


OFFICE OF THE PRINCIPAL CHIEF CONSERVATOR OF FORESTS:
KENDU LEAVES: ODISHA: BHUBANESWAR.
GD 2/12, 1st FLOOR, ARANYA BHAWAN, CHANDRASEKHARPUR, BHUBANESWAR - 751023
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No. 168 / Dated 08th December, 2015.

**Tender Call Notice For Procurement, Installation,
Commissioning and Maintenance of Solar PV Power Plants.**

Sealed tenders in prescribed formats are invited from MNRE (Ministry of New & Renewable Energy) certified Companies/Firms /Manufacturers or System Integrators for supply, installation, commissioning and maintenance of approximately 15 (fifteen) nos of **3 kw Solar PV Power Plants** containing Solar Panels, Solar Smart hybrid inverters, Solar Batteries, required accessories etc. so as to reach this office on the above mentioned address on **or before 8th January,2016 up to 5 pm**. The tender document containing detail terms and conditions, technical specifications etc. can be downloaded from Government of Odisha Portal: www.orissa.gov.in/tender or www.odishaforest.in


Asst. Chief Conservator of Forests
Kendu Leaves, Odisha

TENDER DOCUMENTS

Tender Call Notice For Procurement, Installation, Commissioning and Maintenance of Solar Power Plants.

Sealed tenders in prescribed formats are invited from MNRE (Ministry of New & Renewable Energy) certified Companies / Firms / Manufacturers or System Integrators for supply, installation, commissioning and maintenance of approximately 15 (fifteen) nos. of 3kwp Solar PV Power Plants containing Solar Panels, Solar Smart hybrid inverters, Solar Batteries, required accessories etc. for supplying power efficiently to the designated/specified establishments in accordance with the terms and conditions spelt out in this Tender document. The specifications of Solar PV Power Plants to be supplied, installed, commissioned and maintained at various locations in Kendu leaf Divisions in the State of Odisha, have also been described under the terms and conditions.

Terms and Conditions for Supply, Installation, Commissioning and Maintenance of Solar PV Power Plants with Power back up.

1. Scope of work :

- 1.1 Design, supply, installation, commissioning and maintenance for a period of 5 years of the above mentioned capacity Solar PV Power Plants.
- 1.2 While designing various components and sub-components of the system all prevailing local conditions as well as all functional requirements must be taken in to consideration so as to ensure the committed level of performance over the designed life period of the power plant i.e. 25 years.
- 1.3 Installation of the supplied systems on the rooftops or on ground within the proposed site premises as the case may be as directed by the designated officials of Kendu Leaf Divisions of Kendu Leaf Organization of Forest Department.
- 1.4 Installation of all necessary protection devices to protect the power plant from lightening, sudden surges in voltage and current and to ensure safety of the grid to which the plant is connected. The bidder should also ensure protection of life and property likely to be endangered due to the installed solar power plant.

- 1.5 Execution of Comprehensive Maintenance Contract (CMC) of the complete system for five years warranty period. The date of commencement of CMC shall be reckoned from the date of commissioning of the system.
- 1.6 Opening of service centre/keeping servicing personnel and making available all essential spares in the vicinity of the plant such that the power plant will give the desired performance with least interruption.
- 1.7 Training at least two designated persons of the above site in day to day maintenance and upkeep of the system.
- 1.8 Submission of all details of the installed systems like site details, systems details, installation report, etc. in the formats to be provided separately. The details will also include photographic proof of installation of the systems.
- 1.9 Submission of periodic reports and returns as per the MIS prescribed by Kendu Leaf Organization of Forest Department.

2. Commissioning of the system & Functional requirements:

2.1 Installation:

- a) While installing the above mentioned solar power plant on rooftops the physical condition or the rooftop should be taken in to consideration.
- b) There should not be any damage what so ever to the roof top of the selected site building of KL Division to setting up of the solar power plant so that on a later day there is no leakage of rain water, etc. from the roof top.
- c) In case small damages are inevitable for erecting the footings for the module mounting structure etc. , the roof top may be given a suitable grading plaster with suitable leak proof compound so as to render the roof entirely leak proof.
- d) The solar PV array must be installed on the roof top in such a way that there is sufficient space on the roof top for maintenance etc.
- e) If the roof top does not have any access such as stairs or Ladder, a proper and safe ladder must be provided to ensure easy access to the roof top mainly for the purpose of maintenance and inspection.

- f) While cabling the array, care must be taken so that no loose cables lie on the rooftops.
- g) The roof top should look clean and tidy after installation of the array.
- h) Cables running from the roof top to the PCU down below should be made concealed to the maximum extent possible. In no case, the cables should be allowed to passed through windows making the windows non-operational.
- i) The battery bank must be kept in a dry and airy space close to the PCU. The batteries must be stacked in a suitable rack.
- j) Neatness, tidiness and aesthetics must be observed while installing the systems.

2.2 System Requirements:

- a) The batteries must remain in sufficiently charged condition so as to function efficiently and serve the purpose.
- b) The batteries should first receive charge from the solar array provided there is sun.
- c) In case there is no sunshine, the batteries should receive the charge from the utility grid supply if available.
- d) Once the batteries are fully charged and floating condition is achieved additional solar energy, if any, should flow to the main AC panel subject to availability of loads.
- e) The PCU - Inverter must have intelligent power / load management circuit to work as per the functional requirements of the system.
- f) Good quality and robust PCU-Inverters must be provided with the system so as to ensure more than 90% up time on quarterly basis.
- g) The AC output at the inverter end must be properly metered. All such meters should be digital and should be provided in the PCU.

3. Description of work and Technical Specifications:

The following works are required to be attended and for the purpose, all the stipulations of tender document and terms & conditions of this tender are to be followed and adhered to. The successful tenderer, to be called Vendor thereafter, will have to undertake designing, supplying, installation, commissioning and maintenance of 3 kwp Solar PV Power Plants including Battery bank, PCU, Module mounting structure at various locations/sites as per the tentative list of sites provided in this document. The requirement of Solar PV Power Plants and locations of installation are subject to modifications / changes and the same may change at the time of placing orders. The technical specifications required to be followed / adhered for supply, installation, commissioning and maintenance of 3 kwp Solar PV Power Plants are enclosed as **Annexure - A**. Tenderers will strictly adhere to these technical specifications. Tenderers have to furnish a "Certificate of Compliance to the Technical Specifications of Solar PV Power Plants" in Format - T/7. Deviation, if any, will have to be specified against the concerned component.

4. Purchase of Tender Document:

The Tender document can be down-loaded from the website www.odisha.gov.in/tender or www.odishaforest.in . The bidder shall deposit a sum of Rs.1000/- (Rupees one thousand) only towards cost of tender document and applicable VAT @ 5% of the tender cost (both to be included) in shape of Bank draft payable in favour of Assistant Chief Conservator of Forests (KL) Odisha, Bhubaneswar. Interested tenderers are advised to note that no tenderer is exempted from payment of the Cost of Tender document and VAT there on.

About Tender Document:

Tender Document comprises two parts, Technical Bid and Financial Bid. Each part duly filled in shall be separately sealed in envelopes and superscribed in the following manner. "Tender for Solar PV Power Plants - Technical Bid" and "Tender for SolarPV Power Plants - Financial Bid". The name and address of the Tenderer shall also be mentioned at the left bottom portion of each envelope. Both the envelopes shall then be enclosed in another envelope superscribed with the script "Tender for Solar Power System" and submitted to the Principal Chief Conservator of Forests (KL), Odisha, and Bhubaneswar.

- (i) Technical Bid document comprises Format-T/1 to T/8, prescribed here under to be submitted with documents as specified.(Official pad to be used)
- (ii) Financial Bid document comprises Format-F/1, prescribed here under. (Official pad to be used)

5. Eligibility Criteria for Tenderers :

- (a) Tenderers shall be MNRE (Ministry of New and Renewable Energy)certified Companies/Firms/Manufacturers or System Integrators. Tenderers other than MNRE certified need not apply.(Please enclose copy of MNRE Certificate)
- (b) Tenderers must have been registered under OST / Central Sales Tax Authority.
- (c) Annual Turnover shall not be less than Rs.2.0 (two) Crores in each of last three financial years(2012-13, 2013-14, and 2014-15)for this product only. A statement showing the Annual Turnover for the above three years for this product only (i.e. Solar PV Power Plants), duly certified by the Chartered Accountant must be submitted separately.
- (d) The tenderers must have experience of supplying and installing a minimum of 05(five) nos. of roof top solar power plant of 2 kw to 3 kw and / or above capacity (Government or private installations). For the purpose, the copies of Certificate of Completion with joint signatures (i.e. with the signatures of representatives of the firm/Company and those of user agencies) are to be furnished. Only copies of work order will not be accepted.
- (e) Must not be under declaration of ineligibility.

6. Tender Schedule:

Tender schedule shall be as under.

Last date and time of Submission of Tender	<u>08.01.2016</u> by 5.00 p.m.
Pre-bid meeting for queries, clarifications etc.	15.12.2015 at 4.00 p.m. Venue : Office of PCCF (KL), Odisha AranyaBhawan , Chandrasekharpur, Bhubaneswar- 751023
Opening of Technical Bid	<u>09.1.2016</u> 11.00 a.m.
Opening of Financial Bid	To be announced later on (ACCF KL may be contacted for any query in the matter)

Note : *In case of declaration of Government holiday on any of the above dates, the due date will be shifted to next working day but presently specified time will be followed.*

7. Quantities of Materials intended to be procured, installed & maintained:

Required items	Total approximate number required.
3kw Solar PV Power Plants containing solar panels, solar smart hybrid inverters, solar batteries, required accessories etc as per Terms & Conditions and Technical Specifications prescribed.	15(fifteen) nos. of sets.

The requirement may change at the time of placing orders.

8. Earnest Money Deposit (EMD):

Each Tender shall be accompanied with Earnest Money (EMD) or Bid Security Money (BSM) of Rs.70, 000/- (Rupees Seventy thousand) only in shape of Bank Draft. The Bank Draft shall be drawn, on any Nationalized Bank payable at Bhubaneswar, in favour of the Asst. Chief Conservator of Forests (Kendu Leaves), Odisha, Bhubaneswar. The EMD/BSM will be forfeited if the bidder withdraws its bid before opening of the Tender or does not deposit security money within specified period in case the bidder's offer is accepted by the competent authority. In other cases it will be refunded.

9. The relaxation/exemption in case of EMD and Security deposit / Performance Guarantee fees will be applicable as notified by Government of Odisha only.

10. Commercial Terms and Conditions:

10.1 The successful tenderer/bidder must have VAT clearance certificate in Form VAT-612 to undertake contract. In case, the same is not available at the time of participating in tender process and the said tenderer/bidder otherwise becomes a successful tenderer/bidder, he shall not be allowed to undertake this contract unless he produces the VAT clearance certificate in Form VAT-612 within two weeks of communication of Tender result.

10.2 Rate:

The cost to be quoted in Format – F/1 will be inclusive of packing, forwarding, loading and unloading charges, cost of insurance and transportation for destination where the system will be installed.

10.3 Sales Tax & Duties etc:

All Taxes and duties as prescribed both under Central and State Government sales tax rules would be applicable.

10.4 Security Deposit and Performance Guarantee Fees:-

The successful bidder shall deposit the Security Deposit (SD) @ 10% of order value within seven days of acceptance of the offer in shape of Bank Guarantee with validity for 6 years drawn in favour of Asst. Chief Conservator of Forests (KL), Odisha Bhubaneswar, issued by any local branch of a scheduled bank. Security Deposit shall not be accepted in any other form. Security Deposit (in full or part) is liable to be forfeited in case the Vendor fails to perform successfully and / or fails to abide by the Terms and Conditions of this Tender or agreement thereon.

10.5 Programme Execution Schedule:-

10.5.1 Delivery, installation & commissioning of systems at sites:

These works are required to be completed within Two months from the date of issue of the purchase order.

10.5.2 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 and the authorized representatives of user organization. Following such inspection, joint commissioning report shall be brought out in the prescribed format (**ANNEXURE-B**), which shall form a part of the documents for release of payment.

10.5.3 The issuance of a Joint Commissioning Certificate (JCC) shall, in no way relieve the executing firm of its responsibility for satisfactory operation of the SPV systems.

10.6 Warranty:-

The SPV Modules and the Balance of Systems (BOS) should be warranted against any manufacturing defect or bad workmanship for a period of 10 (Ten) and 5 (Five) years respectively from the date of commissioning of the systems in Format-T/8. Warranty certificate to this effect will be furnished by the successful bidder along with the commissioning reports. Any defect noticed during warranty period will be rectified/replaced by the supplier free of cost upon due intimation by the concerned Representative of Kendu Leaf Organization of Forest Department. The warranty period shall be extended by the period during which the systems remain non-operative due to reasons within the control of the successful bidder. Care should be necessarily taken to make the system operational within a week of reporting of defect. If the system is not made operational within fifteen days, the User Agency (Kendu Leaf Organization of Forest Department) may rectify the same and charge all expenses incurred on the said account to the vendor.

10.7 Penalty and termination of contract:-

The systems shall be supplied, installed and commissioned within the scheduled time. If the supplier fails to adhere to the schedule, the User Agency (Kendu Leaf Organization of Forest Department) shall without prejudice to its other remedies under the contract deduct from the contract price as liquidated damages a sum equivalent to 1% (round off to 100) of the contract price for each week of delay until actual commissioning up to a maximum deduction of 10% of the contract price for installation and commissioning. Once the maximum is reached (i.e. 10 weeks of delay), the User Agency (Kendu Leaf Organization of Forest Department) may consider for termination of the contract and forfeit the security deposit without prejudice to the other remedies of the contract by forfeiture of bank guarantee.

However, Kendu Leaf Organization of Forest Department, may at its own discretion allow reasonable time extension upon written application of the successful bidder. If the delay is considered intentional or due to negligence of the vender, 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.

10.8 Force Majeure:-

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

11. Payment:-

Payment for the work (excluding CMC charges) under normal circumstances will be done as detailed below:

11.1 90% of the contract value will be released after successful commissioning of the plant subject to measurement of all performance parameters for 2 days (with full sunny days) and submission of all documents as per check list given at **Annexure-D**.

11.2 Final payment @ 10% of the total order (excluding AMC charges) after successful functioning of the system for three months and receipt of performance report duly signed by authorized officer of Kendu Leaf Organization of Forest Department and vendor.

12. 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 Officer of Kendu Leaf Organization of Forest Department.

13. Comprehensive Maintenance Contract (CMC):-

CMC will be applicable from the date of commissioning of the system. The bidder must enter into a Comprehensive Maintenance Contract for the specified period before release of the first instalment of payment. Offer without such CMC shall not be considered. The scope of CMC must cover supply of spare parts (including battery) / services during the contract in force. The payment of annual maintenance charges under the Comprehensive Maintenance Contract shall depend upon the functionality of the system duly certified by the concerned officer or authorized officials of Kendu Leaf Organization of Forest Department. Upon receipt of such certificates, CMC amount as applicable shall be paid at the end of 1st, 2nd, 3rd, 4th and 5th years.

The complains of faults , defects , non-function etc during warranty and CMC period must be attended promptly within two days and system must be made functional within four days of giving intimation and such intimation may also be given over phone / E- mail etc.

14. Limitation of Liability:-

Kendu Leaf Organization of Forest Department 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 works. 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, SSI & other legal obligations.

15. Submission of Tender Document:

The Tender documents sealed in the manner as prescribed earlier can be dropped in the "Tender Box" in the office of the Principal Chief Conservator of Forests (KL), Odisha, or can be sent by Registered/Speed post at the address of communication. However, the Tender inviting authority shall not be responsible for any Postal delay nor any Tender document received beyond the scheduled date and time shall be entertained.

16. Documents to be enclosed with Technical Bid of Tender:

- a. Copies of Income Tax Returns of 2012-13, 2013-14 & 2014-15, financial years.
- b. Copy of Central Sales Tax Registration Certificate.
- c. Copies of Manufacturing License and in case of System Integrator, Copies of such relevant License, if any, issued by the Competent Authority.
- d. MNRE Certificate
- e. Duly filled in relevant details and signed (with Seal).(Format-T/1)
- f. Self-Declaration (Format-T/2).
- g. Authorization Letter (Format-T/3).

- h. Particulars of the Bidder (T/4).
- i. Tender Terms & Conditions Acceptance Letter (Format-T/5).
- j. Details of previous work orders executed. (Format-T/6).
- k. Specification compliance of the proposed Solar PV Power Plants (Format-T/7)
- l. Declaration of warranty (Format-T/8)
- m. Bank draft of Rs.1050/- towards cost of tender document including VAT of Rs.50/- drawn in favour of Asst. Chief Conservator of Forest (Kendu Leaves), Odisha payable at Bhubaneswar.
- n. Bank draft for Rs.70000/- (Seventy thousand only) towards EMD/BSM .
- o. A Statement showing the Annual Turn Over for this product only (i.e. Solar PV Power Plants) for three financial years (i.e. for 2012 – 13 , 2013 – 14 & 2014 – 15) , duly certified by the Chartered Accountant
- p. All other information / documents & enclosures required to be submitted.
- q. Available Information, brochure , literatures etc. on products and services for better appreciation of facts.

17. Financial Bid:

In the Financial bid (Format-F/1 to be filled in and signed with seal),the price shall be quoted separately for basic price per unit, statutory Taxes applicable thereon (Cess, VAT/CST, and others if applicable) transportation cost, installation and commissioning charges, comprehensive maintenance cost (CMC) showing year wise break up for five years. The cost of transportation shall include packing forwarding, insurance charges, loading, unloading, and transportation to the specified destinations, anywhere within Odisha.

18. Acceptance of Tender Document:

Tender document not submitted as per the stipulations of tender document and the terms and conditions spelt out shall be summarily rejected.

19. Technical Evaluation of Tender:

The Technical bids of Tenders received within prescribed time will be opened on 9th January, 2016 at 11:00 a.m. and evaluated by a Technical Committee constituted by the PCCF (KL). The Tenderers or their

Authorized representatives are advised to remain present at the time of opening of the technical bids as scheduled above. After evaluation, the Technical Committee shall notify on the Notice Board the names of Tenderers qualified in the Technical bid. Date and time of opening of financial bid will be communicated separately. In case of any query/clarification, Assistant Chef Conservator of Forests (KL) Odisha may be contacted during office hours.

20. Opening of Financial Bid:

The Financial bid of the bidders qualified in the Technical evaluation shall be opened by the Purchase Committee (To be announced as stated above) in the office of the Principal Chief Conservator Forests (Kendu Leaves), Odisha. The Final acceptance of the Tender will be decided by the competent authority whose decision will be final.

21. Execution of Agreement:

The successful bidder, hereafter called Vendor, shall execute an agreement with the Principal Chief Conservator of Forests (Kendu Leaves), Odisha, Bhubaneswar (the tender inviting authority) within 7 (seven) days of communication of acceptance of his offer on deposit of Security Deposit(SD). Agreement format will be supplied along with the communication letter regarding acceptance of offer.

22. List of Sites/Locations where Solar PV Power Plants to be installed:

The schedule of supply of indented materials shall be as under. The 3 kwp Solar PV Power Plants are to be installed, commissioned and maintained at the following listed sites/locations. The DFOs (KL) concerned will be contacted for the purpose. The number of procurement of Solar PV Power Plants , supply schedule and sites / locations are likely to change at the time of placing actual order.

List of Sites	
Sites	Divisions
Akul&Telkoi	Keonjhar (KL)
Bhojpur	Kuchinda (KL)
Khuntagaon, Kinjirikela,	Rourkela (KL)
Damamunda, Hrabhanga	Boudh (KL)
Rengalbeda, Kundheigola	Deogarh (KL)
Badakirisera, Bahalpadar	Rairhakhhol (KL)
BhutiArabahal	Titilagarh (KL)
Bandhapada	Patnagarh (KL)
Ummerkote, Dabugaon.	Nabarangpur (KL)

23. Miscellaneous:

- a. The competent authority is not bound to accept the lowest Tender and may reject any or all the Tenders without assigning any reason thereof.
- b. The tender inviting authority reserves the right to cancel the tender without assigning any reason.

- c. The stipulations and the terms and conditions embodied in the tender document will form part of the agreement.
- d. The very fact of submission of tenders will be treated as acceptance of all the stipulations and the terms and conditions of the tender embodied in the tender document.
- e. Any notice in connection with Tender sent to any Tenderer by e-mail furnished by the Tenderer shall be deemed to have been duly served.
- f. The jurisdiction of this Tender shall be at Bhubaneswar. No suit regarding the agreement entered into in this respect and for breach of terms and conditions of the agreement shall lie in any court outside Bhubaneswar, Odisha.
- g. The Principal Chief Conservator of Forests (KL) , Odisha Bhubaneswar(the tender inviting authority), reserves the right to modify / cancel the terms and conditions of the tender without assigning any reasons there of before the last date of submission of Tender document. Such modifications, changes and the corrigendum, if so required, may be issued separately on the same website where this tender document has been uploaded.

24. Rescission of Agreement:

In the event of failure to supply the materials as per supply schedule or for breach of any terms and conditions of the contract, the agreement will be rescinded by the Principal Chief Conservator of Forests (KL), Odisha, Bhubaneswar, who reserves the right to buy the required quantity from other sources. Excess cost, if any incurred for the same and loss if any, sustained by the government on this account shall be recovered from the Security Deposit and Performance Guarantee and if that is insufficient, then the balance amount will be recovered as arrears of land revenue under Odisha Public Demand Recovery Act. Tenders for part supply of the materials will not be entertained.

25. Address for Communication:

The address for communication shall be as under:-

Principal Chief Conservator of Forests (KL), Odisha
1st Floor, AranyaBhawan
Chandrasekharpur
Bhubaneswar-751023
Telephone No.-0674-2300915, Fax No.-0674-2300514.

Bhubaneswar
Date:

PRINCIPAL CHIEF CONSERVATOR OF FORESTS
KENDU LEAVES, ODISHA

Technical Bid:FORMAT :- T/1

Tender Call Notice No: _____ Date: _____

Please check whether following have been enclosed in the respective covers, namely, letter of Technical Bid.

Sl. No.	Compliance Document	Provided (Yes/No)	Page No. in the Technical Bid.
1	Copy of Certificate of Incorporation of Company or Registration of Firm.		
2	Copy of Sales Tax/VAT Registration Certificate.		
3	Copy of Service Tax Registration Certificate		
4	Copy of PAN		
5	Copy of up to date VAT Clearance Certificate		
6	Copy of Audited Balance sheet and Profit & Loss Account; Showing the relevant trade as proof of Annual Turnover of last three years (2012-13,2013-14 & 2014-15)		
7	Tender Paper Cost (DD No..... Amount: Bank..... Date.....)		
8	Earnest Money Deposit (DDNo..... Amount: Bank.:....., Date:.....)		
9	Acceptance of terms & Conditions contained in the tender documents (in Format – T/5)		
10	Particulars of the Bidder.(Format -T/4)		
11	List of Projects Executed (in the format attached at Format-T/6 along with enclosures)		

Sl No.	Compliance Document	Provided (Yes/No)	Page No in the Technical Bid
12	Letter of authorization from Authorizing Company, Manufacturer / System Integrator etc. (in Format – T/3).		
13	Certificate of Compliance of Technical Specifications of Solar PV Power Plants (in Format – T/7)		
14	Self Declaration of not being under declaration of Ineligibility (In Format-T/2).		
15	Copy of Power of Attorney in the name of the Authorized signatory.		
16	Self-Certified letter and Declaration (in Format – T/8) on Warranty		

Name &Signature of the Tenderer

Date:

Place:

Company Seal

**TENDER FOR SOLAR PV POWER PLANTS
SELF DECLARATION**

Date: _____

Ref: _____

To

The Principal Chief Conservator of Forests (KL), Odisha
1st Floor, AranyaBhawana,
Chandrashekharpur,
Bhubaneswar-751023

In response to tender Notice No. _____, Dt: _____,
I/We, Ms. / Mr. _____, as a _____, hereby
declare that our company _____ is having
unblemished past record and was not declared ineligible for corrupt & fraudulent practices
either indefinitely or for a particular period of time, nor is currently under declaration of
ineligibility.

**Signature of the Bidder
(Tenderer)**

Date:

Place:

Format: T/3

**TENDER FOR SOLAR PV POWER PLANTS
Letter of Authorization**

Date: _____

Ref: _____

To

The Principal Chief Conservator of Forests (KL), Odisha
1st Floor, AranyaBhawana,
Chandrashekharpur,
Bhubaneswar-751023

Ms. /Mr. _____ is hereby authorized to sign relevant documents on behalf of the company in dealing with reference No. _____
Dtd. _____. She / He is also authorized to attend meeting & submit technical & commercial information as may be required by you in the course of processing tender offer.

Thank you,

Authorized Signature

Representative's Signature

Signature attested

Tender Paper for Supply, Installation, Commissioning & Maintenance of Solar PV Power Plant.

FORM-1: Particulars of the Bidder.

Tender Call Notice No: _____ Date: _____

1.	Name of the Organization.				
2.	Organization Status of Registration				
4.	Address of Office in Odisha				
5.	Telephone No.		Fax No		
6.	Email Address				
7.	Website				
8.	Registration No of Certificate of Incorporation and Date				
9.	Registration No. of Sales Tax/ VAT & Date				
10.	Registration No of Service Tax				
11.	Permanent Account Number of income Tax and Date of Regn.				
12.	No. of years of proven experience of providing similar Services:				
13.	Annual Turnover				
	11 Annual turnover Audited Annual Turnover in last three years.	Annual turnover of the company in Rs.			
		FY	Turn Over (Rs)		
		2012 - 2013			
		2013 - 2014			
		2014- 2015			
		Avg. Turn Over			
14.	No. of employees:	Technical	Managerial	Support	Total

Date:

Place:

Company Seal

Signature of the Tenderer

Format: T/5

**TENDER FOR SOLAR PV POWER PLANTS
ACCEPTANCE OF TERMS & CONDITIONS CONTAINED IN THE RFP
DOCUMENTS (TENDER DOCUMENTS)**

To

The Principal Chief Conservator of Forests (KL), Odisha
1st Floor, AranyaBhawana,
Chandrashekharpur,
Bhubaneswar-751023

Sir,

I have carefully gone through all the stipulations and terms & conditions of Tender(contained in the tender Notice No.) regarding supply, installation , commissioning and maintenance of Solar PV Power Plants..

I declare that all the provisions of this RFP Document with all the stipulations and the terms and conditions are acceptable to my company. I further certify that I am an authorized signatory of my company and I am, therefore, competent to make this declaration.

**Signature of the Bidder
(Tenderer)
with seal**

Date

Place

Details of Supply executed

Tender Call Notice No: _____ Date: _____

Sl. No.	Name, Address of the Client	Details of the Previous Work Orders Executed	Project Period		Total Project Cost	Is this Project Similar to Current assignment (Yes / No)
			From	To		
(1)	(2)	(3)	(4)	(5)	(6)	(7)

Note: *The information provided in the above table must be supported by copies of relevant work orders and completion certificates.*

Further, Copies of Certificates of Completion with joint signatures for at least 5 (five) nos. of Roof Top Solar Power of 2 to 3 kwp and / or above Capacity are to be enclosed as Enclosures.

Signature of the Tenderer

Date:

Place:

Company Seal

CERTIFICATE OF COMPLIANCE TO THE TECHNICAL SPECIFICATIONS OF SOLAR PV POWER PLANTS

I, _____(name and designation) do here by certify that I have adhered to the required Technical Specifications excepting deviations as mentioned below and the price quoted in the Financial bid in Format- F/1 is meant for Solar PV Power Plants of the technical specifications mentioned in the terms and conditions of the Tender for supply, installation, commissioning and maintenance of the same. I have adhered to the said technical specifications excepting below mentioned deviations, at all stages of my tender offer submitted here.

Statement of Deviation:

- 1.
- 2.
- 3.

Signature of Tenderer
(with seal)

**TENDER FOR SOLAR PV POWER PLANTS
SELF DECLARATION FOR WARRANTY**

Date: _____

Ref: _____

To

The Principal Chief Conservator of Forests (KL), Odisha
1st Floor, AranyaBhawana,
Chandrashekharpur,
Bhubaneswar-751023

In response to tender Notice No. _____, Dt: _____,
I, Ms. / Mr. _____, as a _____, hereby
declare that our company agree to provide warranty to the SPV modules and the Balance of
Systems (BoS) against manufacturing defect or bad workmanship for a period of 10(ten) and
5(five) years respectively from the date of commissioning of the systems. The terms and
conditions for warranty as stated in the Tender document and the subsequent Agreement there on
will be acted upon and strictly adhered to.

**Signature of the Bidder
(Tenderer)**

Date:

Place:

Signature of the Tenderer]

Bid Documents for Procurement, Installation, Commissioning and Maintenance of Solar PV Power Plants as per Technical Specifications.

FINANCIAL BID

A. Name:

(In case of Company/Firm attested Copy of power of Attorney To be enclosed)

B. Father's / Husband's Name :

Address:

C. Address for Correspondence/ Communication:

(With Telephone No /Fax No. with STD Code and also E - Mail ID)

D. Price quoted for (3kwp Solar PV Power Plants):

Sl No.	Items	Unit Rate i.e. Total Cost per one set (both in figure and words)	Total Amount (in Rs.) for 15 (fifteen) nos. of sets of Solar Power Plants (both in figure and words)
1	Cost of 3kwp Solar PV Power Plants including modules, battery banks, Inverters, BoS with transit insurance and transportation to sites etc (all inclusive except taxes)		
2	Taxes Applicable (with Rate)		
3	Installation and Commissioning charges.		
4	Comprehensive maintenance contract (CMC) charges 1 st Year 2 nd Year 3 rd Year 4 th Year 5 th Year		
5	TOTAL (both in figure and words)		

Signature of Tenderer(with seal)

Technical Specifications to be followed

Sl.No.	Particulars		Technical Specifications
			3 kw SPV Plant
	Solar PV Modules		Crystalline Silicon
1	a	Capacity	3000 W
	b	Make	MNRE approved OR IEC 61215 (revised), Make of Bharat Electronics Ltd (BEL) or Central Electronics Ltd (CEL) or equivalent
	c	Module	250 wp x 12 nos(250wp is the minimum panel output and higher panel output will also be accepted in which case the number of panels will be adjusted accordingly to have 3 kw power generation.)
	d	No. of SPV Modules	Depends on Module wattage
2	Module Mounting Structure		MS hot dip galvanized with thickness of galvanization in between 80 to 120 micron as per the site condition.
3	Power Conditioning Unit		1 No.
	Inverter		3 kw / 3.75 kVA (As per IEC 61683, IEC 60068-2)
	Charge Controller		As per IEC 62093, IEC 60068-2
4	Battery		VRLA Type, 2 Volt, maintenance free (Luminous/ Exide or equivalent). 300Ah / 48 Volts
5	Cabling		Min. 20 m
6	Monitoring Control & protection device		1 Set
7	Metering at generation side		1 No DC Watt-hour meter with USB port facility.
8	Metering at consumption side		1 No. AC Energy Meter with USB port facility.
9	Spares		Set of required fuses, screws & terminals etc as required.
10	Junction Boxes / Enclosures		IP 65 (for outdoor) / IP 21 (for indoor) IEC 62208
11	GI Pipe Earthing System conforming.		As per IS:3043 – 1966
12	Lightening& Over Voltage Protection.		System conforming provisions of IS:3070

Solar PV Modules:

The PV modules must have quality to the latest edition of any of the following IEC PV module qualification test or equivalent BIS standards for module design qualification and type approval:
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.

Full-rated output of the SPV Array to be ensured after one year of operation. Number of modules and array capacity will depend on the rated output of individual modules. The peak power rating of the Solar PV array should not be less than as per rated capacity of PV Module. RF-II tag shall be mandatorily placed inside the module laminate.

Module Mounting Structure:

Solar PV modules are to be installed and fixed with the module mounting structures with appropriate size stainless steel nuts & bolts.

The array structure shall be made of hot dip galvanized MS angles of size not less than 50mm X 50mm X 6mm size. The minimum thickness of galvanization should be at least 80 microns and for coastal area 120 microns. All nuts & bolts shall be made of very good quality of stainless steel. The minimum ground clearance of the lowest part of the module structure shall be 500mm.

The structure shall be designed for simple mechanical and electrical installation. It shall support SPV modules at a given orientation, absorb and transfer the mechanical loads to the ground properly. There shall be no requirement of welding or complex machinery at site.

Array Foundation:

The legs of the structures made with hot dip GI angles will be fixed and grouted in the RCC foundation columns made with 1:2:4 cement concrete. The minimum ground clearance from the lowest part of any module shall be 500mm. While making foundation designs due consideration will be given to weight of module assembly, maximum wind speed of 200 Km per hour. The work includes necessary excavation, concrete-ing, back filling, shoring and shuttering etc.

Junction Boxes (JSB):

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 lugs 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.

The junction boxes shall have suitable arrangement for the followings:

- i. Combine groups of modules into independent charging sub-arrays that will be wired into the controller.
- ii. Provide arrangement for disconnection for each of the groups.
- iii. Provide a test point for each sub-group for quick fault location.
- iv. To provide group array isolation.
- v. The rating of the JBS shall be suitable with adequate safety factor to inter connect the Solar PV array.

Battery Bank:

There will be one battery bank comprising of appropriate capacity for respective SPV Power plant (Off-Grid). The cells should conform IEC 61427 / IS 1651/IS 133369 and as per specification given below shall be provided.

Container	Polypropylene Co-polymer/hard rubbers with carrying handle.
Cover	Protective cover of polypropylenes against dirt & possible short circuit.
Terminals	Made of lead alloy suitable for bolted connection. The terminals should be greased with petroleum gel.
Electrolyte	Battery grade Sulphuric acid
Self-Discharge	Less than 3% per month at 30 degree C
Life expectancy	1500 cycle duty at 27 degree C at 80% depth of discharge 3000 cycle duty at 50% discharge.
Voltage	2 Volt
Approval	Batteries shall have to be approved by ERTL or CPRI or any MNRE approved test centers.
Service Life	Should perform satisfactory for a minimum period of 5 (five) years under operating conditions as mentioned.

Each battery bank will contain suitable wooden rack or Mild Steel, hydrometer, thermometer, cell tester and connecting leads etc.

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 Tracker), an interface between Solar PV array and the Inverter, to maximize Solar PV array energy input into the System. PCU should conform IEC 61683, IEC 60068 as per specifications.

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

Maximum Power Point Tracker (MPPT) :

Maximum power point tracker shall be integrated into the PCU to maximize energy drawn from the Solar PV array. The MPPT should be microprocessor / micro-controller based to minimize power losses. The details of working mechanism of MPPT shall be mentioned.

The efficiency of the Charge controller (MPPT based with data logger) shall not be less than 94% and shall be suitably designed to meet array capacity.

MPPT must conform IEC 62093, IEC 60068 as per specifications.

Inverter:

The inverter will be highly efficient. The inverter should conform IEC 61683/ IEC 60068 and should be based on PWM IGBT design / 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:

Regulation	From minimum to maximum voltage 1%
Output frequency	50 Hz +/- 0.5 Hz
Overload Capacity	200% for 30 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 Protection	Automatic Shut Down
	Over Voltage both at Input & Output Over Current both at Input & Output Surge voltage inducted at output due to external source.
Protection Degree	IP65
Instrumentation & Indication	Input & output voltage. Input & Output Current, Frequency, Power output, different status of inverter, kind of fault by audio signal.

The PCU inverter display must show the following parameters.

- PV current
- PV Voltage
- Battery Current
- Battery Voltage
- Load percentage
- Inverter temperature
- Frequency

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 / PWM 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 / dt sensing). 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 of the 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
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 and 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 preset level, the PCU cuts off the Grid power from the system and will restore to feeding the loads from the battery bank and 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.

Overheating 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% 9 not applicable for > 1kVA systems)

Fully equipped with powerful Grid Charger.

User friendly client and web based software.

AC Distribution Panel Board:

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

Cables & Wirings:

All cables to be supplied should be as per IEC 60189 / IS 694 / IS 1554 and should have proper current carrying capacity. The cable shall be PVC insulated PVC sheathed copper conductor.

Supplier shall be responsible for providing the wiring as per the standard method of construction. The wiring of from PV Arrays to inverter shall be provided in rigid PVC 20mm-40mm conduit run on wall / ceiling etc. including entries through the wall / slabs / flooring as per requirement with necessary accessories/ / hardware's such as spacers, saddles, bends, tees, junction Boxes, check nuts/glands etc.

The conduits shall be erected/laid in such a way that no leakages, cracks can be formed & wires shall not be exposed to environment.

The earth wire of 2.5 Sq. mm PVC insulated copper wire, minimum FR grade insulation, electrolyte copper conductor of having insulation of 1.1 KV grade, ISI marked with appropriate colour coding shall be provided. Earth continuity of PVC insulated wire of 2.5 sq.mm having insulation of 1.1 KV grade, ISI marked, green or yellow colour shall be provided to arrays frame. Suitable size & appropriate type of lugs shall be provided to wires.

All cables and wires used shall be of copper conductors of suitable cross-section with crossed linked polythene or polyvinyl insulated with polyvinyl sheath. Stranded and flexible cable shall be used. Non-stranded cable shall not be acceptable except otherwise mentioned and permitted.

The Minimum Current Carrying Capacity of Copper Wire as per the capacity is as follows:

Sl. No.	Capacity of SPP in kW	For DC side (Towards Jn. Box)	For Ac Side (Towards Load)
1	0.5	4.0	2.5
2	1	4.0	2.5
3	2	4.0	2.5
4	3	4.0	2.5
5	5	4.0/6.0	4.0
6	10	6.0/10	4.0-3½ Core Cable

Buried underground cables shall be armoured. Unarmoured buried underground cables shall be enclosed with suitable conduits. Unless, otherwise, specified, all other interconnecting cables shall be armoured.

Conductor size of cables and wires shall be selected based on efficient design criteria such that the overall electrical energy loss in any section of cable or wire is not more than 3% under the designed operating conditions. Conductor size of appropriate capacity must be used.

Cable/wire connections shall be soldered, crimp-on type or split bolt type. Wire nut connections shall not be used.

The cables shall be adequately supported. Outside of the terminals /panels/enclosures shall be accepted by conduits. Cables shall be provided with dry type compression glands wherever inter junction boxes/panels/enclosures.

All cables shall be suited marked or coded for easy identification. Cables and wires shall confirm to the relevant standards suppliers to specify the specification.

The wiring must be carried out in casing capping only.

Danger Plates:

You shall provide at least 8 Danger Notice Plates of 200mm x 15mm made of mild steel sheet, minimum 2mm thick and vitreous enameled white on both sides and with inscription in signal red color 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 Yard & Four-danger notice at Control Room & Battery room.

Lightning & 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 25mm 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.

Earthing Systems:

The Earthing for array and distribution system & Power plant equipment shall be made with GI pipe, 4.5m long 40 mm diameter including accessories and providing masonry enclosures with cast iron cover plate having locking arrangement, watering pipe using charcoal or coke and salt as required as per provisions of IS :3043. Necessary provision shall be made for bolted isolating joints of each Earthing pit for periodic checking of earth resistance.

Each array structure of the SPV yard shall be grounded properly. The array structures and the lightning conductors are to be connected to earth through 25 mm x 5 mm GI strip.

The inverters and battery charger and all equipment inside the control room and battery room to be connected to earth through 25 mm x 5 mm tinned copper strip including supplying of material and soldering. As earth bus be provided inside the control room with 25 mm x 5mm tinned copper strip.

In compliance to Rule 61 of Indian Electricity Rules, 2004 (as amended up to date), all non-current carrying metal parts shall be earthed with two separate and distinct earth continuity conductors to an efficient earth electrode.

Tool kits:

Necessary tools kit is to be provided along with the each Power Plant for any routine maintenance or immediate repair.

Display Board:

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

Comprehensive Maintenance Contract (CMC):

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

Scope of Operation and Maintenance of SPV 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 is 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 such as tightening of all electrical connections, changing of tilt angle of module mounting structure, cleaning & greasing of battery terminals, etc. Shall be covered under CMC.
 - During maintenance period of the power plant, if there is any loss of 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 of the performance of the component or the system shall not degrade.
-

JOINT COMMISSIONING CUM HANDING OVER CERTIFICATE

**This is certified that M/s.....
has installed.....KWp SPV Power Plant / System as per the specifications
specified in the forms and Terms and Conditions of the tender document.
.....
.....**

- 1. Place of Installation :**

- 2. Date of Installation :**

- 3. Capacity of the Power Plant :**

- 4. SPV Module Make / Sl. No. :**

- 5. PCU :**

- 6. Battery Make / Sl. No. :**

- 7. Module Mounting Structure,
ACDB, DCDB, Earthing Kit,
Cables, Lighting, Arrester, FJB
Etc.**

**Signature
Authorized Representative of User Agency**

**Signature of Authorized
Representative of Supplier.**

Annexure – C

Check list for submission of information/documents after supply of system

Sl.No.	Information/document to be submitted	Whether submitted
<u>Site Details</u>		
	Name of the site	
	Postal Address	
	Phone No.	
	Fax No.	
	Name of the Contact Person	
1	System details	
a. Solar PV Modules		
	Make of the Modules	
	Year of Manufacturing	
	Module test report from MNRE authorized test centre Serial Number and IV curve of each module may be submitted in a separate sheet.	
	Warranty card no.	
b. PCU		
	Make	
	Model	
	Year of Manufacturing	
	Serial number of the PCU	
	Test report from MNRE authorized test centre	
	Warranty card no.	
c. Battery bank		
	Make	
	Model	
	Year of manufacturing	
	Warranty card number	
d. Wires and Cables		
	Make of the wires and cables	
	Length (Meter) and Thickness in sq. mm of all wires and cables used	
	BIS test certification for the wires and cables used.	
e. Any other feature of the system that needs special mention.		

Signature
Authorized Representative of User Agency

Signature of Vendor

Annexure – D

Check list for submission of information/documents after supply of system

Sl.No.	Document to be submitted	
1	Joint commissioning certificate as per MNRE	
2	Signed Copy of CMC	
3	Performance Report by Authorized Officers.	
4	Measurement of performance parameters if any done.	
