. Grid voltage shall be continuously monitored and in the event of voltage going below or above a pre-set value, the solar system shall be disconnected from the grid within the set time. Both over voltage and under voltage relays shall have adjustable voltage setting and time settings (0 to 5 seconds). The nominal AC voltage tracking range shall be +10%, - 15%, the nominal AC frequency tracking range shall be +1.5Hz,-3.5Hz.Theoutputpowerfactor should be of suitable range to supply or sink reactive power.
- vii. Electrical safety, earthing and protection:
  - Inbuilt protection for internal faults including excess temperature, communication failure, and over load and cooling fan failure (if fitted) is obligatory.
  - Isolation: Isolation is required to avoid any DC component being injected into the grid and potential for AC components appearing at the array.

- Over voltage protection against atmospheric lighting discharge to the PV array is provided.
- Earth Fault Supervision: An integrated earth fault device shall have to be provided to detect eventual earth fault on DC side and shall send message to the supervisory system.

#### **D. Cabling practice:**

Cable connection must be made using PVC copper cables as per BIS standards. All cable connections must be made using suitable terminations for effective contact. Only FRLS cables and wires of appropriate size and reputed make shall have to be used.

E. All doors, covers, panels and cable exits shall be gasketed or otherwise designed to limit the entry of dust of moisture. All doors shall be equipped with locks.

#### **F. Minimum generation guarantee**

1. Bidder has to guarantee a minimum energy generation of **72MWh per** annum. Failing which a penalty @Rs.8/- per kWh shortfall per annum will be deducted from the Security Deposit up to the defects liability period.
2. Beyond the defects liability period, this deduction will be effected from the AMC charges payable.

#### **G. Protection**

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.

##### **Lightening**

- a. 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 should be made after giving due consideration to maximum wind speed and maintenance requirement at site in future. The lightning conductor should be earthed through 20 mm X 3 mm thick GI flat earth pits/earth bus with proper Insulation. Height of Lightning Conductors from Array Structure should be minimum 4metres.
- b. Most areas of the State being prone to lightening, Type-II SPDs shall be included as a mandatory requirement.
- c. Similarly Type I+II SPD should also be provided on the grid side in ACDB or PCU to protect the PCU from damage

## **Earthing**

- a. Earthing should confirm to IS 3043.
- b. Earth Continuity wire/conductor should be 3-8 SWG. Thickness of Conductor should be more than half of the thickest wire used in Electric wiring. Total resistance of continuity conductor should be less than 1 ohms.
- c. Earthing lead can be of GI/Copper Strip. For each Earth Electrode 2 Leads must be provided.
- d. Earth Electrode can be of GI Pipe/Plate. Pipe Electrode should be of 40 mm dia, 4.75 m length (for rocky soil)/2.75 m (for ordinary soil). Plate Electrode should be of 60 cm\*60 cm at a depth of 3 m. Thickness of Plate should be 3.18 mm (copper)/6.35 mm (GI). Moistened land should be preferred for Earthing.
- e. Charcoal along with Salt and Lime mixture/ Bentonite in granular form mixed with water/ Marconite/ Chemical Earthing (Bentonite based/ Graphite based with Aluminium Silicates & Metal Powder) should be provided. The mixture should be inserted into the pipe or put around the plate. The Electrode system should be covered with cast iron cover plate with locking arrangement. (Marconite is recommended due to its Very Low resistivity)
- f. No . of Earthing points to be used:
  1. One Earthing for all the Structural Conducting Parts
  2. One Earthing for Inverter with ACDB, Array JB & Main JB.
  3. One Earthing for Lightning Arrester.
- g. Each array structure of the SPV yard will be grounded properly. The array structures and the lightning conductors are to be connected to earth through 25 mm X 5mm GI strip.
- h. The inverters and all equipment inside the control room shall be connected to earth through 25 mm X 5mm tinned copper/GI strip including supplying of material and soldering. Earth bus should be provided inside the control room with 25 mm X 5mm tinned copper/GI strip.
- i. In compliance to Rule 61 of Indian Electricity Rules, 2004 (as amended up to date), all non-current carrying metal parts should be earthed with two separate and distinct earth continuity wires

## **Surge Protection Devices**

- a. Surge protection device should be provided on both the DC side and the AC side of the solar PV system. It should have protection voltage of 2.5 kV & Nominal Discharge current of 5 kA (8/20)  $\mu$  sec.

- b. The DC surge protection devices (SPDs) should be installed in the DC distribution box adjacent to the solar inverter.
- c. The AC SPDs shall be installed in the AC distribution box adjacent to the solar inverter.
- d. The SPD's earthing terminal should be connected to earth through the above mentioned dedicated earthing system.

H. Evaluation of commercial bid

The total of (a) Design, Supply, Installation, Testing and Commissioning (DSITC) cost and (b) the AMC charges for five year period will be considered for arriving at the L1 bid. However, for purposes of calculation of ISD and SD, only DSITC cost will be considered.

I. The metering of electricity shall be carried out as per the regulations stipulated by Odisha Electricity Regulatory Commission and/or Central Electricity Authority.

**J. Maintenance**

- a. In case of System Breakdown leading to outage of the Solar Power System, the defect must be resolved within 48 hours. Any such outages beyond 48 hours shall be accrued and the 5 year annual maintenance period shall be extended by the accrued hours without any additional cost to OCCL. The selected bidder should plan deployment of enough spares and technically competent persons to attend to such breakdowns.
- b. To ensure proper maintenance of the installed systems the bidder is required to appoint a technically qualified person at the site to look after day-to-day maintenance and upkeep of the plant. Sufficient Spare should also be kept with the service personnel so as to attend to any breakdown forthwith.
- c. The bidder is also required to undertake maintenance as and when required upon receipt of service request from customer.
  - d. The bidder is required to train at least two designated persons from the organization.

## Technical Specification details

Tender for Design, Supply, installation, testing, commissioning and maintenance of Grid connected Roof Top Solar Power Plant with net metering facility at OCCL, Bhubaneswar

Particulars	System Design Details	Proposed by the Bidder	Quantities considered in the design by Bidder
SPV MODULES	Make: Waaree/ Vikram/ Kirloskar/Sova with valid MNRE certification  (Attach details)		
	Type of Solar Cell		
	Capacity of module (W)		
	Module efficiency (%)		
	Voc		
	Vmp		
	Isc		
	Imp:		
	FF efficiency:		
	Total nos. of module:		
	Total array capacity (kWp)		
Mounting Structure	Material:		
PCU with Charge Controller	Make: Delta/ ABB/ Statcom/ Flin/ Kirloskar		
	Rating		
	AC Output:		
	DC Input voltage		
	Phase:		

DC/AC Distribution Box	Make: Delta/ ABB/ Statcom/ Flin/ Kirloskar		
Cables	Make:		
	Type		

The above shows the design parameters & is the minimum which needs to quote by Bidder for the On Grid Solar Power Plant. It may have some conflicting situations at some point, as per the requirements of the system, which may be clarified during pre- bid meeting or with written communication. All Components are of MNRE Approved make.

Signature of the bidder with Full address  
and Office Seal.



## **Special conditions of contract**

1. Working /detailed /shop drawing /brochures to be submitted and approval of MNRE/Line department to be received before taking up the work onsite.
2. Payment will be made as per the details given in the Annexure –I.
3. No workmen will be allowed to stay within OCCL premises.
4. Electricity and water etc. will be provided by OCCL, free of cost.
5. Permissions, if any required from the local statutory authorities /bodies shall be obtained by Bidder at his own cost.
6. Bidder shall engage the necessary workers for removal of debris, waste, dust etc. as required by the Engineer-in Charge without the extra cost and also redo the damages caused to the building/works without any extra cost to OCCL and dispose of the debris at the designated place.
7. Work may have to be done during night time to adhere to the time schedule for completion of the work, for which no extra charges will be paid.
8. Bidder shall take out and maintain insurance policies as prescribed in General Condition of the contract throughout the currency of the contract until works are taken over by OCCL.
9. Bidder shall notify OCCL about the Statutory Approvals /Permissions, if any, to be taken in respect of installation of the Grid connected Roof Top Solar Power Plant with net metering facility and its subsequent operation and shall take full responsibility in obtaining the same as well as in complying with all statutory requirements.
10. During the defect liability period from the date of completion of works, Bidder is required to provide preventive maintenance of all the components free of cost.
11. When storage is being provided, the surroundings and premises where such storage is located as well as the work of other agencies shall be protected and not damaged ; if any damage is caused, it has to be made good to the satisfaction of OCCL at the cost of contractor.
12. Bidder shall cover, secure and protect all the items of works as directed, until the works are taken over by OCCL.
13. All the material used in the work shall conform to the latest edition of BIS/Relevant specification and shall be of tested quality and subject to further tests, if required by OCCL, at no extra cost to OCCL.
14. Statutory deductions such as TDS, surcharge thereon, work contract tax and surcharge thereon or other statutory deduction as applicable shall be deducted from bills / amount payable to Bidder.
15. The PV modules will be warranted for a minimum period of 25 years from the date of installation of the system.(Output wattage should not be less than 90% at the end of 10 years and 80% at the end of 25years).

## **Safety Code**

1. First aid appliance including adequate supply of sterilized dressing and cotton wool shall be maintained in a readily accessible place.
2. An injured person shall be taken to the hospital without loss of time in cases where the injury necessitates hospitalization.
3. Hoisting machines and tackle if used in works, including their attachments, anchorage and supports shall be in the perfect condition.
4. Inflammable and hazardous items shall not be allowed near the working site.
5. Adequate safety measures against fire, theft etc. will be taken by Bidder.
6. Bidder shall observe all the safety precautions for the safety of the labourers and the employees of OCCL during execution of works. As a part of the contract, Bidder must satisfy the under mentioned safety requirements and must ensure at all times that these are followed without any deviations:
7. The Office Campus is a “NO SMOKING ZONE”, hence use of tobacco and smoking is strictly prohibited.
8. Any job where welding, soldering etc. is required and where lighting of flame is involved or using a source of heat or temporary electrical connections, shall not be done without prior permission from OCCL’s Technical Officer. No job involving heat sources are permitted to be carried out after office hours, holidays, Saturday and Sunday without prior permission from OCCL.
9. It is entirely the responsibility of Bidder to see that the safety appliances such as safety belts, life lines, helmets, rubber gloves etc., depending on the job, are made available to his staff at Contractor’s cost. If Bidder needs any suggestion/help in the matter, he can approach OCCL’s Officer-in-Charge. However, any lapse on safety will be viewed seriously.
10. Bidder shall ensure that the persons posted for the work are well conversant with the operation of fire extinguishers.
11. Bidder shall take all precautions to avoid accident and causes of accident. He must be careful regarding safety during working of his staff in the premises.
12. II. Safety Precautions for portable electrical appliances:
13. Precautions in handling portable electrical appliances are more significant under monsoon conditions. Some likely situations are highlighted here for Bidder’s attention and action to ensure that conditions and methods of usage conform to safety of personnel and property.

14. Joints in flexible cables: Usage of portable appliance through cable joints sometimes may lead to severe sparking and fire takes place if combustible or flammable materials are lying at the joint. Perhaps this may not be noticed by operator at all. For this and similar reasons, joints in cables of portable appliances are not permitted at all.
15. Appliance body grounding and system grounding: In absence of or ineffective appliance body grounding, operator may receive severe shock in case of phase to body fault during usage. Further, all earth pin socket must have low impedance and mechanically firm earthing according to Indian Electricity Rules so that safety is assured to operator even under fault conditions.
16. Water leakage: Water reduces efficiency of insulation depending upon exposure. Presence of moisture on ordinary switches may give a shock during operation. Switches in chronic leakage are as should preferably be de-energized until rectification is done and contractors must apprise civil works and properties department.
17. Excavation / Additions / Alterations of Building etc.: During excavations, alternations of buildings etc., every care shall be taken that electric shock or damage to cable, etc. are avoided. De-energization of circuits must be considered whenever required.

Sl. No.	Particulars	Details
1	Defect liability period	05 years from the date of completion and handing over of work
2	Period of honoring the bills for payment	21 working days from the date of submission of bill
3	Date of commencement	Reckoned from the date of issue of work order
4	Date of completion	Within 04 months from the date of issue of Work Order
5	Liquidated damages for delay	@0.25% of the value of accepted tender per week, subject to a maximum of 5% of value of accepted tender.
6	Security deposit	5% of value of the work
7	Release of security deposit	After 03 months from expiry of Defect liability period
8	Statutory deductions	Income tax at Source and any another tax/cess/surcharge as per applicable law /rules
9	Payment terms	90% after successful completion, testing & commissioning and handing over with certification from competent authority of the project 10% after receipt of confirmation from MNRE about release of subsidy/ performance incentive as per centre/state govt. guidelines. Payments are subject to effecting various Deductions.
10	Deduction on account of minimum Generation Guarantee	Penalty as specified in the clause no.F.1 (System Description) of technical specification will be effected.

**1. DETAILS OF VARIOUS INFORMATION / DOCUMENTS TO BE SUBMITTED BY THE PARTIES ALONG WITH THE TENDER:**

- 1.1 List of those items which are necessary for work completion but not indicated as separate item.
- 1.2 Proposed design of the RTSPP, related technical brochures related to the project etc.
- 1.3 Information / Specification Brochures, specifically indicating the standard warranty period, from the manufacturers/suppliers of all the system components. Concerned warranty cards will have to be submitted to OCCL on purchase of the components under the work contract.
- 1.4 Copies of the Certification wherever applicable.



**ODISHA CONSTRUCTION CORPORATION LTD.**  
**(A Govt. of Odisha Undertaking)**  
*Unit-VIII, Gopabandhu Nagar, Bhubaneswar-751012*

**COVER – II**  
**(FINANCIAL BID)**

**Bid identification No. OCCL – MECH/14/2020-21**

**NAME OF WORK:-**

**DESIGN, SUPPLY, INSTALLATION, TESTING, COMMISSIONING AND MAINTENANCE OF 50 KWP GRID CONNECTED ROOF TOP SOLAR POWER PLANT WITH NET METERING FACILITY AT HEAD OFFICE, OCC Ltd., UNIT-VIII, GOPABANDHU NAGAR, BHUBANESWAR**

## BILL OF QUANTITY

**Tender for “Design, Supply, installation, testing, commissioning, and maintenance of Grid connected Roof Top Solar Power Plant with net metering facility at Head Office, OCCL, Unit-VIII, Gopabandhu Nagar, Bhubaneswar.**

Sl. No.	Description of work	Unit	Rate	Quantity	Amount
1	Design, supply, installation, Testing and commissioning of 50 kW Grid connected Roof Top Solar Power Plant with net metering facility. the major components will have to be strictly as per the MNRE approved makes with five year defects liability period as per technical specifications given in the tender, complete in all respects as directed	Lump sum		Lump sum	
	<b>Rate in Words</b>				
2	Comprehensive AMC charges for post defect liability period. Charges will be paid on half – yearly basis at the end of each half year. and no escalation /increase will be paid during that period	Lump Sum		1	
A	1 <sup>st</sup> Year	Lump Sum		1	
B	2 <sup>nd</sup> Year	Lump Sum		1	
C	3 <sup>rd</sup> Year	Lump Sum		1	
D	4 <sup>th</sup> Year	Lump Sum		1	
E	5 <sup>th</sup> Year	Lump Sum		1	
	<b>Rate in Words</b>				
	<b>Total</b>				
	<b>Total in words</b>				

(Rate is inclusive of income tax, cess, fees, royalties etc. or other levy as existing levied by the Central Govt. or any State Govt. or local authority, if applicable. Only GST as applicable will be paid extra)

**Note:-** The total of Item(1 &2) will be considered for arriving at the L1 bid. However, for purpose of calculation of ISD and SD, only value of item (1) will be considered.

Accepted all terms and conditions

Signature of the applicant with full address and Office Seal.

Date:

Place