

**Notice Inviting Bid
For
Design, Manufacture, Testing, Supply, Installation &
Commissioning of 2.5 & 5 .0 kWp Capacity Solar Photovoltaic
Power Plant in Police Pickets across the State of Jharkhand on
Turnkey basis including 5 years CMC on the complete system**

**Under
Solar Photovoltaic Programme
For Financial Year 2011-12
Sponsored by
Ministry of New & Renewable Energy
Government of India, New Delhi
&
Government of Jharkhand**



Jharkhand Renewable Energy Development Agency (JREDA)
328/B, Road No. 4, Ashoknagar, Ranchi. Ph. : 0651-2246970,2247049, 2240692;Fax : 0651-
2240665, e-mail : info@jreda.com; Website : www.jreda.com



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1.BID DETAILS

NIB NO.JREDA/SPV/SPP/Police Pickets/01/2011-12

Date: 05.05.2011

Sealed bids in two parts separately containing Technical Bid (Part-I) and Price Bid (Part-II) are invited only from bonafide, resourceful and experienced manufacturing units of India for the work Design, Manufacture, Testing, Supply, Installation and Commissioning of 2.5 & 5.0 kWp Capacity Solar Photovoltaic Power Plants (SPVPP) in Police Pickets across the State of Jharkhand on **Turnkey basis** including 5 years CMC on the complete systems and having authorized technically equipped dealers/office in the state of Jharkhand with full support of infrastructure and skilled technical persons for providing CMC and after sales service .

Eligible and prospective bidders may quote their offers as per details mentioned below:

1.	Nature of work	Design, Manufacture, Testing, Supply, Installation and Commissioning of 2.5 & 5.0 kWp Capacity Solar Photovoltaic Power Plants in Police Pickets across the State of Jharkhand on Turnkey basis including 5 years CMC on the complete systems
2	Tentative Quantity	<ul style="list-style-type: none">• Solar Photovoltaic Power Plant -2.5kWp – 25 Nos.• Solar Photovoltaic Power Plant -5kWp – 50 Nos. Total Quantity 75 Nos.
3	Cost of Bid document (Non-refundable)	<ul style="list-style-type: none">❖ ` 10,000/- (Rupees Ten Thousands only) for General Bidder.❖ ` 5,000.00 (Rupees Five Thousand only) for SSI units located and registered in the state of Jharkhand.❖ Rs. Nil for SSI units located and registered in the state of Jharkhand as well as with NSIC.
4.	Earnest Money Deposit	<ul style="list-style-type: none">❖ ` 18,75,000/- (Eighteen Lacs Seventy Five Thousand only) for general bidders.❖ ` 9,37,500/- (Nine Lacs Thirty Seven Thousand Five Hundred only) for SSI units located and registered in the state of Jharkhand.❖ Rs. Nil for SSI units located and registered in state of Jharkhand as well as with NSIC who have installed & commissioned any SPVPP in the past to any SNAs/ Govt. Organizations.❖ ` 1,87,500/- (One Lac Eighty Seven Thousand Five Hundred only) for those SSI and NSIC Units who have not installed & commissioned any SPVPP in the past to any SNAs/ Govt. Organization. (` Nil for SSI units located and registered in state of Jharkhand as well as with NSIC who have not installed & commissioned any SPVPP in the past to any SNAs/ Govt. Organization)
5.	Time of completion	90 days from the date of issue of purchase order/ intimation.
6.	Date of commencement and time of issue of bid documents	05-05-2011 from 10.00 am to 5.30 pm on all working days
7	Last date & time of submission of bids document	27-05-2011 till 12:00 noon
8	Date & time of opening technical bid Part-I	27-05-2011 at 12:30 pm.
9	Place of issue and submission of bid documents and address for communication	Jharkhand Renewable Energy Development Agency(JREDA) Plot No. 328/B, Road No.4,Ashok Nagar Ranchi- 834002 Ph.No: 2246970,Fax No: 0651-2240665 Web site: www.jreda.com E-mail: info@jreda.com

Director,
JREDA, Ranchi



2. Notice Inviting Bid

Jharkhand Renewable Energy Development Agency (JREDA), Ranchi has pleasure in inviting offers from eligible Indian bidders for the mentioned work with your best bidding price offer as per our specifications and terms & conditions mentioned in the bid document. Salient features of the bid document are given below :

1. Bid Document

1.1 This bid document comprises of total 45 pages. In addition, any other documents/ instructions/amendments/revisions issued by JREDA to the bidder till the due date of opening of the bids shall also be deemed to be integral part of the bid document. Failure to furnish all the information as per the bid document in every respect will be at the bidder's risk.

2. Cost of Bid Document

2.1 Bid document can be purchased from JREDA office by producing a Demand Draft drawn in favour of "Director, JREDA" on any Indian Nationalized Bank/Scheduled Bank, payable at "Ranchi" of requisite value, as applicable, during the time and period mentioned in chapter 1 (Bid Details).

2.2 Bidders can also download the bid document from JREDA website (www.jreda.com) and submit the cost of the bid document of requisite value in the form of Demand Draft, as applicable along with Part – I (Technical Bid).

2.3 Bid applications without the cost of bid document will be rejected.

2.4 Non-refundable cost of bid document shall be submitted by the bidder during purchasing of bid document in the form of Demand Draft from any Indian Nationalized Bank/Scheduled Bank, drawn in favour of Director, JREDA, Ranchi. The cost of bid documents shall be

- ` 10,000/- (Rs. Ten Thousand only) for general bidders.
- ` 5,000/- (Rs. Five Thousand only) for SSI units located in Jharkhand and registered with Government of Jharkhand
- Rs. Nil for SSI units located and registered in Jharkhand as well as with NSIC.

3. Earnest Money

3.1 Bidders shall submit in Part – I (Technical Bid) the earnest money in the form of Demand Draft or bank guarantee of requisite value as mentioned in chapter 1 (Bid Details). The format for the bank guarantee is given in Proforma - VIII. The bank guarantee shall be made in favour of "Director, JREDA" payable at Ranchi from any Indian Nationalized bank/Scheduled bank.



- 3.2 This bank guarantee shall remain valid for 12 months from the last date of submission of bids.
- 3.3 Bidders seeking concession/exemption from submission of cost of bid document and/or earnest money, will have to submit an attested photocopy of relevant SSI and/or NSIC unit certificate (if applicable), in Part – I of the bid application. Non submission of relevant certificate will lead to rejection of bid.
- 3.4 The request for adjustment of earlier dues in place of earnest money will not be entertained.
- 3.5 The earnest money shall be returned to all unsuccessful bidders, within thirty days from the date of placement of LOI/LOA to the successful bidder(s).
- 3.6 Bid must be accompanied with required amount as earnest money in the form of demand draft or bank guarantee drawn in favour of the director JREDA on any Indian nationalized/ Scheduled bank payable at Ranchi. This shall be enclosed with Part-I of offer (Technical Bid). The earnest money deposit shall be
- ` 18,75,000/- (Rs. Eighteen Lacs Seventy Five Thousand only) for general bidders.
 - ` 9,37,500/- (Rs. Nine Lacs Thirty Seven Thousand Five Hundred only) for SSI units located and registered in Jharkhand.
 - Rs. Nil for those SSI units located and registered in Jharkhand as well as with NSIC who have installed & commissioned SPVPP in the past to any SNAs/ Govt. Organizations.
 - ` 1,87,500/- (One Lac Eighty Seven Thousand Five Hundred only) for those SSI Units who have not installed & commissioned any SPVPP in the past to any SNAs/ Govt. Organizations.
 - **` Nil for SSI units located and registered in state of Jharkhand as well as with NSIC and have not installed & commissioned any SPVPP in the past to any SNAs/ Govt. Organizations.**
- 3.7 The earnest money shall be forfeited if –
- a. Any bidder withdraws his bid or resiles from his offer during the validity period.
 - b. The successful bidder fails to furnish his Acceptance of the Order within fifteen days of placement of LOI/LOA by JREDA.
 - c. The bidder fails to successfully complete the work within the stipulated time frame. Delay in completion due to extreme and unavoidable situations will have to get approval by Director, JREDA. This approval will also have a cut-off date by which the entire work shall have to be completed.

4 Security Deposit / Performance Guarantee

- 4.1 Successful general bidders shall submit a security of deposit 10 % in the form of bank guarantee of the allotted work order value on or before 15 days from issuing of work order.
- 4.2 Successful bidders registered as SSI Unit with Govt. of Jharkhand shall submit a security deposit 5 % in the form of bank guarantee of the allotted work order value on or before 15 days from issuing of work order.



- 4.3 Successful bidders registered as SSI Unit with Govt. of Jharkhand & NSIC and have installed and commissioned SPVPP shall submit a security deposit of 20 % of 10 % in the form of bank guarantee of the allotted work order value on or before 15 days from issuing of work order.
- 4.4 Successful bidders registered as SSI and NSIC Units and have not installed & commissioned any SPVPP in the past three years to any SNAs/ Govt. Organizations shall submit a security deposit of 5 % in the form of bank guarantee of the allotted work order value on or before 15 days from issuing of work order.
- 4.5 Successful bidders registered as SSI Unit with Govt. of Jharkhand & NSIC and have not installed and commissioned any SPVPP system shall submit a security deposit of 20 % of 10 % in the form of bank guarantee of the allotted work order value on or before 15 days from issuing of work order.
- 4.6 The Security Deposit shall be refunded after expiry of 90 days from the actual date of installation & commissioning.
- 4.7 The format for the bank guarantee is given in Proforma - IX. The bank guarantee shall be made in favour of "Director, JREDA" payable at Ranchi from any Indian Nationalized bank/Scheduled bank.

5 Submission of Bids

- 5.1 Bidders are advised to submit their bids strictly based on the specification, terms and conditions contained in the bid document and subsequent revisions/amendments, if any.
- 5.2 The bid shall be prepared and submitted by typing or printing in English with indelible black ink on white paper in consecutively numbered pages duly signed by the authorized signatory with company seal affixed on each page. Any part of the bid, which is not specifically signed by the authorized signatory and not affixed with company seal, shall not be considered for the purpose of evaluation.
- 5.3 Original copy of bid document, amendments/revisions to bid document, including minutes of meeting(s), issued by JREDA, if any, shall be signed and submitted along with the bid.
- 5.4 All the Proformas must be on the bidder's official letterhead (if specified). Any change in wording of the Proforma will lead to rejection of the bid application.**
- 5.5 The offer shall contain no erasures or overwriting except as necessary to correct errors made by bidder. The person signing the offer shall initial such corrections.
- 5.6 COMPLETE BID DOCUMENT INCLUDING ALL ENCLOSURES SHOULD BE SUBMITTED IN HARD BOND OR SPIRAL BINDING AND ALL PAGES SHOULD BE NUMBERED (EXCEPT LEAFLET/CATALOGUE) AND MUST BE SIGNED BY THE COMPANY'S AUTHORIZED SIGNATORY WITH SEAL OF THE COMPANY OTHERWISE BID WILL BE REJECTED.**

6 Mode of Submission of Bids

- 6.1 The Part-I (Technical Bid) and the Part – II (Price Bid) should be sealed in separate envelopes and both these envelopes should be sealed in a third envelope. The Part – II (Price Bid) of only such bidders would be opened who qualify in the Part – I (Technical bid).



6.2 The Part-I (Technical Bid) should be sealed in an envelope superscribed (i) **NIB NO.JREDA/SPV/SPP/Police Pickets/01/2011-12**", (ii) "Part-I (Technical Bid)", (iii) Name and address of the contact person of the bidding firm, and (iv) should be addressed to Director, JREDA. This envelope should contain the following :

- (i) Cost of bid document :
 - a. If bid document purchased from JREDA office, copy of money receipt
 - b. If bid document downloaded from JREDA web site, original Demand Draft.
- (ii) Original earnest money (if applicable) in the form of bank guarantee of requisite value as per Proforma- VIII.
- (iii) Copy of registration certificate of the firm.
- (iv) For availing concession/exemption in submission of cost of bid document and earnest money by SSI and/ or NSIC Unit should submit attested copy of relevant registration certificate.
- (v) Properly filled, signed & stamped Proforma - I, Proforma – II, Proforma – III, Proforma – IV, and Proforma –V.
- (vi) Proforma - VI & VII (without Price) indicating "QUOTED" or "NOT QUOTED" only.
- (vii) Proforma - X and Proforma- XI

6.3 Part – I (Technical Bid) should not contain price of any item. Such cases, even if found anywhere, shall not be given any cognizance.

6.4 Part – I (Technical Bid) should be submitted in original plus 1 copy (1+1)

6.5 The Part-II (Price Bid) should be sealed in an envelope superscribed (i) **NIB NO.JREDA/SPV/SPP/Police Pickets/01/2011-12**, (ii) "Part – II (Price Bid)", (iii) Name and address of the contact person of the bidding firm, and (iv) Should be addressed to Director, JREDA. This envelope should contain the following :

- (i) It should contain only Performa – VI & VII duly filled and signed with stamp by authorized signatory of the bidder.
- (ii) In case of any contradictions between the prices mentioned in figures and words, the prices mentioned in words shall be considered final. Also, in case of any arithmetical error in regard to the total amount and individual rates, the individual rates shall be taken as final and the total amount shall be adjusted accordingly.

6.6 The price bid should not contain any technical matter or other matter except those related to price. The date of opening of the price bid will be notified after opening of Technical bid.

6.7 Part – II (Price Bid) should be submitted in original only (1+0).



6.8 Both, Part – I and Part – II of the bid document should be sealed in a third envelope. The third envelope should be sealed and superscribed (i) “**NIB NO.JREDA/SPV/SPP/Police Pickets/01/2011-12**”, (ii) "Offer for Supply, Installation and Commissioning of 2.5 & 5.0 kWp Capacity Solar Photovoltaic Power Plants in Police Pickets" (iii) Name and address of the contact person of the bidding firm, and (iv) Should be addressed to Director, JREDA, Plot No. 328 B, Road No. -4, Ashok Nagar, Ranchi-834002.

7 Scope of Work

7.1 The scope of work shall be as indicated in the Bid Details.

7.2 JREDA reserves the right to amend the scope of work, accept or reject any or all the offers/bids, in part or in full or cancel/withdraw the invitation for bids without assigning any reasons whatsoever and in such case, the bidder/intending bidder shall have no claim arising out of such action.

7.3 The Bidder shall carefully check the specifications and shall satisfy himself regarding the technical requirements and completeness of the equipment/system.

8 Price

8.1 The Bidder shall quote price as per Proforma – VI & VII. Price quoted shall be firm & binding and shall not be subject to any variation whatsoever, on any account except for statutory variation on taxes & duties during contractual completion period.

8.2 The price should be inclusive of all taxes, duties, levies, FOR destination, etc. as on date.

9 Terms of Payment

9.1 Subject to any deductions, which JREDA may be authorized to make under the terms of the order, the contract price shall be payable as per general clauses of contract enclosed.

10 Authority of Person Signing the Documents

10.1 Authorization letter as per Proforma – III with the seal of the company for the person signing the bid document or attending the bid-opening meeting should be furnished.

10.2 A person signing the bid document or any document forming part of the bid document shall be deemed to warrant that he has authority to bind such offer/ document and if on enquiry it appears that the person signing had no authority to do so, JREDA may, without prejudice to other civil and criminal remedies, cancel the bid/contract and hold the signatory liable for all costs and damages.

11 No Claim or Compensation for Submission of Tender

11.1 The bidder whose bid is not accepted shall not be entitled to claim any costs, charges or expenses in connection with his submission of bid, even though JREDA may decide to withdraw the notice-inviting bid.



12 Eligibility and Qualification Criteria

The bidder shall meet the following requirements:

For General / SSI Units registered with Govt. of Jharkhand/SSI Units registered with Govt. of Jharkhand and NSIC Bidders

- (i) Should be a reputed manufacturer of Solar Photovoltaic based systems. The Manufacturer must be a total integrated system designer including solar modules, PCU, battery, junction boxes and structures and who manufactures at least one or more major sub-systems (Viz. PV modules or battery or electronics) used in Solar Photovoltaic Power Plant.
- (ii) Turnover should be minimum 3 Crores during any one of the past three financial years (i.e. 2008-09, 2009-10 & 2010-11). Turnover for SSI Units located and registered in Jharkhand as well as with NSIC should be a minimum of 1.5 crores during any one of the past three financial years (i.e. 2008-09, 2009-10 & 2010-11).
- (iii) Should have adequate facilities for testing of Solar Photovoltaic Power Plant.
- (iv) The bidder shall furnish registration certificate indicating that they are manufacturers of Solar Photovoltaic based systems including PV Module/Storage Battery/Electronics as applicable.
- (v) The bidder shall submit list of testing facilities available with photographs of the testing facilities.
- (vi) The bidder should have supplied solar photovoltaic power plant of capacity in the range of 1-5 kWp to any State Nodal Agency/ Govt. Organization during any one of the past three financial years (i.e. 2008-09, 2009-10 and 2010-11) and supplies against such work order should have completed satisfactorily as certified by the State Nodal Agency/ Govt. Organization concerned. The bidder shall submit attested certificate of satisfactory completion of work. Non-submission of above document may result in rejection of bid.
- (vii) The bidder should have registered office/ dealer and service network in Jharkhand as per JVAT Act. – 2005.
- (viii) Those suppliers who are registered as SSI and NSIC unit and have not supplied Solar Power Plant of capacity in the range of 1-5 kWp to any SNA/ Govt. Organization in the past are exempted from the clause No. VI. However, they are eligible for maximum supply of 10% of total quantity only provided they qualify both Part-I and Part-II of the NIB. **The bidders must enclose an affidavit stating clearly that they have not supplied any solar photovoltaic power plant system in the past. Non- submission of affidavit will be treated as experienced supplier of solar photovoltaic power plant.**

13 Validity of Offer

- 13.1 Unless otherwise specified, the bidder shall keep his tender valid initially for a period of 180 days from the due date of submission of the offer.



14 Other Terms & Conditions

- 14.1 Bidder shall have to furnish a certificate issued from Department of Industries or NSIC stating that the unit is functional or affidavit from Notary Public stating that the unit is functional.
- 14.2 Insertion, post-script, addition and alteration shall not be recognized unless confirmed by bidder's signature and stamp.
- 14.3 Incomplete tender or tenders not submitted as per requirement as indicated in the NIB are likely to be rejected.
- 14.4 Bidders shall submit their offer strictly as per terms and conditions of the tender document without any deviation.
- 14.5 If at any time any of the documents/information submitted by the bidder is found to be incorrect, false or untruthful, the bid and/or the resultant order may be summarily rejected/ cancelled at the risk of the bidder.
- 14.6 Failure to furnish all information and documentary evidence as stipulated in the bid document or submission of an offer that is not substantially responsive to the bid document in all respects shall be summarily rejected.
- 14.7 All bids will be received in duly sealed cover within the due date and time. Bids received after the due date and time is liable for outright rejection.
- 14.8 JREDA reserves the right to reject part or whole of the bid/order without assigning any reason thereof, postpone the date of receipt and opening of the bids or cancel the bid without bearing any liability, whatsoever, consequent upon such decision.
- 14.9 No postal transaction shall be entertained for obtaining bid documents.
- 14.10 Issuance of bid documents shall not construe that the bidders would be automatically considered qualified.



3 General Terms & Conditions

1.0 Introduction

The instruction/information contained in the bid documents are for guidance and compliance of the intending bidder. Bidders are advised to obtain clarification from JREDA, if any, prior to submission of their bid, failing which it will be deemed that the stipulation made in the bid documents have been read, understood and are acceptable to the bidder.

Bidder shall bear all costs associated with the preparation and submission of the bid, journeys undertaken by them and subsequent bidding process till the award of the order to successful bidder and the JREDA shall in no case, be responsible or liable for these costs, regardless of the conduct or outcome of the bidding process.

2.0 Scope of work

The general scope under this contract includes design, manufacture, total system integration, shop testing, inspection, packing & forwarding, transportation up to project site, loading & unloading, storage in safe custody, erection, carrying out preliminary tests at site, commissioning, performance testing & handing over to the purchaser all the equipment installed including the insurance coverage from the concept to commissioning period including operation and comprehensive maintenance contract.

3.0 Bid documents

Tender documents shall comprise of all the documents mentioned in the table of contents of this documents. In addition to these any other documents/amendments/revisions or instructions issued by JREDA from time to time to bidders till due date of opening of the offers, shall also be deemed to be integral part of the bid document.

4.0 Price

The bidder shall quote his price as per schedule of items of work. The contract price & units rates shall be firm and binding and shall not be subject to any variation except for statutory variation of taxes and duties during the contractual completion period. The price shall be inclusive of all taxes, duties and levies including Jharkhand Vat etc. as on the date opening of tender. The price shall also include designing, manufacturing, inspection, supply, transport, insurance, handling, erection at site, testing, commissioning & 5 year CMC. All applicable charges for taking necessary clearance such as commercial tax, road permit etc. wherever required are included in the contract price.



5.0 Inspection of the factory and Tests

JREDA reserves the right to inspect manufacturer's works/factory to ascertain the capability/availability of necessary equipment and infrastructure required for manufacture of the items offered. JREDA shall have access and right to inspect the work or any part thereof at any stage and to test the goods to confirm their conformity to the technical specifications. Successful bidder shall inform JREDA at least 15 days in advance of schedule dispatch for sample technical audit.

6.0 Payment terms and conditions

Subject to any deduction which JREDA may be authorized to make under this contract, the contractor shall be entitled to payment as follows:

An amount equivalent to 90% of the contract value of the items will be paid after completion of supply, installation, testing and commissioning. Another 10% of the contract value will be released after end of each year @ 2 % after submission of satisfactory performance of the system. However, 10% of the contract value will be released against submission of Bank Guarantee of the requisite value for the complete CMC Period.

7.0 Dispatch Instructions

All items/equipments shall be subject to pre-dispatch by JREDA or its authorized representatives before their dispatch. The manufacturers test report with regard conformity to technical specifications for the items to be dispatched will be submitted to JREDA. However, equipments will be dispatched only after the receipt of "Dispatch Clearance" from JREDA after acceptance of test report. No consignment shall be dispatched without the receipt of dispatch clearance from JREDA.

8.0 Liquidated damages for delay in completion

If the supplier fails in the due performance of the contract to deliver any part of the equipment or complete the work within the time fixed under the contract or any extension thereof granted to him by JREDA and/or to fulfill his obligations in time under the contract, he shall be liable to pay to JREDA as pre-agreed liquidated damages a sum equivalent to ½ % of total contract value per week of such delay or part thereof, subject to maximum of 5% of the total contract value. The liquidated damages for delayed completion shall be recovered from the supplier's bill or security deposit.

9.0 Insurance

The supplier shall arrange for transit and erection insurance of the materials & equipments for setting up of Solar Photovoltaic Power Plant.



10.0 Assignment/ Sub-letting

The Contractor shall not without the prior consent in writing of the purchaser, assign or sublet or transfer his contract or a substantial part thereof provided that any such consent shall not relieve the contractor from any obligation, duty or responsibility under the contract.

11.0 Evaluation of Offer

The Part-II (Price Bid) of only those bidders, whose offers are technically and commercially acceptable after evaluation of the Technical and Commercial Part, will be opened and evaluated. The date & time for opening of Part-II will be uploaded in JREDA web-site. Bidders are requested to visit the web-site (www.jreda.com) regularly and keep themselves informed. The Price Part will be opened at the office of Director, JREDA at Plot No. 328/B, Road No. 4, Ashok Nagar, Ranchi 834002 as intimated, in the presence of eligible bidders or their authorised representative. The authorised representative will be allowed to attend the opening on production of authorization letter.

The prices shall be evaluated separately for 2.5kW and 5kW systems for the complete scope defined in this document. Unit landed price (inclusive all taxes, duties, freight, insurance etc) for 2.5kW and 5kW system will be evaluated and bidders shall be ranked. Bidders shall also be requested to match the lowest evaluated rate. However, JREDA reserve absolute rights to distribute the total quantity amongst all the successful bidders who matched the lowest evaluated rate, in the way it deems fit.

12.0 Completeness of Tender

All fittings, assemblies, accessories, hardware items, civil & electrical works & safety devices as required shall be deemed to have been included in the tender, whether such items are specially mentioned in the BOM or not.

13.0 Compliance with regulations

The contractor shall comply with all applicable laws or ordinances, codes approved standards, rules and regulations and shall procure all necessary municipal and/or other statutory bodies and government permits & licenses etc. at his own cost. The contractor shall leave the purchaser and the Director, JREDA, harmless as a result of any infractions thereof.

14.0 Award of contract

The contract/order shall be awarded to technically acceptable & lowest evaluated bidder.

15.0 Agreement

The supplier has to enter into an agreement in the office of the Director, JREDA, in prescribed format before commencement of supply.



16.0 Income Tax

Without prejudice to the obligations of the supplier under law, any income tax which JREDA may be required to deduct by law/statute, shall be deducted at source and shall be deducted at source and shall be paid to income tax authorities on account of the supplier. JREDA shall provide the supplier a certificate for such deduction of tax.

17.0 Force Majeure conditions

In the event of either party being rendered unable by force majeure to perform any obligation required to be performed by them under this agreement, relative obligation of the party affected by such force majeure shall be treated as suspended during which force majeure condition last. The term force majeure shall have herein mean riots (other than among the contractor's employee), civil commotion, war (whether declared or not), invasion, act of foreign enemies hostilities, rebellion, insurrection, military coup to usurp power, act of god such as earthquake, lightening, floods, fires not caused by contractor's negligence and other cause which the contractor has no control and accepted as such by the Director, JREDA, whose decision shall be final and binding.

If the work is suspended by force majeure conditions lasting for more than 45 days, the purchasers shall have the option of canceling this contract in whole or part thereof, at its discretion. The contractor shall not claim for compensation for force majeure conditions.

18.0 Arbitration

All disputes would be settled within Ranchi jurisdiction of court of law only. All arbitration cases would only be settled under Arbitration & conciliation Act but at Ranchi only.



4. Five Years Comprehensive Maintenance Contract (CMC)

1.0 The Comprehensive Maintenance Contract (CMC)

The total cost of Solar Photovoltaic Power Plants include the provision of 5 Years mandatory Comprehensive Maintenance Contract (CMC). To ensure long term sustainability of the system, the bidder should provide his representatives name, full address, mobile number and photographs to JREDA with one hard copy as well as the names and contact details of all technicians should also be provided.

- 1.1 The Comprehensive Maintenance Contract shall include servicing & replacement guarantee for parts and components (such as battery, electronics, Inverter, PV modules) of Solar Photovoltaic Power Plant for five years from the date of installation. For PV modules, the replacement guarantee is for fifteen (15) years.
- 1.2 The maintenance service provided shall ensure proper functioning of the system as a whole. All preventive/routine maintenance and breakdown/corrective maintenance required for ensuring maximum uptime shall have to be provided by the Manufacturer. Accordingly, the Comprehensive Maintenance Contract (CMC) shall have two distinct components as described below.

2.0 Preventive/Routine Maintenance

This shall be done by the company at least once in a every three months and shall include activities such as, cleaning and checking the health of the SPV system, cleaning of module surface, topping up of batteries, tightening of all electrical connections, regular checks to identify any leakage of electricity, changing of tilt angle of module mounting structure, cleaning & greasing of battery terminals and any other activity that may be required for proper functioning of the Solar Photovoltaic Power Plant. The maintenance record should be maintained properly and to be deposited time to time at JREDA office.

3.0 Breakdown/Corrective Maintenance

- 3.1 Whenever a complaint is lodged by the user, the bidder shall attend to the same within a reasonable period of time (7 days) and in any case the breakdown shall be corrected within a period not exceeding ten days from the date of complaint.
- 3.2 The date of CMC maintenance period shall begin on the date of actual commissioning of Solar Photovoltaic Power Plant.



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- 3.3 If the system found damage / defective due to non maintenance, the cost for correcting the breakdown system will be deducted from bidder payment / security deposit.

 - 3.4 The quality/level of service provided by the Manufacturer would form the basis for determining eligibility of the manufacturer to participate in the subsequent programs of JREDA.



5. Technical Specification of Solar Photovoltaic Power Plant

General Description & Configuration:

The Solar Photovoltaic Power Plant shall have capacity of 2.5 & 5.0 kWp to cater the electricity demand of 5-6 hours duration/day. The system should have the autonomy of 3 consecutive sunless days and shall have the provision of charging battery bank through mains as well. It should be designed such that during sunny hours the loads are fed from SPV Power Plant in addition to battery charging. If the power produced from the Power Plant is not sufficient to feed the loads then the balanced power will be taken from the grid and battery simultaneously according to the available source. The Power Plant shall provide a reliable and independent power supply at a voltage and frequency levels to suit the grid voltage and frequency.

A typical Solar Photovoltaic Power Plant comprises of PV module for charging the battery, solar deep charging battery for storage, a Charge Controller for intelligent charging, discharging and protection of the battery, an Inverter for conversion from DC to AC and complete set of hardware for proper performance and functioning of the system.

Technical specification 2.5Kwp Solar Power Plant.

1. Transmission and distribution voltage:

For the Power Plant: The output voltage shall be 230V, 1-ph, 50 Hz supplied by single inverter. The existing Transmission & Distribution network shall be used to feed the power supply.

2. Technical specifications of major components of Solar PV Power Plant

- a. Solar PV modules and array
- b. Module mounting structures for Solar PV Modules
- c. Junction Boxes
- d. Power Conditioning Unit
- e. Battery Bank with Accessories, Battery protection panel
- f. Cables and installation accessories
- g. Earthing and lightning protection
- h. Battery and control room

3. Solar PV modules and array – 12V 125Wp

Crystalline high power cells shall be used in the Solar Photovoltaic module. Each **Solar module shall consist of redundantly interconnected 36 Photovoltaic cells and peak power rating shall not be less than 125Wp**. To connect the Solar module interconnection cable shall be provided. Electrical conversion efficiency of SPV module (Solar Cell) shall be greater than 13%. Module shall be made of high transmissivity glass front surface giving high encapsulation gain and silicon rubber edge sealant for module protection and mechanical support. All materials used shall have a proven history of reliable and stable operation in external applications. It shall perform satisfactorily in relative humidity up to 100% with temperatures between -10 Deg C and +85 Deg C and withstand gust up to 200km/h from back side of the panel.

Solar module shall be crystalline type, employing lamination technology using established polymer (EVA) and tedlar laminate.

Solar module shall be in accordance with the requirements of IEC 61215. **The bidder shall submit appropriate certificates.**



Other general requirements of PV module:

- Raw materials and technology employed in the module production process shall not be considered relevant so long as the given specifications are satisfied.
- Rated output power of any supplied module shall not have negative tolerance.
- The peak-power point voltage and the peak-power point current of any supplied module and/or any module string (series connected modules) shall not vary more than 3 (three) percent from the respective arithmetic mean for all modules and/or for all module strings, as the case may be.
- The SPV module should be hermetically sealed with impact resistant, low iron and high transmission toughened glass on top and suitable lamination material on the back using state-of-the-art technology.
- The module frame shall be made of a corrosion-resistant material that shall be electrolytically compatible with the structural material used for mounting the modules. Anodized aluminum channels may be used for framing the laminates.
- The module shall be provided with a junction box with provision of external screw terminal connection and with arrangement for provision for by-pass diode. The box shall have hinged, weatherproof lid with captive screws and cable gland entry points or may be of sealed type.
- **Necessary I-V curves are required to be furnished.**
- A strip containing the following details should be laminated inside the module so as to be clearly visible from the front side.
 - (a) Name of the Manufacturer or distinctive logo.
 - (b) Model or Type Number
 - (c) Serial Number
 - (d) Year of make
- The following details shall be screen printed in indelible ink or paint on the back side of each PV module so as to be clearly visible from the back side:
 - (a) Solar Photo Voltaic Program 2011-12.
 - (b) **NIB NO.JREDA/SPV/SPP/Police Pickets/01/2011-12**
 - (c) Not for sale or transfer
 - (d) Statutory action would be taken by JREDA, if it found sold or transferred under different Sections of IPC.

4. Orientation and Tilt of PV Module

Modules alignment and tilt angle shall be calculated to provide the maximum annual energy output.



5. Module Mounting Structure

- Wherever required, suitable number of PV panel structures shall be provided. Structures shall be of flat-plate design either I or L sections.
- The modules shall be mounted on support structures fabricated from drawn steel. The structure will be hot-dip galvanized to make them non-corrosive and long lasting. Galvanizing shall meet ASTM A-123 or equivalent which provide at least spraying thickness of 70 microns on steel as per IS 5905. Aluminum frame structures with adequate strength and in accordance with relevant BIS standards can also be used.
- Structures shall be supplied complete with all members to be compatible for allowing easy installation at the rooftop/garage top site.
- The structures shall be designed to allow easy replacement of any module.
- The structure shall have the 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. The front end of the SPV array must be 1 feet above the roof/garage top. Grouting material for SPV structure shall be as per M15 (1:2:4) concrete specifications.
- The structures shall be designed for simple mechanical and electrical installation. There shall be no requirement of welding or complex machinery at the installation site. If prior civil work or support platform is absolutely essential to install the structures, the supplier shall clearly and unambiguously communicate such requirements along with their specifications in the bid. Detailed engineering drawings and instructions for such prior civil work shall be carried out prior to the supply of goods.
- The supplier shall specify installation details of the PV modules and the support structures with appropriate diagrams and drawings. Such details shall include, but not limited to, the following;
 - a) Determination of true south at the site;
 - b) Array tilt angle to the horizontal with permitted tolerance
 - c) Details with drawings for fixing the modules
 - d) Details with drawings for fixing the junction/terminal boxes
 - e) Interconnection details inside the junction/terminal boxes
 - f) Structure installation details and drawings
 - g) Electrical grounding (earthing)
 - h) Inter-panel/Inter-row distances with allowed tolerances
 - i) Safety precautions to be taken.

The array structure shall support SPV modules at a given orientation and absorb and transfer the mechanical loads to the roof/garage top columns properly. All nuts and bolts shall be of very good quality stainless steel. Detailed design and Drawing shall have to submit to JREDA for acceptance and approval before execution of work.

6. Junction Boxes



The junction boxes shall be dust, vermin and waterproof and made of FRP / Thermo Plastic. The terminals shall be connected to copper bus bar arrangement of proper sizes. The junction boxes shall have suitable cable entry points fitted with cable glands of appropriate sizes for both incoming and out going cables. Suitable markings shall be provided on the bus bar for easy identification and cable ferrules shall be fitted at the cable termination points for identification. The junction boxes shall have suitable arrangement for the Following:

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

7. POWER CONDITIONING UNIT (PCU) – 3kW

Power Conditioning Unit (PCU) provides un-interrupted AC power using battery power. DCDB output will be fed to PCU which mainly consists of MPPT (Max. Power Point Tracker), Charge Controller, Inverter, Voltage Stabilizer and distribution panel along with necessary Displays, Indicators and Alarms. The power conditioning unit (3 KVA or 3kW) shall convert DC Power reduced by SPV modules and store in battery bank into grid quality AC Power.

Power Conditioning Unit (PCU) should conform to IEC 62040, IEC 60950 standards or equivalent BIS standards. The inverter should be from Indian Manufacturer having qualifications as IEC 62040, IEC 60950 standards or equivalent BIS standards. **The bidder shall submit appropriate certificates.**

Common Technical Specification:

- Switching device MOSFET Type MPPT based PWM charger to charge 48 V(nominal) battery bank with >90% Solar charge controller efficiency
- Input voltage from PV array 48 V (nom) 2.5 kW

Protections :

- Short circuit protection
- Input under voltage / Deep discharge of battery
- Input surge voltage protection
- Over current
- Battery reverse polarity protection
- Solar array reverse blocking diode (provided in array junction box)
- DC rated fuse at input and AC rated fuse at output with suitable contactor/solid-state switches for safe start-up & shutdown of system
 - Load surge current
 - Over temperature
 - Under / Over output voltage
 - Under / Over frequency
 - Automatic / manual isolation at input & output
 - Suitable protection for solid-state switching devices
- Dielectric strength 1.1kV between input/output and ground with EMI protections removed
- Cooling Forced air cooling with temperature sensitive fan operation
- Ambient operation (max) 50 degree Celsius
- Relative humidity 95% maximum
- Assembly & mounting As per normal industry practice
- Finish Epoxy powder coating
- Cable entry From rear 200mm above ground level



- Load test at factory Minimum 6 hours at full load

Features

- Bi-directional type inverter
- Stand-alone and hybrid mode of operation.
- High quality with high efficiency and reliability
- Microprocessor based intelligent controller
- Self monitoring capability.
- Integral design with MPPT solar charge controller and inverter
- Highly reliable & efficient solid-state switching devices
- Rated for continuous operation at full load
- High over-load capability of 200% surge for 10 seconds
- Inverter output power factor of 0.8 lag
- Automatic re-start facility after over load triggered shutdown
- Sleep mode feature: Inverter shall switch off output when output load falls below 1-2 % of rated capacity to save no load losses.
- Efficiency : 90% at rated load and normal operating conditions
- 83% (min) at 25% load and nominal input voltage with UPF load %THD Sinewave output with 3% THD at full load UPF and nominal input voltage
- Output voltage 230V +/- 1%
- Output frequency 50Hz \pm 0.5Hz
- Indications Inverter ON Grid ON
- Array ON Inverter Under Voltage /Over Voltage
- Inverter Overload Inverter Over Temperature Battery Low
- Enclosure IP 30 (For indoor application)
- Battery type Tubular lead acid type/SMF VRLA type

8. BATTERY BANK – 48V 300Ah

- The batteries shall be solar photo voltaic batteries of flooded electrolyte, low maintenance, lead Acid and made of hard rubber container.
- The batteries shall use 2V cells Or 12Volt and battery capacity is to be designed at C10 rate with end cell cut off voltage of 1.80V / cell.
- Battery terminal shall be provided with covers.
- Batteries shall be provided with micro porous vent plugs with floats.
- Charging instructions shall be provided along with the batteries.
- Suitable carrying handle shall be provided.
- A suitable battery rack with interconnections & end connector shall be provided to suitably house the batteries in the bank.
- The batteries shall be suitable for recharging by means of solar modules via incremental / open circuit regulators.
- **The batteries shall be designed for operating in ambient temperature of site in the district of Jharkhand.**
- The self discharge of batteries shall be less than 3 % per month at 20 deg. C and less than 6% per month at 30 deg. C
- The charge efficiency shall be more than 90% up to 70% state of charge.
- The topping up frequency shall be 12 months.

Battery Rack & Accessories

- Battery interconnecting links shall be provided for interconnecting the cells in series and in parallel as needed.
- Connectors for inter cell connection (series / parallel) shall be maintenance free screws. Insulated terminal covers shall be provided.

9. AC Distribution Board (ACDB)

- An ACDB shall be provided in between PCU and Loads.
- It shall have MCB of suitable rating for connection and disconnection of PCU from load.



- It shall have MCB's to supply power to control room loads such as exhaust fans, lighting loads and power plug sockets.
- It shall have energy meter to record energy supplied to loads.

10. Cables and accessories

All the cables shall be supplied conforming to IS 1554 / 694 Part 1 of 1988 & shall be of 650 V/ 1.1 kV grade as per requirement. Only polyethylene copper cables shall be used. The size of the cables between array interconnections, array to junction boxes, junction boxes to DCDB, DCDB to PCU etc shall be so selected to keep the voltage drop and losses to the minimum.

The bidder shall supply installation accessories, which are required to install and successfully commission the power plant.

11. Earthing

The array structure of the PV yard shall be grounded properly using adequate number of earthing kits.

All metal casing / shielding of the plant shall be thoroughly grounded to ensure safety of the power plant.

12. Battery room and control room

The control room & the battery bank shall be provided by the end user.

13. Installation and commissioning

Detailed project execution plan shall be submitted along with the offer.

14. Spares & Inventory

- After completion of installation & commissioning of the power plant, necessary tools & tackles are to be provided free of cost by the contractor for maintenance purpose. A list of tools supplied must also be furnished by the contractor.
- A list of requisite spares to keep the system in operation without any breakdowns shall be supplied along with the equipments.
- A minimum set of spares shall also be maintained in the plant itself for the entire period of warranty and operation & maintenance, which upon its use shall be replenished.
 - (a) Critical electronic spares as furnished by vender.
 - (b) Batteries (in sufficient quantity)
 - (c) Electrical items such cables, switches & sockets.
- Any other items for smooth & proper functioning of the system.

15. Life Cycle of the System

The operational life cycle of the system is about 20 years. However, it is consider that the system will be in continuous operation without any major breakdowns or shortfall in performance for a period of 10 years from the date of installation. The supplier shall provide 5 years warranty for the total system and 15 years warranty for PV module apart from mandatory CMC for first five years.

16. Quality and adaptability of the equipment



Bidders must verify the grid behavior, solar Insolation levels, general site conditions on their own before bidding. The bidder shall accordingly ensure that the equipment and the design submitted shall be able to perform as per guaranteed performance levels in the available site conditions. The design of the plant and the equipment offered by the bidders shall be evaluated for its quality and adaptability to the site conditions based on the purchasers past experience, projects earlier executed by the bidders and from other sources. Bidders must submit detailed technical operational parameters and latest plant performance indicators and status complete with the clients address and contact nos. with regard to projects of similar nature already executed. Bidders shall provide complete technical data sheets for each equipment giving details of the specifications along with make/makes in their bid along with basic design of the power plant.

17. Manpower Training

The equipment supplier shall train the persons (02) identified for the operation & maintenance in the matters of general operating principles, operation of the system, regular maintenance activities, preventive maintenance practices etc. The supplier shall provide training for a specified period not less than two months.

Technical specification 5Kwp Solar Power Plant.

1. Transmission and distribution voltage:

For the Power Plant: The output voltage shall be 230V, 1-ph, 50 Hz supplied by single inverter. The existing Transmission & Distribution network shall be used to feed the power supply.

2. Technical specifications of major components of Solar PV Power Plant

- a. Solar PV modules and array
- b. Module mounting structures for Solar PV Modules
- c. Junction Boxes
- d. Power Conditioning Unit
- e. Battery Bank with Accessories, Battery protection panel
- f. Cables and installation accessories
- g. Earthing and lightning protection
- h. Battery and control room

3. Solar PV modules and array – 12V 125Wp

Crystalline high power cells shall be used in the Solar Photovoltaic module. Each **Solar module shall consist of redundantly interconnected 36 Photovoltaic cells and peak power rating shall not be less than 125Wp**. To connect the Solar module interconnection cable shall be provided. Electrical conversion efficiency of SPV module shall be greater than 13%. Module shall be made of high transmissivity glass front surface giving high encapsulation gain and silicon rubber edge sealant for module protection and mechanical support. All materials used shall have a proven history of reliable and stable operation in external applications. It shall perform satisfactorily in relative humidity up to 100% with temperatures between -10 Deg C and +85 Deg C and with stand gust up to 200km/h from back side of the panel.

Solar module shall be crystalline type, employing lamination technology using established polymer (EVA) and tedlar laminate.



Solar module shall be in accordance with the requirements of IEC 61215. **The bidder shall submit appropriate certificates.**

Other general requirements of PV module:

- Raw materials and technology employed in the module production process shall not be considered relevant so long as the given specifications are satisfied.
- Rated output power of any supplied module shall not have negative tolerance.
- The peak-power point voltage and the peak-power point current of any supplied module and/or any module string (series connected modules) shall not vary more than 3 (three) percent from the respective arithmetic mean for all modules and/or for all module strings, as the case may be.
- The SPV module should be hermetically sealed with impact resistant, low iron and high transmission toughened glass on top and suitable lamination material on the back using state-of-the-art technology.
- The module frame shall be made of a corrosion-resistant material that shall be electrolytically compatible with the structural material used for mounting the modules. Anodized aluminum channels may be used for framing the laminates.
- The module shall be provided with a junction box with provision of external screw terminal connection and with arrangement for provision for by-pass diode. The box shall have hinged, weatherproof lid with captive screws and cable gland entry points or may be of sealed type.
- **Necessary I-V curves are required to be furnished.**
- A strip containing the following details should be laminated inside the module so as to be clearly visible from the front side.
 - (e) Name of the Manufacturer or distinctive logo.
 - (f) Model or Type Number
 - (g) Serial Number
 - (h) Year of make
- The following details shall be screen printed in indelible ink or paint on the back side of each PV module so as to be clearly visible from the back side:
 - (e) Solar Photo Voltaic Program 2011-12.
 - (f) **NIB NO.JREDA/SPV/SPP/Police Pickets/01/2011-12**
 - (g) Not for sale or transfer
 - (h) Statutory action would be taken by JREDA, if it found sold or transferred under different Sections of IPC.

4. Orientation and Tilt of PV Module

Modules alignment and tilt angle shall be calculated to provide the maximum annual energy output.

5. Module Mounting Structure

- Wherever required, suitable number of PV panel structures shall be provided. Structures shall be of flat-plate design either I or L sections.
- The modules shall be mounted on support structures fabricated from drawn steel. The



structure will be hot-dip galvanized to make them non-corrosive and long lasting. Galvanizing shall meet ASTM A-123 or equivalent which provide at least spraying thickness of 70 microns on steel as per IS 5905. Aluminum frame structures with adequate strength and in accordance with relevant BIS standards can also be used.

- Structures shall be supplied complete with all members to be compatible for allowing easy installation at the rooftop/garage top site.
- The structures shall be designed to allow easy replacement of any module.
- The structure shall have the 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. The front end of the SPV array must be 1 meter above the roof/garage top. Grouting material for SPV structure shall be as per M15 (1:2:4) concrete specifications.
- The structures shall be designed for simple mechanical and electrical installation. There shall be no requirement of welding or complex machinery at the installation site. If prior civil work or support platform is absolutely essential to install the structures, the supplier shall clearly and unambiguously communicate such requirements along with their specifications in the bid. Detailed engineering drawings and instructions for such prior civil work shall be carried out prior to the supply of goods.
- The supplier shall specify installation details of the PV modules and the support structures with appropriate diagrams and drawings. Such details shall include, but not limited to, the following;
 - a) Determination of true south at the site;
 - b) Array tilt angle to the horizontal with permitted tolerance
 - c) Details with drawings for fixing the modules
 - d) Details with drawings for fixing the junction/terminal boxes
 - e) Interconnection details inside the junction/terminal boxes
 - f) Structure installation details and drawings
 - g) Electrical grounding (earthing)
 - h) Inter-panel/Inter-row distances with allowed tolerances
 - i) Safety precautions to be taken.

The array structure shall support SPV modules at a given orientation and absorb and transfer the mechanical loads to the roof/garage top columns properly. All nuts and bolts shall be of very good quality stainless steel. Detailed design and Drawing shall have to submit to JREDA for acceptance and approval before execution of work.

6. Junction Boxes

The junction boxes shall be dust, vermin and waterproof and made of FRP / Thermo Plastic. The terminals shall be connected to copper bus bar arrangement of proper sizes. The junction boxes shall have suitable cable entry points fitted with cable glands of appropriate sizes for both incoming and out going cables. Suitable markings shall be provided on the bus bar for easy identification and cable ferrules shall be fitted at the cable termination points for identification. The junction boxes shall have suitable arrangement for the Following:

- Combine groups of modules into independent charging sub-arrays that shall be wired to the controller.



- Provide arrangement for disconnection for each of the groups.
- Provide a test point for each sub-group for quick fault location.
- To provide group array isolation.
- The rating of the JB's shall be suitable with adequate safety factor to inter connect the Solar PV array.

7. POWER CONDITIONING UNIT (PCU) – 6kW

Power Conditioning Unit (PCU) provides un-interrupted AC power using battery power. DCDB output will be fed to PCU which mainly consists of MPPT (Max. Power Point Tracker), Charge Controller, Inverter, Voltage Stabilizer and distribution panel along with necessary Displays, Indicators and Alarms. The power conditioning unit (6 KVA or 6kW) shall convert DC Power reduced by SPV modules and store in battery bank into grid quality AC Power.

Power Conditioning Unit (PCU) should confirm to IEC 62040, IEC 60950 standers or equivalent BIS standards. The inverter should be from Indian Manufacturer having qualifications as IEC 62040, IEC 60950 standers or equivalent BIS standards. **The bidder shall submit appropriate certificates.**

Common Technical Specification:

- Switching device MOSFET Type MPPT based PWM charger to charge 96 V(nominal) battery bank with >90% Solar charge controller efficiency
- Input voltage from PV array 96 V (nom) 5 kW

Protections :

- Short circuit protection
- Input under voltage / Deep discharge of battery
- Input surge voltage protection
- Over current
- Battery reverse polarity protection
- Solar array reverse blocking diode (provided in array junction box)
- DC rated fuse at input and AC rated fuse at output with suitable contactor/solid-state switches for safe start-up & shutdown of system
 - Load surge current
 - Over temperature
 - Under / Over output voltage
 - Under / Over frequency
 - Automatic / manual isolation at input & output
 - Suitable protection for solid-state switching devices
- Cooling Forced air cooling with temperature sensitive fan operation
- Ambient operation (max) 50 degree Celsius
- Relative humidity 95% maximum
- Assembly & mounting As per normal industry practice
- Finish Epoxy powder coating
- Cable entry From rear 200mm above ground level
- Load test at factory Minimum 6 hours at full load

Features

- Bi-directional type inverter
- Stand-alone and hybrid mode of operation.
- High quality with high efficiency and reliability
- Microprocessor based intelligent controller
- Self monitoring capability.



- Integral design with MPPT solar charge controller and inverter
- Highly reliable & efficient solid-state switching devices
- Rated for continuous operation at full load
- High over-load capability of 200% surge for 10 seconds
- Inverter output power factor of 0.8 lag
- Automatic re-start facility after over load triggered shutdown
- Sleep mode feature: Inverter shall switch off output when output load falls below 1-2 % of rated capacity to save no load losses.
- Efficiency : 90% at rated load and normal operating conditions
- 83% (min) at 25% load and nominal input voltage with UPF load %THD Sinewave output with 3% THD at full load UPF and nominal input voltage
- Output voltage 230V +/- 1%
- Output frequency 50Hz \pm 0.5Hz
- Indications Inverter ON Grid ON
- Array ON Inverter Under Voltage /Over Voltage
- Inverter Overload Inverter Over Temperature Battery Low
- Enclosure IP 30 (For indoor application)
- Battery type Tubular lead acid type/SMF VRLA type

8. BATTERY BANK – 96V 300Ah

- The batteries shall be solar photo voltaic batteries of flooded electrolyte, low maintenance, lead Acid and made of hard rubber container.
- The batteries shall use 2V cells Or 12Volt and battery capacity is to be designed at C10 rate with end cell cut off voltage of 1.80V / cell.
- Battery terminal shall be provided with covers.
- Batteries shall be provided with micro porous vent plugs with floats.
- Charging instructions shall be provided along with the batteries.
- Suitable carrying handle shall be provided.
- A suitable battery rack with interconnections & end connector shall be provided to suitably house the batteries in the bank.
- The batteries shall be suitable for recharging by means of solar modules via incremental / open circuit regulators.
- **The batteries shall be designed for operating in ambient temperature of site in the district of Jharkhand.**
- The self discharge of batteries shall be less than 3 % per month at 20 deg. C and less than 6% per month at 30 deg. C
- The charge efficiency shall be more than 90% up to 70% state of charge.
- The topping up frequency shall be 12 months.

Battery Rack & Accessories

- Battery interconnecting links shall be provided for interconnecting the cells in series and in parallel as needed.
- Connectors for inter cell connection (series / parallel) shall be maintenance free screws. Insulated terminal covers shall be provided.

9. AC Distribution Board (ACDB)

- An ACDB shall be provided in between PCU and Loads.
- It shall have MCB of suitable rating for connection and disconnection of PCU from load.
- It shall have MCB's to supply power to control room loads such as exhaust fans, lighting loads and power plug sockets.
- It shall have energy meter to record energy supplied to loads.

10. Cables and accessories



All the cables shall be supplied conforming to IS 1554 / 694 Part 1 of 1988 & shall be of 650 V/ 1.1 kV grade as per requirement. Only polyethylene copper cables shall be used. The size of the cables between array interconnections, array to junction boxes, junction boxes to DCDB, DCDB to PCU etc shall be so selected to keep the voltage drop and losses to the minimum.

The bidder shall supply installation accessories, which are required to install and successfully commission the power plant.

11. Earthing

The array structure of the PV yard shall be grounded properly using adequate number of earthing kits.

All metal casing / shielding of the plant shall be thoroughly grounded to ensure safety of the power plant.

12. Battery room and control room

The control room & the battery bank shall be provided by the end user.

13. Installation and commissioning

Detailed project execution plan shall be submitted along with the offer.

14. Spares & Inventory

- After completion of installation & commissioning of the power plant, necessary tools & tackles are to be provided free of cost by the contractor for maintenance purpose. A list of tools supplied must also be furnished by the contractor.
- A list of requisite spares to keep the system in operation without any breakdowns shall be supplied along with the equipments.
- A minimum set of spares shall also be maintained in the plant itself for the entire period of warranty and operation & maintenance, which upon its use shall be replenished.
 - (a) Critical electronic spares as furnished by vender.
 - (b) Batteries (in sufficient quantity)
 - (c) Electrical items such cables, switches & sockets.
- Any other items for smooth & proper functioning of the system.

15. Life Cycle of the System

The operational life cycle of the system is about 20 years. However, it is consider that the system will be in continuous operation without any major breakdowns or shortfall in performance for a period of 10 years from the date of installation. The supplier shall provide 5 years warranty for the total system and 15 years warranty for PV module apart from mandatory CMC for first five years.

16. Quality and adaptability of the equipment

Bidders must verify the grid behavior, solar Insolation levels, general site conditions on their own before bidding. The bidder shall accordingly ensure that the equipment and the design submitted shall be able to perform as per guaranteed performance levels in the available site conditions. The design of the plant and the equipment offered by the bidders shall be evaluated for its quality and adaptability to the site conditions based on the purchasers past experience, projects earlier executed by the bidders and from other sources. Bidders must submit detailed technical operational parameters and latest plant performance indicators and status complete with the clients address



and contact nos. with regard to projects of similar nature already executed. Bidders shall provide complete technical data sheets for each equipment giving details of the specifications along with make/makes in their bid along with basic design of the power plant.

17. Manpower Training

The equipment supplier shall train the persons (02) identified for the operation & maintenance in the matters of general operating principles, operation of the system, regular maintenance activities, preventive maintenance practices etc. The supplier shall provide training for a specified period not less than two months.



Information about the Bidding Firm

(To be submitted in the official letter head of the company)

NIB NO.JREDA/SPV/SPP/Police Pickets/01/2011-12

Date: 28.04.2011

Sl.	Particulars
1.	Name of the Bidder
2.	Address of Bidder with Telephone, Fax, email
3.	Address of the Registered Office
4.	Address of the works
5.	GPS Co-ordinate of Registered Office
6.	GPS Co-ordinate of Factory Campus
7.	Name & Designation of Authorized Signatory for Correspondence
8.	Nature of Firm (Proprietorship/Partnership /Pvt. Ltd./Public Ltd. Co./Public Sector)
9.	Permanent Account Number (PAN)/TIN (Attach proof)
10.	Firm's Registration Number (Attach proof)
11.	Sales Tax/Value Added Tax Registration Number (Attach proof)
12.	Specify the Item Originally Manufactured (SPV module/Electronics/Battery) (Attach proof)
13.	Details of in-house testing facility
14.	Office/ Dealer/ Service network in Jharkhand (Give details)
15.	Name of Manufacturer with Full Address



	1.	SPV Module (Enclose IEC Certificate)	
	2.	3kW PCU (Enclose IEC Certificate)	
	3.	6kW PCU (Enclose IEC Certificate)	
	4.	Battery Bank for 48v 300Ah	
	5.	Battery Bank for 96v 300Ah	
16.	Particulars of Earnest Money		
17.	Quoted for		
	1.	Solar Photovoltaic Power Plant - 2.5kWp	_____ Nos.
	2.	Solar Photovoltaic Power Plant - 5kWp	_____ Nos.
18.	Annual Turnover for last three year (Attach Proof)		2008-09
			2009-10
			2010-11
19.	Place where Materials will be Manufactured		
20.	Place where Materials will be Available for Inspection		
21.	Whether the Bidder has submitted details with regard to supplies made to important organizations.		
22.	Other details and remarks, if any		

Yours faithfully,

(Signature of Authorized Signatory)

Name :

Designation :

Company seal :

(Separate sheet may be used for giving detailed information in seriatim duly signed. This bid proforma must be submitted duly signed in case separate sheet is submitted).



(Proforma –II)

Format for covering letter

(To be submitted in the official letter head of the company)

NIB NO.JREDA/SPV/SPP/Police Pickets/01/2011-12

Date:

To,

Director,
Jharkhand Renewable Energy Development Agency
Plot No. 328/B, Road No. 4, Ashok Nagar,
Ranchi.

Sub:- Offer in response to NIB NO. _____

Sir,

We are hereby submitting our offer in compliance with the terms and condition of NIB NO. _____ . As specified the offer has been submitted in two envelopes duly marked and sealed.

We further declare:

- a) That we are submitting this offer under the above mentioned NIB after having fully read and understood the nature of work and having carefully noted all the terms and condition laid down in the offer documents.
- b) That, we have never been debarred from executing similar type of work by any Central/State/Public Sector undertakings/Departments.
- c) That we shall execute the work offered as per the terms and conditions of the offer on award of work.
- d) That our offer shall remain valid for placement of order for a period of 180 days from the date of opening of the tender.

Authorized Signatory

Name :-
Designation:
Company Seal :



Authority Letter for Signing NIB Document & Attending Bid Opening Meeting

(To be submitted in the official letter head of the company)

NIB NO. JREDA/SPV/SPP/Police Pickets/01/2011-12

Date:

To,
The Director
Jharkhand Renewable Energy Development Agency (JREDA)
Plot No. 328/B, Road No. 4, Ashok Nagar,
Ranchi – 834002.

Sub : Authority Letter for Signing NIB Document & Attending Bid Opening Meeting

I hereby authorize (Name & Designation) to sign the NIB Document and attend the Bid Opening Meeting to be held on at JREDA on behalf of our company.

He is also authorized to provide clarifications/confirmations, if any, and such clarifications/ confirmations shall be binding on the company. The specimen signature of is attested below.

.....

(Specimen Signature)

Name :

Designation :

.....

(Signature of Authorized Signatory)

Name :

Designation :

Company Seal :

Yours faithfully,

(Signature of Authorized Signatory)

Name :

Designation :

Note :

- 1. Authorization can be for more than one persons



Format for confirmation of Basic Eligibility Criteria
(To be submitted in the official letter head of the company)

NIB NO.JREDA/SPV/SPP/Police Pickets/01/2011-12

Date:

To,

Director,
Jharkhand Renewable Energy Development Agency
Plot No. 328/B, Road No. 4, Ashok Nagar,
Ranchi.

Sub:- Confirmation of meeting the basic eligibility criteria NIB NO. _____

Sir,

Having read understood and examined the tender documents; we hereby confirm the following towards minimum eligibility conditions to participate in the aforesaid tender.

- i) We are reputed manufacturer of Solar Photovoltaic based system and have adequate in-house testing facilities for testing of Solar Photovoltaic Power Plant.
- ii) We possess adequate facility and network in the state of Jharkhand for providing after sale services.

Authorized Signatory

Name:

Designation:

Company Seal:

Enclosures

- 1. Copy of registration certificate indicating we are manufacture of Solar Photovoltaic based system.
- 2. List of testing facilities with their photographs



(Proforma –V)

TECHNICAL DETAIL FORM

(To be submitted in the official letter head of the company)

NIB NO.JREDA/SPV/SPP/Police Pickets/01/2011-12

Date:

S.No.	Particulars	Details
1	Mounting arrangement for Solar module	:
2	Solar module frame material	:
3	Module type	:
4	No. of solar cells per module	:
5	Make of Solar module (Attach IEC Certificate)	:
6	Country	:
7	Weather resistant HDPE junction Box (IP55)	:
8	Max. Temperature rise of solar cells under severe working condition over max. Ambient temperature	:
9	Nominal voltage	:
10	Operating voltage of solar module (nom)	:
11	Peak power voltage (Vmp)	:
12	Peak Power current (Imp)	:
13	Open circuit voltage (Voc)	:
14	Short circuit current (Isc)	:
15	Make of PCU for 3kW (Attach IEC Certificate)	
16	Make of PCU for 6kW (Attach IEC Certificate)	
17	Make of Battery	

18. Undertaking

- a) We agree to manufacture and supply quality Solar Power Plant as per NIB specifications.
- b) We agree to give performance guarantee as specified and to abide by the scope of the guarantee as prescribed under the tender document.
- c) We agree to operate as per the terms & conditions of the tender.

We undertake to supply quality products for promoting energy efficiency in the era of lighting systems.

Signature of the Bidder _____

(This bid proforma must be submitted duly signed in case separate sheet is submitted)



(Proforma –VI)

NIB NO.JREDA/SPV/SPP/Police Pickets/01/2011-12

Date:

Price Bid Offer

S.No.	Description	System Unit Price	
		In Figure	In Words
1.	Cost of 2.5kWp System including transportation, Packaging, FOR destination, installation, Commissioning inclusive of all taxes etc. with 5 Years Comprehensive Maintenance Contract (CMC)		
2	Cost of 5kWp System including transportation, Packaging, FOR destination, installation, Commissioning inclusive of all taxes etc. with 5 Years Comprehensive Maintenance Contract (CMC)		
Total			

Authorized Signatory

Name:

Designation:

Company Seal:

(This bid proforma must be submitted duly signed in case separate sheet is submitted)



(Proforma-VII)

NIB NO.JREDA/SPV/SPP/Police Pickets/01/2011-12

Date:

A. Bill of Material for 2.5Kwp Solar Power Plant

Sl. No.	Description of Material	Total Quantity	Total Price
1	Solar Module 12V 125Wp	20 nos.	
2	Module Mounting structures	5 nos.	
3	Array Junction Box	5 nos.	
4	Main Junction Box	1 no.	
5	PCU 48V,3kw/ 3Kva, 230V,50Hz Single Phase	1 no.	
6	Batter bank 48V, 300Ah	1 set.	
7	Cables and accessories	1 set.	
8	AC Distribution Board (ACDB) with Energy Meter	1 no.	
9	Super earthing Kit	1 no.	
		Total Cost	

Rupees in words

Signature of the Bidder _____

Note :

- Separate sheet may be used for giving detailed information in seriatim duly signed. This bid proforma must be submitted duly signed in case separate sheet is submitted
- The supplier has to quote for the qty as needed at site to complete the installation, no extra cost shall be provided latter on.



NIB NO.JREDA/SPV/SPP/Police Pickets/01/2011-12

Date:

B. Bill of Material for 5Kwp Solar Power Plant

Sl. No.	Description of Material	Total Quantity	Total Price `
1	Solar Module 12V 125Wp	40 nos.	
2	Module Mounting structures	5 nos.	
3	Array Junction Box	5 nos.	
4	Main Junction Box	1 no.	
5	PCU 96V,6kw/ 6Kva, 230V,50Hz Single Phase	1 no.	
6	Batter bank 96V, 300Ah	1 no.	
7	Cables and accessories	1 set.	
8	AC Distribution Board (ACDB) with Energy Meter	1 no.	
9	Super ear thing Kit	1 no.	
		Total Cost	

Rupees in words

Signature of the Bidder _____

Note :

- Separate sheet may be used for giving detailed information in seriatim duly signed. This bid proforma must be submitted duly signed in case separate sheet is submitted
- The supplier has to quote for the qty as needed at site to complete the installation, no extra cost shall be provided latter on.



Format for Submitting Bank Guarantee in Lieu of Earnest Money

NIB NO. JREDA/SPV/SPP/Police Pickets/01/2011-12

Date:

(To be executed on non-judicial stamp paper of appropriate value)

To,
The Director
Jharkhand Renewable Energy Development Agency (JREDA)
Plot No. 328/B, Road No. 4, Ashok Nagar,
Ranchi – 834002.

WHEREAS (Manufacturer's name)
(hereinafter referred to as "Manufacturer"), a company registered under the Companies Act, 1956 and
having its registered office at is required to deposit
with you, the Purchaser, by way of Earnest Money Rs. (Rupees
..... only) in connection with its tender for the work with
reference to Notice Inviting Bid (NIB) No. dated
as per specification and terms and conditions enclosed therein.

WHEREAS the Manufacturer as per "Notice Inviting Bid, Earnest Money" has agreed to establish a
Bank Guarantee in Your favour through us valid up to (date) instead of
deposit of earnest money in cash.

WHEREAS you have agreed to accept a Bank Guarantee from us in instead of
earnest money in cash from the Manufacturer.

1. We (Bank) hereby agree
and undertake to pay you on demand the said amount of Rs. (Rupees
..... only) without any protest or demur in the event the
Manufacturer/Tenderer after submission of his tender, resiles from or withdraws his offer or
modifies the terms and conditions thereof in a manner not acceptable to you or expresses his
unwillingness to accept the order placed and/or letter of intent issued on the Manufacturer/Tenderer
for the work under "Notice Inviting Bid Ref. No. : _____".
2. Your decision as to whether the Manufacturer/Tenderer has resiled from or has withdrawn his offer
or has modified the terms and conditions thereof in a manner not acceptable to you or has
expressed his unwillingness to accept the order placed and/or Letter of Intent issued by you on the
Manufacturer/Tenderer for the work under "Notice Inviting Bid Ref. No. :



_____ in this regard, shall be final and binding on us and we shall not be entitled to question the same.

3. Notwithstanding anything contained in the foregoing, our liability under this Guarantee shall be restricted to Rs. (Rupees only).
4. This Guarantee shall remain valid and in full force and effect upto (date) and shall expire thereafter unless an intimation is given to the Bank by you earlier in writing discharging us from our obligation under this Guarantee.
5. We shall not revoke this Guarantee during its currency except by your consent in writing.
6. This Guarantee shall not be affected by any change in the constitution of the Manufacturer/Tenderer or yourselves or ourselves but shall ensure to your benefit and be enforceable against our legal successors or assignees by you or your legal successors.
7. Notwithstanding anything contained herein above unless a demand or claim under this Guarantee is made on us in writing within six months from the date of expiry of this Guarantee we shall be discharged from all liabilities under this Guarantee thereafter.
8. We have power to issue this Guarantee under our Memorandum and Articles of Association and the undersigned who is executing this Guarantee has the necessary power to do so under a duly executed Power of Attorney granted to him by the Bank.

Signed and Delivered

For and on behalf of Bank.
(Banker's Name)

Name of Bank Manager :

Address

.....



PROFORMA FOR BANK GUARANTEE TOWARDS PERFORMANCE GUARANTEE
(SECURITY DEPOSIT)

(To be executed on non-judicial stamp paper of appropriate value)

Name of the Bank.....Bank Limited

Address.....Guarantee No.....

A/c Messrs.....

Date of Expiry.....limit to liability Rs.....

Contract No.....

For (Name of Work).....

Subject : **Security Deposit**

Date.....2011

GUARANTEE BOND

1. In consideration of the JHARKHAND RENEWABLE ENERGY DEVELOPMENT AGENCY (JREDA) (hereinafter called the Company) having agreed to exempt _____ (hereinafter called the said contractor(s) from the demand under the terms and conditions of an Agreement dated _____ made between _____ and _____ for _____ (hereinafter called the said Agreement) of security deposit for the due fulfillment by the said contractor(s) of the terms and conditions contained in the said Agreement, on production of a bank guarantee for Rs. _____ (Rupees _____ only) we _____ (indicate Name of the Bank) (hereinafter referred to as the Bank) at the request of _____ (Contractor(s)) do hereby undertake to pay to JREDA an amount not exceeding Rs. _____ against any loss or damage caused to or suffered or would be caused to or suffered by the Company by reason of any breach by the said contractor(s) of any of the terms or conditions contained in the said Agreements.

2. We _____ (indicate the name of the Bank) do hereby undertake to pay the amounts due and payable under this guarantee without any demur, merely on a demand from JREDA stating that the amount claimed is due by way of loss or damage caused to or would be caused to or suffered by JREDA by reason of breach by the said contractor(s) of any of the terms or conditions contained in the said Agreement or by reason of the contractor(s) failure to perform the said Agreement. Any such demand made on the bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs _____.



3. We undertake to pay JREDA any money so demanded notwithstanding any dispute or disputes raised by the contractor(s)/supplier(s) in any suit or proceeding pending before any court or Tribunal or arbitration relating thereto our liability under these presents being absolute and unequivocal.

The payment so made by us under this bond shall be a valid discharge of our liability for payment there under and the contractor(s)/supplier(s) shall have no claim against us for making such payment.

4. We, _____(indicate the name of the bank) further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Agreement and that it shall continue to be enforceable till all the dues of JREDA under or by virtue of the said Agreement have been fully paid and its claims satisfied or discharged or till JREDA _____ certified that the terms and conditions of the said Agreement have been fully and properly carried out by the said Contractor(s) and accordingly discharges this guarantee. Unless a demand or claim under this guarantee is made on us in writing on or before the _____(date) we shall be discharged from all liability under this guarantee thereafter.

5. We, _____(indicate the name of the Bank) further agree that JREDA shall have the fullest liberty without or consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Agreement or to extend time of performance by the said contractor(s) from time to time or to postpone for any time or from time to time any of the powers exercisable by the Company against the said Contractor(s) and to forbear or enforce any of the terms and conditions relating to the said Agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Contractor(s) or for any forbearance, act or omission on the part of JREDA or any indulgences by JREDA to the said Contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.

6. This guarantee will not be discharged due to the change in the constitution of the bank or the Contractor(s)/supplier(s).

7. We, _____(the name of the Bank) further undertake to extend the validity of this guarantee beyond the period stated in hereinabove or as extended from time to time, for such further period as may be required by JREDA in writing before the expiry of this guarantee and upon such extension(s), all terms and conditions of this guarantee shall remain in full force till the expiry of the extended period(s).

8. We, _____(indicate the name of bank) lastly undertake not to revoke this guarantee during its currency except with the previous consent of JREDA in writing.



9. We have power to issue this guarantee under our Memorandum and Articles of Association and the undersigned has full powers to sign this guarantee on our behalf under power of Attorney dated granted to his and/or the resolution dated passed by our Company of Directors in accordance with our constitution.

2011

Dated the.....day of.....

For (indicate the name of Bank).

Signature_____

Name_____

Designation_____

Authorisation No_____

In presence of

1. _____

2. _____

Note: Validity of BGs shall be 180 days from the date of LOI/LOA .

Date &

Place_____

Bankers' Seal



(Proforma – X)

DEVIATION STATEMENT

NIB NO.JREDA/SPV/SPP/Police Pickets/01/2011-12

Date:

Details of Deviations from the NIB document are as under:-

S.No.	Page No. of NIB Documents	Clause No.	Details of deviations

Authorized Signatory

Name:

Designation:

Company Seal:

(This bid proforma must be submitted duly signed in case separate sheet is submitted)



(Proforma – XI)

Check List for Order of Submission of Bid

Sl.	Details	Reference Page No.
1.	Demand Draft for cost of bid document if downloaded from web site/Photocopy of money receipt if bid document is purchased from JREDA Office	
2.	Earnest Money Bank guarantee or Demand Draft as applicable	
3.	Bidders seeking concession/exemption from submission of earnest money, will have to submit an attested photocopy of SSI unit certificate issued from the Govt of Jharkhand and from NSIC (if applicable)	
4.	Proforma – 11 (Check List)	
5.	Proforma – 1 (Information about the Bidding Firm)	
6.	Proforma – 2 (Forwarding Letter)	
7.	Proforma – 3 (Authority Letter for Signing Bid Document & Attending Bid Opening Meeting)	
8.	Proforma – 4 (Confirmation of Basic Eligibility criteria)	
9.	Proof of original manufacturer	
10.	List of testing facilities available along with photograph	
11.	Proforma – 10 (Deviation Statement)	
12.	Proforma – 5 (Technical Data Form)	
13.	Copy of Solar Module IEC Certificate	
14.	Copy of PCU IEC Certificate	
15.	Proforma – 6 (Price Bid)–without showing the price quoted and showing “QUOTED” or “NOT QUOTED”	
16.	Proforma – 7 (BOM)–without showing the price quoted and showing “QUOTED” or “NOT QUOTED”	
17.	Self attested photocopies of purchase orders/contracts received from the State Nodal Agencies/ Govt. Organizations.	
18.	Satisfactory completion of work certificate from the State Nodal Agencies/ Government Organization for which the bidder has done work and mentioned in this bid document.	
19.	Affidavit from SSI and NSIC units who have not installed & commissioned any SPVPP in the past to any SNAs/ Govt. Organization.	
20.	Proof of annual turnover for past 3 years for SPV systems	
21.	Copy of Sales Tax/VAT Registration Certificate	
22.	Copy of MoU signed for Pre-bid tie-up	
23.	Financial capability/Solvency Certificate from bank/Financial Institution (indicating BG Limit, Cash Credit Limit, Overdraft limit & Cheque Purchase Limits)	
24.	Copy of PAN and Firm Registration Certificate	
25.	Unit functional certificate/ affidavit	
26.	Complete of set of original (purchased/downloaded) tender document duly signed and seal	
27.	Product leaflet/Catalogue (if any)	

Total No. of Pages including Tender Document enclosed :

Please ensure:

1. That all information is provided strictly in the order mentioned in the check list mentioned above.
2. Note that this is a zero deviation tender. Bidders are advised to strictly confirm compliance to bid conditions and not to stipulate any deviation/conditions in their offer. Subsequent to bid submission, JREDA may or may not seek confirmations/clarifications and any offer(s) not in line with Bid conditions shall be liable for rejection.
3. Any clarification/confirmation bidder may require shall be obtained from JREDA before submission of the bid. Bidder shall submit complete bidding document including subsequent amendment, modification and revision, duly signed and stamped as a token of having read, understood and accepted all the terms and condition mentioned therein.