

**Bid Specifications for  
Stand Alone Solar Power Plant  
for  
Jharkhand Government Institutions**

**(2.5 KW, 4.8 KW and 5.0 KW)**

**Sponsored by :  
The Ministry of New and Renewable Energy Sources (MNRES),  
Government of India**



**Jharkhand Renewable Energy Development Agency  
(JREDA)**

328/B, Road No. 4, Ashoknagar, Ranchi. Ph. : 0651-  
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# Contents

1. Bid Details .....	03
2. Notice Inviting Bid .....	05
3. General Terms & Conditions .....	14
4. Technical Specification .....	24
5. Five Years Comprehensive Maintenance Contract (CMC) .....	34
6. Proforma – 1 : Forwarding Letter .....	37
7. Proforma – 2 : Authority Letter for Signing Bid Document .....	39
& Attending Bid Opening Meeting	
8. Proforma – 3 : Information about the Bidding Firm .....	40
9. Proforma – 4 : Details of Orders Received and Executed .....	43
in Past 3 Years	
10. Proforma – 5 : No Deviation Certificate .....	45
11. Proforma – 6 : Format for Submitting Bank Guarantee .....	46
in Lieu of Earnest Money	
12. Proforma – 7 : Format for Guarantee Card to be Supplied .....	48
with Each SPP	
13. Proforma – 8 : Format for Certificate of Delivery of SPP.....	50
Received by the Consignee as Proof of Compliance by the Supplier	
14. Proforma – 9 : Format for Letter from the Consignee that the .....	51
Required No. of Guarantee Cards Have Been Issued by the Supplier	
15. Proforma – 10: Format for Location-wise Detail of the Module .....	52
Battery & Charge Controller Utilization Report of SPPs Installed Under SPV Program	
16. Proforma – 11: Format for Location-wise Details of the.....	53
Trainings Organized	
17. Proforma – 12: Format for Submitting the Price Schedule.....	54
18. Check List & Format for Submission of Bid.....	55

# 1. Bid Details

SI	Description	Details
1.	Notice Inviting Bid (NIB) No.	JREDA/SPV (SPP)/2008-09/02
2.	Scope of work	Designing, manufacturing, supplying, installation, testing & commissioning including 5 years Comprehensive Maintenance Contract (CMC) of Solar Photo Voltaic Stand Alone Power Plants for Jharkhand Renewable Energy Development Agency (JREDA) during 2008-09. The quantity required is given below :  2.5 KW = 25 Nos. 4.8 KW = 198 Nos. 5.0 KW = 50 Nos.
3.	Place of issue & submission of bid documents and address for communication	Jharkhand Renewable Energy Development Agency (JREDA) Plot No. 328/B, Road No. 4, Ashok Nagar, Ranchi, PIN 834 002, Jharkhand. Phone No. : 0651-2246970; Fax No. : 0651-2240665 Website : www.jreda.com , E-mail : info@jreda.com
4.	Period of sale of bid document	Date : 7 <sup>th</sup> to 24 <sup>th</sup> April 2009 Time : From 10:30 A.M. to 5:00 P.M. on all working days
5.	Last date & time of submission of bids	25 <sup>th</sup> April 2009 till 12:00 Noon
6.	Date & time of opening of Part – I (Technical Bids)	25 <sup>th</sup> April 2009 at 2.00 P.M.
7.	Date & time of opening of Part – II (Financial Bids)	Technically qualified bidders will be communicated the date & time of opening of Part-II (Financial Bids) by JREDA
8.	Cost of bid document (Non-refundable)	<ul style="list-style-type: none"> <li>➤ For General Category : Rupees Ten Thousand</li> <li>➤ For SSI units registered in Jharkhand State : Rupees Five Thousand</li> <li>➤ For SSI units registered with: Nil Govt. of Jharkhand &amp; NSIC</li> </ul>
9.	Earnest Money (Refundable)	<ul style="list-style-type: none"> <li>➤ For General Category : Rs. 15,00,000/- (Rupees Fifteen Lakhs) for the minimum quantity quoted (50 nos.)  and Rs. 6,00,000/- (Rupees Six Lakhs for every additional 20 SPPs quoted for supply)</li> <li>➤ For SSI units registered in Jharkhand State : Rs. 7,50,000/- (Rupees Seven Lakh Fifty Thousand) for the minimum quantity quoted (50 nos.)  and Rs. 3,00,000/- (Rupees</li> </ul>

		<p>Three Lakhs for every additional 20 SPPs quoted for supply)</p> <p>➤ For SSI units registered with: Nil Govt. of Jharkhand &amp; NSIC</p>
10.	Minimum lot size	<p>The minimum quantity quoted should be 50 Nos.</p> <p>Bidders may also submit their offer for additional quantity in multiples of 20 Nos.</p> <p>For SSI Units, the quoted quantity should not be more than their annual production capacity.</p>
11.	Time of completion	Within six (6) months from the date of order.
12.	Validity of offer	The offer shall remain valid upto 180 days from the due date of submission of offer.
13.	Validity of earnest money	The earnest money shall be submitted by the bidder in the form of bank guarantee of any Nationalized bank. This bank guarantee shall remain valid for 12 months from the last date of submission of bids.

## 2. Notice Inviting Bid

NIB No. : JREDA/SPV (SPP)/2008-09/02  
03.03.2009

Date :

To,

M/s

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**Sub : Designing, Manufacturing, Supplying, Installation, Testing & Commissioning, including 5 Years Comprehensive Maintenance Contract (CMC) of Solar Photo Voltaic Stand Alone Power Plant for Jharkhand Renewable Energy Development Agency during Year 2008-09**

Dear Sir/Madam,

Jharkhand Renewable Energy Development Agency (JREDA), Ranchi has pleasure in inviting offers from eligible Indian bidders for the above work with your best binding 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 18 chapters. 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, as applicable alongwith Part – I (Technical Bid).
- 2.3 Bid applications without the cost of bid document will be rejected.

## **3. Earnest Money**

- 3.1 Bidder shall submit in Part – I (Technical Bid) the earnest money in the form of bank guarantee of requisite value as mentioned in chapter 1 (Bid Details). The format for the bank guarantee is given in chapter 11 (Proforma - 6). 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 earnest money, will have to submit an attested photocopy of relevant SSI unit certificate issued from the Govt of Jharkhand and from NSIC (if applicable), in Part – I of the bid application. Bidders failing to submit earnest money or SSI/NSIC registered Units in Jharkhand, not submitting relevant SSI/NSIC registration certificate from the Govt of Jharkhand and from NSIC (as the case may be), will be rejected.
- 3.4 The attested photocopy of registration certificate issued by Govt of Jharkhand or NSIC should clearly indicate the validity period. The photocopy of registration certificate should be attested by Gazetted officer or Notary public.
- 3.5 The request for adjustment of earlier dues in place of earnest money will not be entertained.
- 3.6 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).

3.7 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 be got approved by Director, JREDA. This approval will also have a cut-off date by which the entire work will have to be completed.

#### **4. Submission of Bids**

- 4.1 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.
- 4.2 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.
- 4.3 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.
- 4.4 All the Proformas must be on the bidder's official letterhead. Any change in wording of the Performa will lead to rejection of the bid application.
- 4.5 The offer shall contain no erasures or overwriting except as necessary to correct errors made by bidder. Such corrections, if any, shall be initialed by the person signing the offer.

#### **5. Mode of Submission of Bids**

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

5.2 The Part – I (Technical Bid) should be sealed in an envelope super scribed (i) “NIB No. : JREDA/SPV (SPP)/2008-09/02”, (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 (for the bidders who have downloaded the bid document from JREDA web site) or copy of demand draft/money receipt if purchased from JREDA office.
- (ii) Original earnest money in the form of bank guarantee of requisite value (in Proforma – 6).
- (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 Unit registered in Jharkhand, bidder should submit attested copy of relevant SSI registration certificate from Govt of Jharkhand and from NSIC.
- (v) Properly filled, signed & stamped Proforma - 1, Proforma – 2, Proforma – 3, Proforma – 4 and Proforma – 5.
- (vi) Letter of acceptance to furnish the information in Proforma – 7, Proforma – 8, Proforma – 9, Proforma – 10 and Proforma – 11, if the bidder is declared successful bidder and is given LOI/LOA by JREDA.

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

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

5.5 The Part – II (Financial Bid) should be sealed in an envelope super scribed (i) “NIB No. : JREDA/SPV (SPP)/2008-09/02”, (ii) “Part – II (Financial 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 - 12 duly filled-up in both figures and words 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.



- 5.6 Part – II (Financial Bid) should be submitted in original only (1+0).
- 5.7 Both, Part – I and Part – II of the bid document should be sealed in a third envelope. The third envelope should be sealed and super scribed (i) “NIB No. : JREDA/SPV (SPP)/2008-09/02”, (ii) "Offer for Supply & CMC of SPPs (Model II) under Solar Photo Voltaic Program"., (iii) Name and address of the contact person of the bidding firm, and (iv) Should be addressed to Director, JREDA.

## **6.0 Scope of Work**

- 6.1 The scope of work shall be as indicated in the Bid Details.
- 6.2 JREDA reserve absolute rights to distribute the total number of Solar Power Plants (SPPs) required to be supplied under the NIB amongst any number of bidders, in the way it deems fit.
- 6.3 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.
- 6.4 The Bidder shall carefully check the specification and shall satisfy himself regarding the technical requirement and completeness of the equipment/system.
- 6.5 Bidder may submit their offer for minimum lot size defined or additional quantities.

## **7.0 Price**

- 7.1 The Bidder shall quote price as per Proforma - 12. 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.
- 7.2 The price should be inclusive of all taxes, duties, levies, etc. as on date.

## **8.0 Terms of Payment**

8.1 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.

#### **9.0 Authority of Person Signing the Documents**

9.1 Authorization letter as per Proforma – 2 with the seal of the company for the person signing the bid document or attending the bid opening meeting should be furnished.

9.2 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.

#### **10.0 No Claim or Compensation for Submission of Tender**

10.1 The bidder whose bid is not accepted shall not be entitled to claim any costs, charges, expenses of and incidental to incurred by him through or in connection with his submission of bid, even though JREDA may elect to withdraw the notice inviting bid.

#### **11.0 Purchase Preference To SSI Units**

11.1 JREDA shall give purchase preference to SSI Units registered with GoJ as per Purchase Policy of Jharkhand 2007.

#### **12.0 Eligibility and Qualification Criteria**

12.1 The bidder shall meet the following requirements :

##### **For General Bidders**

- (i) The bidder should be a reputed Supplier of Solar Photo Voltaic based Systems who manufactures at least one of the major sub systems (namely, PV Module or Storage Battery or Electronics) used in the SPPs.
- (ii) The bidder should have adequate facilities for testing of SPV systems.
- (iii) The bidder shall furnish registration certificate clearly indicating that they are manufacturers of SPV systems including PV Module/Storage Battery/ Electronics as applicable.
- (iv) The bidder shall submit list of testing facilities available with it alongwith photographs of the testing facilities.

- (v) The bidder should have supplied solar photovoltaic systems of the value of at least Rupees Two Crores to any State Nodal Agency during any one of the past three financial years (i.e. 2005-06, 2006-07, and 2007-08) and supplies against such work order should have completed satisfactorily as certified and attested by the State Nodal Agency concerned.
- (vi) The bidder shall submit attested photocopies of purchase orders/contracts from the State Nodal Agencies concerned. Non-submission of above document may result in rejection of bid.
- (vii) The bidder shall submit attested certificate of satisfactory completion from a Gazetted Officer/State Nodal Agencies for which the bidder has done work and mentioned in this bid document. Non-submission of above document may result in rejection of bid.
- (viii) The bidder should submit financial capability certificate from bank/financial institution indicating that the bidder has necessary resources for the execution of the order.
- (ix) The bidder should have minimum average annual turn over of Rs. 2 Crores during the preceding 3 years, that is, 2005-06, 2006-07 and 2007-08. As proof of the above, audited balance sheet countersigned by a Chartered Accountant should be enclosed.

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

- (i) The bidder should be a reputed supplier of Solar Photo Voltaic based Systems and who manufactures at least one of the major sub systems (namely, PV Modules or Storage Battery or Electronics) used in the SPP.
- (ii) The bidder should have adequate facilities for testing of the Solar Photo Voltaic based Systems.
- (iii) The bidder shall furnish registration certificate clearly indicating that they are manufacturers of Solar Photo Voltaic based Systems including PV Module/Storage Battery/Electronics as applicable.
- (iv) Bidder shall also submit list of testing facilities with it alongwith photographs of the testing facilities.
- (v) The bidder must be certified for their compliance with MNRE guidelines (of MNES specifications 2006-07). A copy of the compliance certificate should be enclosed with this bid.

- (vi) The bidder should submit financial capability certificate from bank/financial institution indicating that the bidder has necessary resources for the execution of the order.
- (vii) The bidder should have supplied solar photovoltaic systems of the value of at least Rupees One Crore to any State Nodal Agency during any one of the past three financial years (i.e. 2005-06, 2006-07, and 2007-08) and supplies against such work order should have completed satisfactorily as certified by the State Nodal Agency concerned. (This Clause is not applicable to SSI units registered with both Govt. of Jharkhand and NSIC).
- (viii) The bidder shall submit self attested photocopies of purchase orders/contracts received from the State Nodal Agencies. Non-submission of above document may result in rejection of bid.
- (ix) The bidder shall submit attested photocopy of certificate of satisfactory completion from a Gazetted Officer/State Nodal Agencies for which the bidder has done work and mentioned in this bid document. Non-submission of above document may result in rejection of bid.

### **13.0 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.

### **14.0 Other Terms & Conditions**

- 14.1 For availing any concession in the cost of bid document or earnest money, the SSI Unit bidder shall have to furnish attested copies of valid SSI registration certificate (all pages) issued by the Govt. of Jharkhand and/or from NSIC clearly indicating validity & monetary limit, as applicable.
- 14.2 For availing any concession in the cost of bid document or earnest money, the SSI Unit bidder shall have to furnish a certificate issued on or after 1<sup>st</sup> January 2008 from Department of Industries, Govt. of Jharkhand or NSIC, Regional Office, Jamshedpur, as applicable, that the unit is functional mentioning the installed capacity of the unit to produce solar device per annum and indicating the stock in hand. The annual production capacity certified above shall be considered while placing the order.
- 14.3 Insertion, post-script, addition and alteration shall not be recognized unless confirmed by bidder's signature and stamp.

- 14.4 Incomplete tender or tenders not submitted as per requirement as indicated in the NIB are likely to be rejected.
- 14.5 Bidders shall submit their offer strictly as per terms and conditions of the tender document without any deviation.
- 14.6 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.
- 14.7 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.
- 14.8 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.
- 14.9 If it happens to be holiday on the date of submission/opening of bids then same shall be submitted/opened on next working day at the same time & at the same venue.
- 14.10 JREDA reserves the right to reject part or whole of the bid/order without assigning any reason thereof.
- 14.11 No postal transaction shall be entertained for obtaining bid documents.
- 14.12 Issuance of bid documents shall not construe that the bidders would be automatically considered qualified.
- 14.13 JREDA reserves the right to postpone the date of receipt and opening of the bids or cancel the bid without bearing any liability, whatsoever, consequent upon such decision.
- 14.14 Attestation of various documents enclosed along with the offer must be done by a Gazetted Officer or Notary Public.
- 14.15 Bid documents are not transferable.

# 3. General Terms & Conditions

## 1.0 Scope of Work

- 1.1 The Scope of work for SPPs includes — Designing , manufacturing, shop testing, packing & forwarding, transportation, transit insurance, supply, installation, testing & commissioning including 5 years Comprehensive Maintenance Contract (CMC) of Stand Alone Solar Power Plant complete in all respects along with one set of operational instruction cum maintenance manual (both English and Hindi) for each set and delivery on FOR destination/site (door delivery) basis across the State of Jharkhand including, demonstration of performance and training at all sites located within the State of Jharkhand as per the direction of JREDA. The list of destinations/consignees will be given to the successful bidder by JREDA before the start of dispatch.

## 2.0 Opening and Evaluation of Bids

- 2.1 The Part – I (Technical Bids) and Part – II (Financial Bids) will be opened on the date and time mentioned in the Bid Details in the office of the Director, JREDA at Plot No. 328/B, Road No. 4, Ashok Nagar, Ranchi in the presence of bidders or their authorized representatives who choose to attend the meeting. The representative should produce authorization letter to attend the bid opening meeting in the Proforma - 2. The representative who does not produce such authorization will not be allowed to attend the bid opening meeting.
- 2.2 JREDA, if required, may at its discretion obtain clarifications on offers by requesting clarifications from any or all the bidders at any time prior to Part – 2 (Financial Bid) opening. Such request for clarification and the response shall be in writing.
- 2.3 JREDA shall examine whether the bid is complete in all respects and conform to the stipulated requirement of the technical specifications and tests reports. The bid having material deviation shall be rejected as being non-responsive.
- 2.4 The Part – 2 (Financial Bid) of only those bidders, whose Part – I (Technical Bid) are found acceptable after evaluation, will be opened and evaluated. In case of deviation in the date and time of opening of the Part – 2 (Financial Bid)

from what is given in the Bid Detail, the date & time for opening of the Part – 2 (Financial Bid) will be uploaded in JREDA website. Bidders are requested to visit the website ([www.jreda.com](http://www.jreda.com)) regularly and keep themselves informed.

2.5 The Part – 2 (Financial Bid) will be opened in the office of Director, JREDA at Plot No. 328/B, Road No. 4, Ashok Nagar, Ranchi 834002, in the presence of eligible bidders or their authorized representative. The authorized representative will be allowed to attend the price bid opening on production of authorization letter.

2.6 The prices shall be evaluated for SPPs on the Landed Price (P) (inclusive all taxes, duties, freight, insurance, etc) for SPPs and CMC.

2.7 The bidders shall be ranked L1, L2, L3 ....as per the Landed Price (P). The Purchase Committee of JREDA will have the discretion to divide the quantity to be supplied among any number of technically qualified bidders at L1 rate. The work order will be issued subject to the acceptance of the bidders to supply at L1 rate.

2.8 The rate quoted by the manufacturer located outside the state of Jharkhand will have to include 4% VAT as applicable in Jharkhand.

2.9 JREDA, if required, may at its discretion extend the scheduled date of opening of Part – 2 (Financial Bid).

### **3.0 Award of Contract/Work Order**

3.1 The contract/work order shall be awarded to the bidder whose Part – I (Technical Bid) was acceptable and who is selected by the Purchase Committee of JREDA to undertake the work at L1 rate.

### **4.0 Quantity of Supply**

4.1 The quantity required as given in the Bid Details of Notice Inviting Bid is tentative and is subject to increase or decrease depending upon the actual requirement at the time of placing order and resources available.

4.2 Bidders may submit their offer for minimum lot size and additional quantities as defined in the Bid Details.

4.3 In case any bidder offers less than the minimum lot size their offer will be rejected.

## **5.0 Effective Date of Contract**

5.1 The effective date of commencement of execution of the order by the selected contractor shall be the date of issue of the LOI/LOA/Purchase Order whichever is earlier.

## **6.0 Contract Price**

6.1 The total contract price & rates of SPPs and 5 years CMC in full and complete set including SPV module, control electronics, battery, mechanical components, etc. should be quoted in Proforma -12. The price shall be for the total scope as defined in this document.

6.2 For supply of items in full & good condition at FOR Site/Stores site (door delivery basis) to various consignees across the State of Jharkhand, including transit insurance. Contract Price also includes all charges towards packing & forwarding, inspection, insurance and freight including door delivery charges. Contract Price is also inclusive of excise duty, central sales tax, Jharkhand VAT on the finished items, turnover tax (TOT)/octroi, professional tax, entry tax, etc. as applicable for the supplies.

6.3 The Contract price & unit rates includes and covers the cost of all royalty & fees for all articles & processes, protected by letters, patent or otherwise incorporated in or used in connection with the work, also all royalties, rents and other payments in connection with obtaining all the materials for the work and the supplier shall indemnify and keep indemnified JREDA, which indemnity, the supplier hereby gives against all actions, proceedings, claims, damages, costs and expenses arising from the incorporation in or use of work of any such articles, processes or supplies. All applicable charges for taking statutory clearances, wherever necessary, are included in the contract price.

6.4 During the period of the contract, JREDA may order addition/deletion in quantities which the supplier shall comply. The adjustment in Contract Price shall be made at the same unit rate as per Price Schedule (Proforma – 12).

## **7.0 Terms of Payment**



7.1 Subject to any deductions which JREDA may be authorised to make under the terms of the order, the Contract Price shall be payable as given below :

(a) 80% of the Contract Price for each village shall be paid against delivery of goods in full and in good condition, installation, testing & commissioning and random verification by JREDA representative after submission of following documents :

1. Format for guarantee card to be supplied with each SPP as specified in Proforma – 7.
2. Format for certificate of delivery of SPP received by the consignee as part of the compliance by the Supplier as specified in Proforma – 8.
3. Letter from the consignee that the required number of guarantee cards have been issued by the Supplier as specified in Proforma – 9.
4. Location-wise detail of the module, battery & charge controller utilization report of SPPs installed under the SPV Program as specified in Proforma – 10.
5. Location-wise detail of the trainings organized as specified in Proforma – 11.
6. Commercial invoice of the supply made in triplicate.
7. Copy of receipted delivery challan/transportation challan/lorry receipt.

(b) 10% of the Contract Price for each consignee shall be paid on completion of third party verification at site. After JREDA gets the third party verification done, the Supplier will be asked to submit the following documents :

1. Copy of the commercial invoice of the supply made in triplicate

(c) 2% of the Contract Price shall be paid on completion of every one year period of the 5 year CMC period, after submission of following documents:

1. Copy of the commercial invoice in triplicate.
2. This payment will be made to the Supplier on the basis of the Monitoring & Evaluation Report of the CMC to be undertaken by an authorized agency of JREDA.
3. If the Supplier does not undertake proper and regular maintenance work as per the CMC, and JREDA is not able to get the repair and maintenance work of the SPPs through any other agency it deems fit,

JREDA would be authorized to deduct proportionate amount from the 2% amount payable to the Supplier for the year.

4. If even after 1 month of the submission of the quarterly Monitoring & Evaluation Report of the CMC, the Supplier does not undertake proper and regular maintenance work as per the CMC, and JREDA gets the repair and maintenance work of the SPPs through any other agency it deems fit, the bill amount of the agency undertaking the repair and maintenance work multiplied by 2 will be deducted from the 2% amount payable to the Supplier for the year.
5. All payments shall be released by JREDA within 30 days that shall be reckoned from the date of receipt of all the documents in complete as stipulated against each payment. Only submission of delivery challan/ transportation challan/lorry receipt will not be sufficient for the release of payment by JREDA.
6. All payments shall be released by JREDA through account payee cheque issued in favour of the Supplier and payable at Ranchi.
7. All the payments shall be paid in the name of only successful bidder not to anyone else.

## **8.0 Income Tax**

- 8.1 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 paid to the Income Tax authorities on account of the Supplier. JREDA shall provide the Supplier a certificate for such deduction of tax.

## **9.0 Statutory Variations in Taxes and Duties**

- 9.1 The adjustment in the Contract Price towards imposition of new taxes or abrogation of existing taxes due to statutory variation shall be applicable only if the new tax is enacted or existing tax is abrogated within contractual delivery/execution period. For any upward variation due to enactment of new tax or abrogation of existing tax after contractual delivery/execution period, adjustment in the Contract Price shall not apply, although for any downward variation, JREDA shall make necessary adjustment in the rate of the items.
- 9.2 The Supplier shall bear and pay all liabilities in respect of statutory variations in taxes and duties and imposition of new taxes and duties that may be imposed after the contractual delivery/execution dates, as originally stipulated, in case the delivery dates are extended due to reasons attributable to Supplier.

## **10.0 Agreement**

10.1 The Suppliers have to enter into an agreement within two weeks, in the office of the Director, JREDA in prescribed format before commencement of supply/services.

## **11.0 Inspection of the Factory and Tests**

11.1 JREDA reserves the right to inspect the manufacturer's works/factory to ascertain the capability/availability of necessary equipment & infrastructure required for manufacture of the item offered before opening of the Part-II (Financial Bid) of the bidders.

11.2 JREDA shall have access and right to inspect the work or any part thereof at any stage.

11.3 JREDA shall have the right to inspect and test the goods to confirm their conformity to the technical specifications after delivery of goods to consignee.

11.4 Successful bidder shall inform JREDA at least 10 days in advance of schedule dispatch.

## **12.0 Dispatch Instructions**

12.1 All items/equipments shall be subjected to pre-dispatch inspection by JREDA or its authorized representative(s) as per relative standards/provisions approved by JREDA before dispatch of items.

12.2 The equipment shall be dispatched as per the detailed "Dispatch Instructions" which will be required to be followed strictly at the time of dispatch. However, equipment shall be dispatched only after receipt of "Dispatch Clearance" from JREDA after inspection and acceptance of the equipment is over. No consignment shall be dispatched without receipt of dispatch clearance from JREDA.

## **13.0 Road Permit**

13.1 Road permits shall be issued from the bidders Registered Office or Manufacturing Unit (as indicated by the bidder in the bid) to FOR in Jharkhand. Request for road permit from the place other than above will not be entertained.

## **14.0 Transit Insurance**

14.1 Transit Insurance shall be arranged by the Supplier for his total supplies. In case of any damage/loss/pilferage/non-delivery during transit, the Supplier shall lodge the claim and settle the claim with the insurance agency. The Supplier shall also arrange replacement of the damaged, lost/pilfered items expeditiously pending settlement of commercial implications with insurance agency, if any, so as not to hamper the working of the system. The resultant loss if any due to failure of Supplier/Sub-supplier to comply with the above shall be to the account of the Supplier.

**15.0 Training Program, After Sales Service and Availability of Spare Parts**

15.1 The responsibility of organizing training program for SPPs will rest on the successful bidder. The training program will be organized in consultation with JREDA/Consignee. The training program will focus on operation and maintenance of SPPs. Printed leaflet/literature should be made available in Hindi by the Supplier regarding the operation and maintenance of their SPPs.

15.2 The Supplier shall depute authorized Service Engineer within 7 days from the date of the intimation of fault, and establish sufficient inventory of spares in the State in consultation with JREDA to provide satisfactory and uninterrupted services during the guarantee period.

**16.0 Completion Schedule**

16.1 The delivery of goods at FOR destination in full as per the terms and conditions of the contract/order shall be completed within **Six (6) months** from the date of issue of the LOI or LOA whichever is earlier.

**17.0 Guarantee Period**

17.1 The manufacturer/vendor/supplier must provide guarantee which include servicing & replacement guarantee for parts and components (such as battery, electronics, lamps etc) of Solar Power Plants for 5 (five) years. For PV modules, the replacement guarantee is for 10 (ten) years from the date of commissioning the SPPs at site & demonstration of performance to the consignee/JREDA.

17.2 The guarantee card to be supplied with the system must contain the details of the system supplied as given in the Proforma - 7. The manufacturers can also provide additional information about the system and condition of guarantee as necessary.

17.3 Supplier shall without prejudice to any other clauses of the order repair/replace the defective parts and restore the system to satisfactory working/performance within 7 days of intimation of fault without any additional cost to JREDA within the period of guarantee.

**18.0 Assignment/Sub Letting/Pre Bidding Tie Up**

18.1 The Supplier shall not assign or sub let, manufacture/assembly, shop testing, packing & forwarding, transportation, transit insurance, supply, in whole or part, its obligations to any third party to perform under the order/contract.

18.2 In the event the Supplier contravenes this condition, JREDA reserves the right to reject the equipment/work sub-contracted and procure the same from elsewhere at Supplier's risk and cost. The Supplier shall be solely liable for any loss or damage which JREDA may sustain in consequence or arising out of such replacing of the contract work.

18.3 In case, the installation & commissioning and CMC is planned to be carried out in collaboration with other party, the bidder has to sign MoU with the party on a Non-judicial stamp paper of value not less than Rs. 100/- and submit a copy of the MoU along with the bid. The MoU shall clearly indicate division of scope of work between the prime bidder and his sub-vendor. However, the total responsibility of work will remain with the prime bidder.

**19.0 Liquidated Damages for Delay in Completion**

19.1 The completion period for the assignment has been worked out and all resource & work planning is to be done accordingly with flexibility for adjustments.

19.2 If the Supplier fails in the due performance of the contract to deliver and commission any part of the equipment or complete the work within the scheduled date for any reason other than due to Force Majeure conditions or any extension thereof granted to him by JREDA, he shall be liable to pay to JREDA as pre-agreed liquidated damages but not by way of penalty on account of delayed successful commissioning, a sum equal to ½% of total contract value per week of such delay, or part thereof, subject to maximum of 5% of the Total Contract Value.

19.3 The liquidated damages for delayed completion shall be recovered from the Supplier's Bill/Bank Guarantee deposited as earnest money.

19.4 Deductions/payment of liquidated damages shall in no way relieve the Supplier from his contractual responsibility to complete the works.

## **20.0 Cancellation of Order**

20.1 JREDA will be at liberty to terminate in part or full the awarded contract without prejudicing its rights and affecting the obligations of the Contractor by giving seven (7) days notice in writing in the following events :

(a) If the Manufacturer is found defaulter for delayed supply or failure to deliver satisfactory performance or supply of substandard materials pursuant to NIB conditions.

(b) If the Supplier/Vendor fails to comply with the provision (s) of the contract including the responsibilities to fulfill the 5 years comprehensive maintenance contract as per the provisions mentioned in this bid document.

(c) If the Supplier/Vendor is involved in any action of moral turpitude.

## **21.0 Arbitration**

21.1 All disputes or differences, whatsoever, arising between the parties out of or in relation to the construction, meaning and operation or effect of this contract or breach thereof shall be settled amicably.

21.2 If, however, the parties are not able to resolve them amicably, the same shall be settled by arbitration in accordance with the Rules of Arbitration of the Indian Council of Arbitration and Conciliation & Arbitration Act 1996 and the award in pursuance thereof shall be binding on the parties.

21.3 The venue of arbitration proceeding shall be within Jurisdiction of Court of Law at Ranchi only.

21.4 Work under this contract shall be continued by the Supplier during the arbitration proceedings, unless otherwise directed in writing by JREDA or

unless matter is such that the work cannot possibly be continued until the decision of the Arbitrator is obtained.

## **22.0 Force Majeure**

- 22.1 Should at any time during the continuance of the contract the performance in whole or in part of any obligations by either party under this contract be held up by reasons of any war, hostility, acts of foreign enemy, civil commotion, sabotage, fires, floods, earthquakes, explosions, epidemics, cyclones, quarantine restrictions, Governmental regulations, law & order and other proclamation etc. (hereinafter referred to as "Events") then, provided notice of the happening of any such eventuality is given by either party to the other within 10 days from the date of occurrence thereof neither party shall, by reasons of such eventuality, be entitled to terminate this contract, nor shall either party have any claim for damages against the other in respect of such non-performance or delay in performance, and the work under this contract shall be resumed as soon as practicable after such eventuality has come to an end or ceased to exist.
- 22.2 Should one or both the parties be prevented from fulfilling their contractual obligations by a state of force majeure, lasting continuously for a period of at least four (4) weeks, the two parties should consult each other regarding the further implementation of the contract with the provision that if no mutually satisfactory arrangement is arrived at within a period of 2 weeks from the expiry of 4 weeks referred to above, the contract shall be deemed to have expired at the end of the aforesaid 2 months. Such expiry of the contract will not relieve the parties from the obligations to reach agreement regarding winding up and financial settlement of the contract.
- 22.3 The above mentioned force majeure events shall not include constraints, which could prudently be foreseen like shortage of power, non-availability of raw materials, difficulties in making transport arrangement, break down of machines, strikes, lock outs, etc.
- 22.4 The above-mentioned force majeure conditions/clause shall also apply in the works of sub-contractors/suppliers of the contractor.
- 22.5 However, the Supplier shall not be liable for liquidated damages or termination/ cancellation of order/contract if and to the extent that its delay in performance or other failure to perform its obligations under the contract is the result of an event of force majeure.





# 4. Technical Specification

## A. Solar Stand Alone Power Plants

### 1.0 Definition

1.1 A Solar Stand Alone Power Plant shall supply electricity from Grid and Solar Panels (renewable source). Energy storage in the form of a battery bank provides a buffer and control flexibility to allow optimum use of the renewable energy source without jeopardizing the robustness and quality of power delivered to the customer. The way in which this is achieved is described below.

1.2 The system controller monitors and measures how much energy is being produced by the solar array, it has the ability to turn the PV array off, if required. The controllability of the PV is provided to ensure that in the event of large availability of solar power (highly unlikely in this system) and very low system loads, it will be possible to reduce the output from the PV array in small increments. The stored energy shall be utilized to operate the load after its conversion to single phase 230 V AC by the inverter as and when required.

1.3 Energy storage system shall consist of a bi-directional inverter that can charge or discharge a battery bank. Battery bank shall run the system for about 4 hours at a specified load. The system can cover for the sudden loss of PV in the system. The battery bank also allows excess solar energy to be stored and used later on when required. In effect the battery bank provides system flexibility and supply robustness.

### 2.0 Photo Voltaic Array

2.1 The SPV array shall consist of crystalline silicon PV module connected in suitable series parallel configuration. The nominal input DC voltage shall be 96 volts for 5 KWP & 4.8 KWP and 48 volts for 2.5 KWP SPV power plants. The SPV modules shall be mounted on galvanized MS structures grouted over concrete pedestals on the ground. The structures will be designed to withstand wind velocity of upto 150 KMPH.

### 3.0 Solar PV Module (Electrical Features)

7.1 Solar PV module array shall consist of high efficiency Solar Modules utilizing mono & multi Crystalline Silicon Solar PV Cells. Power output guarantee offered for the SPV module shall not be less than 10 years. Individual Solar Module Power Rating @ 16.4V under STC shall not be less than 74 Wp. Each Solar PV Module offered shall meet following the minimum requirement.

- Fill Factor, FF : > 70%
- Efficiency of cell,  $E_{f,c}$  > 14%
- Efficiency of Module,  $E_{f,m}$  > 12.5%

7.2 Solar PV Module shall conform to MNES specifications and should be certified by ETDC/CPRI/ERTC or equivalent laboratories. Documentary evidence towards certification shall be submitted with bid. Minimum following parameters should be provided in the bid documents :

- Nominal Power,  $P_{max}$
- Warranted Minimum Power at 16.4V
- Nominal Open Circuit Voltage,  $V_{oc}$
- Nominal Short Circuit Current,  $I_{sc}$
- Nominal Voltage at Max Power,  $V_{mp}$
- Nominal Current at Max Power,  $I_{mp}$ : 4.45A
- Fill Factor, FF
- Efficiency of cell,  $E_{f,c}$
- Efficiency of Module,  $E_{f,m}$
- The tolerance in the electrical parameters

#### **4.0 Solar PV Module (Mechanical Features)**

8.1 Solar Module design will conform to following Mechanical requirements :

- Toughened,
- low iron content,
- high transmissivity from glass.
- Anodized Aluminum Frame.
- Ethyl Vinyl Acetate (EVA) encapsulating.
- Tedlar/Polyester trilaminate back surface.

- ABS plastic terminal box for the module output termination with gasket to prevent water & moisture.
- Resistant to water, abrasion hail impact, humidity & other environment factors for the worst situation at site.
- By-Pass diode.

**9.0 Data sheet for the Solar PV Module shall be furnished duly filled as follows :**

1. PV module Manufacturer name & country
2. PV Module type
3. No. of PV cells per Module
4. Mounting arrangement for solar module
5. Solar module frame material
6. Module dimension
7. Cable gland at module Junction Box
8. Weather resistant HDPE/equivalent junction Box - IP55
9. Max. Temperature rise of cells under severe working conditions over Max. Ambient Temp.
10. Nominal voltage
11. Operating voltage of solar module (nom)
12. Peak power voltage (Vmp)
13. Peak Power current (Imp)
14. Open circuit voltage (Voc)
15. Short circuit current (Isc)
16. Weight of each module
17. Standard/Approvals from National/International
18. Agencies

**10.0 Module Mounting Structure**

- 10.1 The structure shall be MS-hot dipped galvanized and designed to allow easy replacement of any module and shall be in line with site requirement. 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. The array structure shall have tilt arrangement to adjust the plane of the solar array for optimum tilt.

- 10.2 The array structure shall be so designed that it will occupy minimum space without sacrificing the output from SPV panels & shall withstand heavy winds. The supplier/ manufacture shall specify installation details of the PV modules and the support structure with appropriate diagram and drawings. Support structure design and foundation or fixing mounting arrangement should withstand minimum horizontal wind speed of 200 km/hr (Designed value shall be greater than 200 km/hr).
- 10.3 The leg of the structure made with MS-hot dipped galvanized angles shall be fixed and grouted in the PCC foundation columns made with cement concrete. While making foundation design, due consideration shall be given to weight of module assembly, maximum wind speed 200 Km/hr

#### **11.0 Junction Boxes**

- 11.1 The junction boxes shall be dust, vermin and waterproof and made of FRP/ABS Plastic with IP65 protection. 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 marking shall be provided on the bus bar for easy identification and cable ferrules shall be fitted at the cable termination points for identification.
- 11.2 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 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.
  - Metal oxide varistors shall be provided inside the Array Junction Boxes.

#### **12.0 Batteries**

- 12.1 The Battery bank is to be designed to provide the backup power for powering the critical loads. Battery bank should be approved by DOT, RDSO or Defence. The batteries shall be solar photo voltaic batteries of flooded

electrolyte type, low maintenance lead acid and made of hard rubber/PP container. The batteries shall use 2V cells and battery capacity is to be designed at C10 rate with end cell cut off voltage 1.80 V/Cell. Battery terminal shall be provided with covers. Batteries shall be provided with micro porous vent plug with floats. Charging instructions shall be provided.

12.2 A suitable battery rack with inter connections & end connectors shall be provided to suitably house the batteries in the Bank. The features and dimension of the battery rack shall be provided along with the bid document. The batteries shall be suitable for recharging by means of solar modules via incremental/open circuit regulators. The self discharge of batteries shall be less than 3% per month at 27 degree centegrade. The charge efficiency shall be more than 90% up to 70% state of charge. The topping up frequency shall be > 6months. Offered batteries shall comply with the following:

- 20% DOD: 5200cycles
- 30% DOD: 3500 cycles
- 50% DOD: 2100 cycles
- 80% DOD: 1250 cycles

### **13.0 Power Conditioning Unit (PCU)**

13.1 The PCU is combination of Solar Charger (MPPT), Inverter and AC charger all housed in a single unit. Maximum power point tracker (MPPT) shall be integrated into PCU to maximize energy drawn from the solar array. MPPT shall be microprocessor/micro controller based to minimize power losses and maximize energy utilization. The efficiency of MPPT shall not be less than 90% and shall be designed to meet the solar PV Array capacity. Battery charge/discharge operation must be done to achieve highest cycle life of the battery bank, being installed. The charge control algorithm must guarantee 100% state of charge without overcharging/discharging.

13.2 Power conditioning unit will comply with the following requirement :

- Output voltage: 240V+/-2 % 50 Hz, 1 Ph.
- Overload capacity: 125% for 4 min, 150% for 60 sec
- Output wave shape: Sine wave with <3% total harmonic distortion (THD)

13.3 Inverter is the main component of the system and does the function of inverting DC to AC. Inverter output is directly fed to the loads through AC Distribution Board. The Inverter used is bi-directional type and can charge the battery bank from AC mains as and when it is required. Inverter shall be of very high quality having high efficiency and shall be capable of running in isolated mode. The Inverter should be completely compatible with the charge controller and distribution panel.

13.4 The Inverter shall have high conversion efficiency from 25% load to the full rated load. The efficiency of the Inverter shall be more than 90% at full load and more than 80% at partial load (50%-75%) Inverter shall have provision for input and output isolation. Each solid state electronic device shall have to be protected to ensure long life of the inverter as well as smooth functioning of the inverter.

#### 14.0 Cables and Accessories

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

#### 15.0 Earthing and Protection

15.1 The array structure of the PV yard shall be grounded properly using adequate number of earthing kits. All metal casings/shielding of the plant shall be thoroughly grounded to ensure safety of the power plant

#### 16.0 System Components for SPV Power Packs for 4 hours Operation

BOM for (100%Solar)						
SI.	Autonomy 2.5 to 2.8 days		Uo M	2.5k Wp	4.8k Wp	5 kWp
	Description of Material			QTY	QTY	QTY
1	a	Solar module- <b>80Wp</b>	EA	32	-	64
	b	Solar module- <b>75Wp</b>	EA	-	64	-
2		8 Module Mounting Structure	EA	4	8	8
3		Array Junction Box (4 in 1 out)	EA	2	2	2
4		Main Junction Box (2 in 1 out)	EA	1	1	1
5	a	PCU (48V DC, 3 kVA, 230V AC,1 Phase)	EA	1	-	-
	b	PCU (96V DC, 5 kVA, 230V AC,1 Phase)	EA	-	1	1
6		Battery 2V, 400Ah Lead Acid @ C10,	EA	24	48	48

7		Battery bank accessories	set	1	1	1
8		Interconnecting cables	set	1	1	1
	a	1C X 2.5 Sqmm. Cu Cable PVC (Module to AJB)	M	120	240	240
	b	2C X 6 Sqmm. Cu Cable PVC (AJB to MJB)	M	20	30	30
	c	1C X 16 Sqmm Cu Cable PVC(MJB to PCU)	M	30	30	30
	d	1C X 25 Sqmm. Cu Cable PVC (PCU to Batt. Bank)	M	30	30	30
	e	2C X 4 Sqmm Cu Cable PVC (PCU to Load)	M	6	6	6
	f	1C X 25 Sqmm. Cu Cable PVC (Batt. Inter connection)	M	20	40	40
9		Lightning Arrestor	EA	1	1	1
10		Super Earthing kit	EA	3	3	3
11		ACDB & DCDB	EA	1	1	1
12		Battery Protection Panel	EA	1	1	1
13		Solar Distillation Plant	EA	1	1	1

## 17.0 Technical Specifications of 3KVA PCU

<b>INPUT</b>	
Array Input	40V to 88V D
<b>CHARGE CONTROLLER</b>	
Type	MPPT
<b>BATTERY</b>	
Battery Voltage	48V
<b>INVERTER</b>	
Type	Bi Directional
<b>OUTPUT</b>	
Power Capacity	3kW
Load Power Factor	0.8 lag to Unity
Nominal Voltage	230 V AC, Single Phase
Regulation	+/- 2 %
Frequency	50Hz.(±0.5Hz) in stand alone mode
Waveform	True Sinewave
Total Harmonic Distortion	< 3% Max. for Linear Load
<b>Inverter</b>	MOSFET Based, PWM with instantaneous sine wave control of micro processor.
<b>Duty</b>	Continuous
<b>EFFICIENCY (At full load &amp; nominal input voltage)</b>	
Inverter Efficiency (DC to AC)	> 90%
<b>OPERATING MODES</b>	
1. Stand alone 2. Grid interactive 3. Offline	
<b>INVERTER/CHARGER PROTECTION</b>	
a. Inverter Over Voltage	
b. Inverter Over Load	
c. Inverter Short Circuit/Current Limit	
d. Inverter Over Temperature	
e. Mains Over Voltage & Under Voltage	
f. Temperature Controlled Cooling Fan	

<b>BATTERY PROTECTION</b>	
a. Battery Under Voltage	
b. Battery Over Voltage	
<b>ENVIRONMENTAL</b>	
Acoustic Noise Level	< 55db @ 1.5 Mtr.
Ambient Temperature	-5 to +55 Deg C
Storage Temperature	-25 to +55 Deg C
Humidity	Upto 95% RH, Non Condensing
Altitude	< 1000 Mtrs. Above Sea Level (without derating )
<b>USER INTERFACE</b>	
LCD	4 X 20 with Backlight
<b>DATA COMMUNICATION TO pc</b>	
Port	RS 232 DB9 (# Remote Access/Data Logging – optional)
<b>PHYSICAL</b>	
Enclosure Protection Grade	MS with Power Coated (IP – 20)

## 18.0 Technical Specifications of 5 KVA PCU

<b>INPUT</b>	
Array Input	80V to 176V D
<b>CHARGE CONTROLLER</b>	
Type	MPPT
<b>BATTERY</b>	
Battery Voltage	96V
<b>INVERTER</b>	
Type	Bi Directional
<b>OUTPUT</b>	
Power Capacity	5kW
Load Power Factor	0.8 lag to Unity
Nominal Voltage	240 V AC, Single Phase
Regulation	+/- 2 %
Frequency	50Hz.(±0.5Hz) in stand alone mode
Waveform	True Sinewave
Total Harmonic Distortion	< 3% Max. for Linear Load
<b>Inverter</b>	MOSFET Based, PWM with instantaneous sine wave control of micro processor.
<b>Duty</b>	Continuous
<b>EFFICIENCY (At full load &amp; nominal input voltage)</b>	
Inverter Efficiency (DC to AC)	> 90%
<b>OPERATING MODES</b>	
<ol style="list-style-type: none"> <li>1. Stand alone</li> <li>2. Grid interactive</li> <li>3. Offline</li> </ol>	
<b>INVERTER/CHARGER PROTECTION</b>	
a. Inverter Over Voltage	
b. Inverter Over Load	
c. Inverter Short Circuit/Current Limit	
d. Inverter Over Temperature	
e. Mains Over Voltage & Under Voltage	
f. Temperature Controlled Cooling Fan	



<b>BATTERY PROTECTION</b>	
a. Battery Under Voltage	
b. Battery Over Voltage	
<b>ENVIRONMENTAL</b>	
Acoustic Noise Level	< 55db @ 1.5 Mtr.
Ambient Temperature	-5 to +55 Deg C
Storage Temperature	-25 to +55 Deg C
Humidity	Upto 95% RH, Non Condensing
Altitude	< 1000 Mtrs. Above Sea Level (without derating )
<b>USER INTERFACE</b>	
LCD	4 X 20 with Backlight
<b>DATA COMMUNICATION TO pc</b>	
Port	RS 232 DB9 (# Remote Access/Data Logging – optional)
<b>PHYSICAL</b>	
Enclosure Protection Grade	MS with Power Coated IP – 20

## 19.0 Technical Specifications of Battery

<b>SPECIFICATION</b>	
<b>CAPACITY AT 10 HOUR RATE(AH)</b>	400
<b>DISCHARGE CAP. AT DIFFERENT DOD @27DEG.C</b>	
<b>120 HR.</b>	600
<b>20 HR..</b>	500
<b>5 HR.</b>	332
<b>SPECIFICATION REFERENCE -IS 13369-1992</b>	GENERALLY CONFIRMS FOR LEAD ACID SINGLE CELLS WITH TUBULAR POSITIVE PLATES AND PASTED NEGATIVE PLATES AT 1.240SP.GR.TO 1.80VPC
<b>OVERALL DIM.IN MM (TOL. 5MM)LXWXH</b>	315X185X460
<b>POSITIVE PLATE CONSTRUCTION</b>	TUBULAR
<b>NEGATIVE PLATE CONSTRUCTION</b>	PASTED FLAT
<b>GRID ALLOY( SPEC. 1654-1978)</b>	LOW ANTIMONY LEAD ALLOY
<b>SEPERATOR TYPE (SPECS.IS 6071-1981)</b>	RIBBED TYPE MICROPOROUS PVC
<b>TEMP. CORRECTION FOR SP.GR.AT 27 DEG.C</b>	SG27=SGt+0.0007(t-27)
<b>SP.GR. FOR INITIAL FILLING</b>	1.250+/-0.005
<b>SPECIFICATION</b>	
<b>AH EFFICIENCY (&gt;=)</b>	95%
<b>WH-EFFICIENCY(&gt;=)</b>	85%
<b>NO. OF CYCLES AT DIFFERENT DOD</b>	
<b>20%</b>	5200
<b>30%</b>	3500
<b>50%</b>	2100
<b>80%</b>	1500

<b>SELF DISCHARGE RATE/MONTH AT 27 DEG.C(&lt;=)</b>	2%
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## 20.0 Structures

<b>Structures</b>	
Type	Tie- type
Location	Roof Mounting
Material	MS Structure
Surface finish	Hot Dip Galvanized
Tilt facility	15° to 30°
Hardware	All hardware required for fixing the structure and solar module shall be provided
Foundation	PCC foundation Blocks

## 21.0 Junction Box

<b>Junction Box</b>	
Type & Quantity	1. Array junction Box Assembly-as required 2. Main junction box Assembly-as required
Construction	Dust, water & vermin proof
Material	FRP
Earthing Provision	Provided
Hardware	Provided as Required
Marking	Labels are provided to identify cables
Mounting	Structure mounting

## 22.0 Warranty

- 12.1 The PV module will be warranted for a minimum period of 10 years from the date of supply and the Solar Power Plant (including the battery) will be warranted for a period of 5 years from the date of supply. The warranty card to be supplied with the system must contain the detail of the system supplied as given in the Proforma – 7. The manufacturers can also provide additional information about the system and condition of warranty as necessary.

## **5. Five Years Comprehensive Maintenance Contract (CMC)**

### **1.0 The Comprehensive Maintenance Contract (CMC)**

1.1 The Comprehensive Maintenance Contract shall include servicing & replacement guarantee for parts and components (such as battery, electronics, CFL, luminaries, etc) of Solar Power Plants for 5 years from the date of installation. For PV modules, the replacement guarantee is for 10 years.

1.2 The maintenance service provided shall ensure proper functioning of the SPV system as a whole. All preventive/routine maintenance and breakdown/corrective maintenance required for ensuring maximum uptime shall have to be provided by the Supplier. Accordingly, the Comprehensive Maintenance Contract (CMC) shall have two distinct components as described below.

### **2.0 Preventive/Routine Maintenance**

4.0 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, 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 SPV system as a whole.

### **5.0 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. If more than 10 days are taken after registering of complaint, then supplier has to pay Rs. 500/- for each system for each month till the problem is rectified. This money shall be deposited to the account of beneficiary.

3.2 For carrying out the CMC effectively, the Bidder/Supplier shall establish a Service Center for every 10 Solar PV Systems, deployed within a specified geographical area.

3.3 The bidder shall maintain the following facilities at the local Service Centre for ensuring highest level of services to the end user :

1. Adequately trained manpower, specifically trained by the bidder for carrying out the service activities.
2. Adequate provisions for record keeping, which shall inter-alia, include the following :
  - (a) Details of system supplied within the command area of the service station including full name and address of end user, system and sub-system serial numbers and records of routine maintenance carried out (duly signed by the end user). These records shall include voltage, current, specific gravity, indicator charge, CFL full glow, charge controller operation, electronics, etc.
  - (b) History record sheets of maintenance done.
3. Adequate spares for ensuring least down time of an individual system.
4. The Service Center shall send summary service reports to State Nodal Agency on half yearly basis. These reports shall include the following information :
  - (a) Number of systems covered by the Service Center
  - (b) Number of systems working satisfactorily on the reporting date
  - (c) Number of complaints received during the period of reporting
  - (d) Number of complaints attend during the period of reporting
  - (e) Major cause of failure, as observed
  - (f) Major replacement made during the reporting period

Separate report shall be submitted for each type of systems manufacture wise in case the service center caters to the requirement of more than one manufacture.

3.4 The records maintained at the Service Center shall be available for scrutiny of authorized representatives of the concerned State Nodal Agencies or MNRE.

3.5 The bidder shall ensure adequate insurance of SPV systems against robbery, theft, burglary and acts of God such as natural calamities, flood, etc.

- 3.6 The date of CMC maintenance period shall begin on the date of actual commissioning of the SPV systems.
- 3.7 Bidder shall furnish details of infrastructure that are presently available for establishing of Service Centers.
- 3.8 The quality/level of service provided by the bidder would form the basis for determining eligibility of the bidder to participate in the subsequent programs of JREDA.

## 6. Proforma – 1

<b>Forwarding Letter</b>
--------------------------

NIB No. : JREDA/SPV (SPP)/2008-09/02  
03.03.2009

Date :

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

**Sub : Offer In Response to Notice Inviting Bid No. JREDA/SPV (SPP)/2008-09/02 for Manufacturing/Assembling, Supply, Installation, Testing & Commissioning Including 5 Years Comprehensive Maintenance Contract (CMC) of SPPs Under Solar Photo Voltaic Program**

Sir,

With reference to the above we are submitting this offer after having fully read and understood the nature of the work and having carefully noted all the specifications, terms & conditions laid down in the bid document. This offer is hereby submitted in two different envelopes sealed inside a third envelope duly marked and sealed as indicated below :

Part – I (Technical Proposal) : Submitted in original plus one copy (1+1)

Part – II (Financial Proposal) : Submitted in one original copy only (1+0)

We also confirm that :

1. We are an Indian company/firm.
2. The components of SPV systems shall be indigenously manufactured.
3. We have never been debarred from executing similar type of work by any Central/ State/Public Sector Undertaking/Department/Nodal Agency.

4. The Bid Document is purchased from JREDA office/downloaded from JREDA website (strike whichever is not applicable) and necessary document in support is enclosed.
5. We shall execute the offer/work order as per specifications, terms & conditions of the Bid Documents on award of work.
6. Our offer shall remain valid for placement of purchase orders up to 180 days from the due date of submission of offer.
7. If at any time, any of the declarations submitted by us is found to be false, our offer or order is liable to rejection.

Yours faithfully,

(Signature of Authorized Signatory)

Name :

Designation :

Company Seal :

# 7. Proforma – 2

**Authority Letter for Signing Bid Document & Attending Bid Opening**

**Meeting**

NIB No. : JREDA/SPV (SPPs)/2008-09/02  
03.03.2009

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 Bid Document & Attending Bid Opening Meeting**

I hereby authorize  
..... (Name &  
Designation) to sign the Bid 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)

(Signature of Authorized Signatory)

Name : .....

Name : .....

Designation : .....

Designation : .....

Company Seal :

Yours faithfully,



(Signature of Authorized Signatory)

Name :

Designation :

Note :

1. To be submitted by bidders on official letter head of the company.
2. Authorization can be for more than one persons

## 8. Proforma – 3

<b>Information about the Bidding Firm</b>
---

NIB No. : JREDA/SPV (SPPs)/2008-09/02  
03.03.2009

Date :

Sl.	Particulars	
1.	Name of the Bidder	
2.	Address of Bidder	
3.	Telephone No.	
4.	Fax No.	
5.	E-mail Address	
6.	GPS Co-ordinate of Registered Office	
7.	GPS Co-ordinate of Factory Campus	
8.	Name & Designation of Authorized Signatory for Correspondence	
9.	Nature of Firm (Proprietorship/Partnership /Pvt. Ltd./Public Ltd. Co./Public Sector)	
10.	Permanent Account Number (PAN)/TIN	
11.	Firm's Registration Number	
12.	EPF Registration No. (if applicable)	

13.	Sales Tax/Value Added Tax Registration Number			
14.	Specify the Item Originally Manufactured			
15.	Year of Starting of Manufacturing/Assembling of PV Component(s)			
16.	International Certification Awarded (if any)			
17.	Installed Capacity for Solar Products/Components			
18.	Production and Sale of Solar Components in the Last Three Years (in thousand units)		<b>Production</b>	<b>Sales</b>
		2005-06		
		2006-07		
		2007-08		
19.	Total Production and Sale of PV Products During the Last Three Years (in Rupees)	2005-06	<b>Production</b>	<b>Sales</b>
		2006-07		
		2007-08		
20.	Name of Material and Model Type Offered			
21.	Name of Manufacturer of SPPs with Full Address			
	1.	SPV SPPs		
	2.	PV Module		
	3.	Control Electronics/Charge Controller		
	4.	Battery		

22.	Particulars of Earnest Money	
23.	Quantity Quoted for this Bid	
	1.	2.5 KW Plant
	2.	4.8 KW Plant
	3.	5.0 KW Plant
24.	Whether manufacturer is permanently registered as an SSI Unit of Jharkhand and/or with NSIC Unit for SPV system	
25.	Place where Materials will be Manufactured	
26.	Place where Materials will be Available for Inspection	
27.	Whether the Bidder has submitted details with regard to supplies made to important organizations.	
28.	Details of any existing service network in Jharkhand (Name & address of service centre, year of opening)	
29.	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).

## 9. Proforma – 4

<b>Details of Orders Received and Executed in Past 3 Years</b>
--

NIB No. : JREDA/SPV (SPPs)/2008-09/02

Date : 03.03.2009

Details of Orders Received & Executed by the Manufacturer/Supplier for Supply of SPPs to different Govt. Organization/JREDA/ Other Nodal Agencies/Important Organization & Institutions during Last Three Years.

Sl.	Name of Agency/ Organization	Purchase Order No., Date & Ordered Qty.	Name of Model	Delivery Schedule	Qty. Supplied Within Delivery Schedule	Qty. Supplied After Delivery Schedule	Date of Full Supply

Yours faithfully,

(Signature of Authorized Signatory)

Name :

Designation :

Company seal :

Note:

- (a) Attach Photocopies of Purchase Orders
- (b) Attach Photocopies of Certificate of Satisfactory Performance Issued by Concerned Agency/Organization
- (c) 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

# 10. Proforma – 5

<b>No Deviation Certificate</b>
---------------------------------

NIB No. : JREDA/SPV (SPPs)/2008-09/02

Date : 03.03.2009

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

Dear Sir,

We understand that any deviation/exception in any form from our bid against the above mentioned reference number may result in rejection of our bid. We, therefore, certify that we have not taken any exceptions/deviations anywhere in the bid and we agree that if any deviation is mentioned or noticed, our bid may be rejected.

Yours faithfully,

(Signature of Authorized Signatory)

Name :

Designation :

Company seal :

Note : This “No Deviation Certificate” should be written on the letter head of the bidder indicating BID No. duly signed and stamped with date by a person competent and having the power of attorney to bind the bidder.

# 11. Proforma – 6

<b>Format for Submitting Bank Guarantee in Lieu of Earnest Money</b>
--

NIB No. : JREDA/SPV (SPPs)/2008-09/02

Date : 03.03.2009

(To be submitted in Rs. 50/- Non-Judicial Stamp Paper to be purchased in the name of the issuing bank)

To,

The Director

Jharkhand Renewable Energy Development Agency (JREDA)

Plot No. 328/B, Road No. 4, Ashok Nagar,

Ranchi – 834002.

WHEREAS ..... (Supplier's name)  
(hereinafter referred to as "Supplier"), 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 Supplier as per "Notice Inviting Bid, point no. 9 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 Supplier.

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 Supplier/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 Supplier/Tenderer for the work

under "Notice Inviting Bid Ref. No. : JREDA/SPV (SPPs)/2008-09/02 dated 03.03.2009".

2. Your decision as to whether the Supplier/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 Supplier/Tenderer for the work under "Notice Inviting Bid Ref. No. : JREDA/SPV (SPPs)/2008-09/02 dated 03.03.2009" 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 Supplier/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 .....

.....



## 12. Proforma – 7

<b>Format for Guarantee Card to be Supplied with Each SPP</b>
---

NIB No. : JREDA/SPV (SPPs)/2008-09/02

Date : 03.03.2009

(To be supplied by bidders on the official letter head of the company/firm)

### Guarantee Card

1.	Name & Address of the Manufacturer/ Supplier of the System	
2.	Name & Address of the Purchasing Agency	
3.	Date of Supply of the System	
4.	Details of PV Module(s) Supplied in the System	
	(a) Name of the Manufacturer	
	(b) Make	
	(c) Model	
	(d) Serial No.	
	(e) Wattage of the PV Module(s) under STC	
	(f) Guarantee Valid Up To	
5.	Details of Battery	
	(a) Name of the Manufacturer	
	(b) Make	
	(c) Model	
	(d) Batch/Serial No(s).	
	(e) Month & Year of Manufacture	
	(f) Rated V & AH Capacity at C/20 or C/10 Rated at 27 <sup>o</sup> C	
	(g) Guarantee Valid Up To	
6.	Details of Electronics & Other BOS Items	
	(a) Name of the Manufacturer	
	(b) Make	
	(c) Model	
	(d) Serial No(s).	
	(e) Month & Year of Manufacture	
	(f) Guarantee Valid Up To	

7.	Designation & Address of the Person to be Contacted for Claiming Guarantee Obligations	
----	--	--

(Signature of Authorized Signatory)

Name :

Designation :

Company seal :

**Filling Instructions:**

1. The SPPs components will be generally guaranteed as per point 17 of General Terms & Conditions. The manufacturer can also provide additional information about the system and conditions of Guarantee as necessary. The Guarantee card to be supplied with the system must contain the details of the system supplied as per format given above.
2. During the Guarantee period JREDA/users reserve the right to cross check the performance of the systems for their minimum performance levels specified in the MNRES specifications.

## 13. Proforma – 8

**Format for Certificate of Delivery of the SPP Received by the  
Consignee as Proof of Compliance by the Supplier**

NIB No. : JREDA/SPV (SPPs)/2008-09/02

Date : 03.03.2009

### प्रमाण प्रत्र

Consignee/प्राप्तकर्ता का नाम : .....पदनाम : .....

विभाग का नाम : .....

विभाग का पता : .....

प्रमाणित किया जाता है कि सोलर फोटो वोलटेइक कार्यक्रम के अंतर्गत अपारम्परिक ऊर्जा स्रोत मंत्रालय, भारत सरकार एवं जेडा द्वारा अनुदान के तहत ..... KWp का stand alone solar power plant लगाया गया।

इस सोलर उपस्करा की आपूर्ति मेसर्स ..... द्वारा की गई है।

Consignee/प्राप्तकर्ता का हस्ताक्षर नाम : .....

Consignee/प्राप्तकर्ता का नाम : .....

दिनांक : .....

## 14. Proforma – 9

**Format for Letter from the Consignee that the Required Number of  
Guarantee Cards Have Been Issued by the Supplier**

NIB No. : JREDA/SPV (SPPs)/2008-09/02

Date : 03.03.2009

### प्रमाण पत्र

Consignee/प्राप्तकर्ता का नाम : .....पदनाम : .....

विभाग का नाम : .....

विभाग का पता : .....

प्रमाणित किया जाता है कि सोलर फोटो वोलटेइक कार्यक्रम के अंतर्गत अपारम्परिक ऊर्जा स्रोत मंत्रालय, भारत सरकार एवं जेडा द्वारा अनुदान के तहत ..... KWp का stand alone solar power plant के लिए गारंटी कार्ड प्राप्त किया।

इन सोलर उपकरणों की आपूर्ति मेसर्स ..... द्वारा की गई है।

Consignee/प्राप्तकर्ता का हस्ताक्षर नाम : .....

Consignee/प्राप्तकर्ता का नाम : .....

दिनांक : .....

# 15. Proforma – 10

**Format for Location-wise Detail of the Module, Battery & Charge Controller Utilization Report  
of SPPs Installed Under Solar Photo Voltaic Program (SPV)**

NIB No. : JREDA/SPV (SPPs)/2008-09/02

Date : 03.03.2009

Name of Manufacturer/Supplier : .....

Name of Consignee : .....

Address of Consignee : .....

**(A) Stand Alone Solar Power Plants**

Sl.	Name of Beneficiary	Department Name	Module			Battery			Charge Controller			Date of Installation	Altitude	Latitude	Longitude
			Number	Make	Year of Manufac ture	Number	Make	Year of Manufa cture	Number	Make	Year of Manufa cture				

# 16. Proforma – 11

<b>Format for Location-wise Details of the Trainings Organized</b>
--

BID No. : JREDA/SPV (SPPs)/2008-09/02

Date : 03.03.2009

Name of Supplier : ..... Date of Training: .....

District : ..... Block : .....

.....

Sl.	Name of the Participant	Designation	Name of Department	Signature or Thumb Print of the Participant

Note : Digital photograph of each training program certified by district administration must be enclosed with this proforma.

# 17. Proforma – 12

## Format for Submitting the Price Schedule

BID No. : JREDA/SPV (SPPs)/2008-09/02

Date : 03.03.2009

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

### Price Schedule

Sl.	Item	Total Bid Quantity	Price in Rupees	
			Unit Price	Total Price
1	2	3	4	5 = 3 x 4
A	Supply of Stand Alone Solar Power Plants (SPPs) as per the Bid Document including CMC			

- Note:**
- 1 Above quoted price for SPP are complete in all respect as per Technical Specifications inclusive of all Central/State/Local taxes & duties, packing, forwarding, transit insurance, loading & unloading, transportation & other charges etc. FOR destination at any site in Jharkhand and inclusive of installation, testing, commissioning, performance testing and training.
  - 2 Certified that rates quoted for SPPs are as per specifications, terms & conditions mentioned in the bid document.

Yours faithfully,

(Signature of Authorized Signatory)

Name :

Designation :

Company seal :

## 18. Check List & Format for Submission of Bid

Sl.	Details	Reference Page No.
1.	Demand Draft for cost of bid document/Photocopy of Demand Draft or money receipt if bid document is purchased from JREDA Office	
2.	Bank guarantee for earnest money in Proforma - 6	
3.	Bidders seeking concession/exemption from submission of earnest money, will have to submit an attested photocopy of relevant SSI unit certificate issued from the Govt of Jharkhand and from NSIC (if applicable)	
4.	Attested photocopy of registration certificate issued by Govt of Jharkhand or NSIC should clearly indicate the validity period. The photocopy of registration certificate should be attested by Gazetted Officer or Notary Public	
5.	Proforma – 1 (Forwarding Letter)	
6.	Proforma – 2 (Authority Letter for Signing Bid Document & Attending Bid Opening Meeting)	
7.	Proforma – 3 (Information about the Bidding Firm)	
8.	Proforma – 4 (Details of Orders Received and Executed in Past 3 Years)	
9.	Proforma – 5 (No Deviation Certificate)	
10.	Letter of acceptance to furnish the information in Proforma – 7, Proforma – 8, Proforma – 9, Proforma – 10 and Proforma – 11, (1 hard copy and 1 soft copy in CD) if the bidder is declared successful bidder and is given LOI/LOA by JREDA.	
11.	List of testing facilities available. Test certificate of SPPs issued by Solar Energy Centre/MNRE approved testing centres for the test performed on or after 1 <sup>st</sup> April 2007 as per MNRE, Govt. of India specifications.	
12.	Self attested photocopies of purchase orders/contracts received from the State Nodal Agencies. The bidder should have supplied solar photovoltaic systems of the value of at least Rupees Two Crores (Rupees One Crore in case of SSI Units) to any State Nodal Agency during past three financial years (i.e. 2005-06, 2006-07, and 2007-08).	
13.	Satisfactory completion of work certificate from the State Nodal Agencies for which the bidder has done work and mentioned in this bid document.	
14.	General bidders should have supplied, installed and commissioned minimum 10 nos. SPPs which should have worked satisfactorily for a minimum period of 1 year as on the date of submission of bid	
15.	Proof of annual turnover for past 3 years for SPV systems including details of manufacturing capacity/facility alongwith testing facilities and list of items/products manufactured in house and bought-out items.	
16.	Certified/Attested copies of Sales Tax/VAT Clearance Certificate for 2006–07/2007-08 and Sales Tax/VAT Registration Certificate	
17.	Attested Photo-copy of Proprietor's affidavit/Partnership Deed in case of Proprietor firm/partnership firm with the photograph & details of Proprietor/partners.	
18.	Photographs of MD or Two Directors (in case of Ltd. Company.)	
19.	Copy of MoU signed for Pre-bid tie-up	
20.	Financial capability/Solvency Certificate from bank/Financial Institution (indicating BG Limit, Cash Credit Limit, Overdraft limit & Cheque Purchase Limits)	
21.	Technical Particular data sheet of SPPs of Bidder	
22.	PF Registration Certificate & PF Registration No./Affidavit for non-applicability of PF rules	



23.	Copy of audited Balance Sheet and Profit & Loss Account for last 3 (three) years	
24.	Photographs of Registered Office & Factory attested by Gazetted Officer or Notary Public.	
25.	A tentative overall supply schedule in the form of Bar Chart	

Please Ensure :

1. Please ensure 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.
4. 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.

\* \* \* \* \*