

| Important dates | |
|---------------------------------|------------------|
| Last date of sale | 24.9.2013 |
| Last date of submission of bids | 25.9.2013 |

TENDER DOCUMENT

FOR

DESIGN, SUPPLY, INSTALLTION, TESTING,

COMMISSIONING AND MAINTENANCE

OF

SOLAR STEAM COOKING SYSTEM OF 6 DISHES

AT

GOVT (SSD) HIGH SCHOOL, TAPOVAN,

KHANDAGIRI, BHUBANESWAR, ODISHA

ODISHA RENEWABLE ENERGY DEVELOPMENT AGENCY
S-59, MANCHESWAR INDUSTRIAL ESTATE BHUBANES

Technical bid Document

Supply, installation, commissioning and maintenance of Solar steam cooking system for 500 students

1. PROJECT BACK GROUND

Odisha Renewable Energy Development Agency (OREDA) is the state level nodal Agency under Science & Technology, Dept, Govt. of Odisha to implement renewable energy programme/scheme in the state.

OREDA have decided to set up solar steam cooking system for 500 students in Govt (SSD), High School, Topovan, Khandagiri, Bhubaneswar in state of Odisha with the financial support of ST & SC Development Dept, Govt. of Odisha and MNRE GOI. For this job OREDA is to select suitable firm for installation, commissioning and maintenance of the above system.

2. TENDER NOTICE

This tender is invited from the eligible solar steam cooking system manufacturer in the country to take up the above work.

2.1 The agencies/ bidders are advised to study the Tender document carefully. Submission of Tender shall be deemed to have been done after careful study and examination of the Tender document with full understanding of its implications.

2.2 Interested bidders may download the Tender document from the website www.oredaorissa.com and submit the bid along with a demand draft of **Rs 6300** /-(**Rupees six thousand three hundred**) only including 5% VAT drawn in favour of Chief Executive, Odisha Renewable Energy Development Agency payable at Bhubaneswar towards cost of bid documents or obtain the same from the office of Chief Executive, Odisha Renewable Energy Development Agency (OREDA, Dept. of Science & Technology, Govt. of Odisha, S-59, Mancheswar Industrial Estate , Bhubaneswar-751010, Odisha, Tel:-0674-2588260/ 2586398 Fax-2586368 on payment of non refundable tender document fee of the above amount. The payment will be accepted in the form of crossed demand draft drawn on any scheduled bank, payable in Bhubaneswar in favour of “Odisha Renewable Energy Development Agency”.

2.3 This Tender document is not transferable. OREDA Advt. No. **-2871-Date 5.9.2013**

3. INSTRUCTION TO BIDDERS:

1. Rates quoted should be firm and fixed. No price variation and escalation will be allowed.
2. Terms and conditions, technical specifications and price bid may be returned duly signed by the bidder on each page in token of acceptance.
3. Rates will be valid up to six months from the date of opening of tender.
4. Deviation in terms and conditions, Specification of material, Inspection clause etc. will not be accepted
5. Earnest money amounting to Rs 25,000/- shall be deposited in shape of Demand Draft in favour of the Chief Executive, OREDA payable at Bhubaneswar . Tenders without deposit of E.M.D will not be accepted. In case of E.M.D Exemption, a copy of such notification issued by Govt should be enclosed.
6. Intending bidders are required to carefully go through the tender specification before submitting their offer.
7. Tenders must be submitted in English language only.

8. Incomplete, telegraphic or conditional tenders are not accepted.
9. Tenders received late due to postal delay or otherwise will not be considered.
10. The bidders are required to furnish their offers in the price bid in both words & figures, so that in case of any confusion, the offer given in words would be accepted as final.
11. The materials are urgently required. Timely delivery of materials against purchase order is of paramount importance. Therefore, offer with ex-stock delivery will be preferred.
12. Canvassing in any manner is strictly prohibited. The same will lead to rejection of the tender.
13. Certificate to the effect that the systems to be supplied are indigenous & not fully imported must be furnished.
14. The test certificate of various components of the proposed Solar Steam cooking system should be in accordance with guideline of MNRE for off grid solar thermal system under JNNSM and related addendums/ minutes of the meeting published on MNRE website. Test certificates from MNRE approved test centers shall be considered valid.
15. The firm should have experience of manufacturing, supply and maintenance /after sales services in the field Solar Steam Cooking system of similar or above capacity in last three years. Details information must be submitted in the proforma as per Annexure-V with relevant documents in support of previous experience in supply.
16. Proof in support of having authorized representative / service center in Odisha should be enclosed.
17. Original documents of the tender along with the prescribed price bid should be signed, sealed & submitted by the Bidder(s), otherwise tender is liable for rejection.
18. In case of any correction made by the bidder in the rates offered, it should be signed & sealed by the bidders; otherwise tenders are liable for rejection.
19. Power of attorney to sign the agreement on behalf of bidder & partnership deed articles should be enclosed along with original tender documents.
20. Notice inviting tender, tender documents, prescribed Technical bid, price bid, terms & conditions will form the part of tender.
21. All pages of the tenders must be signed by the authorized person on behalf of the bidder.
22. The last date of receipt of the tender is 25.9.2013 **up to 3.30 P.M.** Sealed tenders will only be accepted during office hours on working days through deposit in the tender box kept for the purpose with Division- I in the office of the Chief Executive, OREDA, Bhubaneswar. Tenders received after due date & time will not be considered.
23. In case of tenders downloaded from the website, the tender documents submitted along with the demand draft for the cost of the tenders in favour of Chief Executive, OREDA drawn in any nationalized bank payable at Bhubaneswar shall only be accepted.
If due to any reason the due date is declared as a holiday the tender will be opened on next working day at the same time.
24. The technical bid shall be opened on 25.9.2013 **at 4.00 PM** in the OREDA office, Bhubaneswar in presence of such Bidders /their representatives, who may be present at the time of opening.
25. The tender should be submitted in two separate sealed envelopes as mentioned below & addressed to the Chief Executive, OREDA, S-59, Mancheswar Industrial Estate, Bhubaneswar -10, inside a sealed envelope super scribed with " The tender for supply, installation, commissioning and maintenance of **Solar Steam Cooking**

system for 500 students against Tender Call Notice No 2871 /OREDA Dated-5.9.2013.

26. (i) First sealed envelope should contain Technical Bid as per Annexure – A, prescribed test certificate, EMD amounting to Rs 25,000/- Technical Specification, valid STCC/ VAT clearance certificate Commercial terms & conditions, tender document duly signed & stamped in all pages, Indignity Certificate, Proof in support of supply as well as brochure, literature etc. It should be super scribed with “PART-1 Technical Bid “.All the papers of tender documents except the price bid duly signed should be submitted in the first envelope.
- (ii) Second sealed envelope (part-II) should contain Price bids for Solar steam cooking system for 500 students as per Annexure –A. It should be superscribed with "PART- II PRICE BID".** Any condition in regard to financial aspects, payments, terms of rebate etc beyond the prescribed financial terms of OREDA will make the tender invalid. Therefore it is in the interest of the bidder not to write anything extra in the Price Bid in Annexure-B except price.
27. The procedure of opening of the tender shall be as under
- a) First envelope "PART-1 TECHNICAL BID” shall be opened at the time & date mentioned in the tender notice by OREDA representative in the presence of bidders, who choose to be present.
- b) Second envelope (part-II) containing Price bid shall be opened after evaluation of technical suitability of the offer. If required, the date for opening of second envelope (Price bid) shall be communicated later on. Second envelope of only those Bidders shall be opened whose Technical bid shall be found Techno-commercially suitable. If necessary, the firms may be called for Technical Presentation of their product as per the time intimated by OREDA.
- 28.. The successful bidder will be decided by the purchase committee based on the price quoted in Annexure-I and other credentials of the firm. The successful bidder should agree to the price finalized by the committee on each component of the annexure-II to complete the project.
29. No price escalation on account of any statutory increases in or fresh imposition of custom duty, excise duty, sales tax or duty livable in respect of the major components in the said acceptance of the tender shall be applicable.
30. The bidders quoting abnormally low/high price may be rejected from consideration during financial bids analysis.
31. In case of supply of any defective material or substandard material, the materials will be rejected & it will be the responsibility of the supplier for taking back & replacing the rejected materials at their own cost.
32. The supplied materials should be strictly as per specifications mentioned in the tender; otherwise the material would be liable for rejection.
33. In case of any doubt, regarding specification, the bidders may contact Dy Director (Tech) Div-I , OREDA .
34. The tender with validity of less than six months shall not be considered. The validity can be further extended with mutual consent.
35. Any or all tenders may be rejected or accepted partially or fully without assigning any reason thereof by Chief Executive, OREDA, Bhubaneswar.

4. SCOPE OF WORK

Odisha Renewable Energy Development Agency (OREDA) proposes to set up solar steam cooking system.

Scope of work includes: -

1. Design, supply, installation, testing & commissioning and maintenance of Solar steam cooking system in Tapovan High School , Khandagiri, Bhubaneswar with 96 sq meter collectors area of six dishes (16 sq meter each). Suitable for cooking of meals for 500 students.
2. Design, supply, installation, testing & commissioning and maintenance of all related equipments such as cooking utensil, all steel structure, instrumentation for the system mentioned at SI no-1 .
3. Design, supply, installation, testing & commissioning and maintenance of suitable tracking system as per the site requirement.
4. Design, supply, installation, testing & commissioning and maintenance of all supporting structures for reflector, steam header, upper and lower stand, steam and feed water pipe lines and pressure reducing valve section, feed water tank, suitable tracking system , winch, ladder etc made of mild steel with anti corrosive paints coating and suitable size of round bars, channels , angles , round pipe , square pipes and aluminum channels. All MS structures shall be assembled with good quality of nut and bolts. Ladder of M S structures of suitable height with walking path shall be provided adjacent to standing row of reflectors for cleaning & maintenance of valves, pressure gauges, cleaning of reflectors/mirrors etc. It must be rigid enough to resist any deformation due to wind pressures or manual handling.
5. All related civil works/welding works including leveling and grouting required for installation mentioned at SI no-1 to 4.
6. The supplier shall after completion and commissioning of the work submit details of the same in the format.
7. Comprehensive Maintenance Contract (CMC) of the complete system for five years. The date of commencement of the CMC shall be reckoned from the date of commissioning of the solar steam cooking system
8. The materials to be supplied should be as per the specification with at least five years warrantee period on the system commissioned by the firm.
9. The system is to be installed on the roof top of the dinning and kitchen room.
10. The firm should inspect the school and quote accordingly.

5. ELIGIBILITY CRITERIA FOR THE MANUFACTURERS OF THE SOLAR THERMAL SYSTEMS FOR PARTICIPATION.

1. The firm should be solar steam generating/ cooking system manufacturer/ supplier.
2. Must have valid test certificate from approved test centres of MNRE.
3. The firm must have average turnover of Rs 30.lakhs in last three financial years. This should be certificated by the Chartered Accountant.
4. The firm must have installed and commission Solar Steam Cooking system of similar or above capacity in anywhere in India.

6. SIGNING OF AGREEMENT/ MOU

Finally selected firm or their authorised representative will submit the signed and sealed copy of the purchase / work order in each page on behalf of the firm as token of acceptance along with required security deposit to execute the work as per the terms and condition laid down in the said order.

Annexure - I

SCHEDULED OF EVENTS

Important dates on tender

| | | |
|------------------------------|---|--------------------------|
| Last date of Sale of Tender: | - | 24.9. 2013 up to 5 PM |
| Submission of Tender: | - | 25.9. 2013 up to 3.30 PM |
| Opening of Technical bid | - | 25.9. 2013 at 4.00 PM |
| Opening of Price bid | :- To be announced to short-listed bidders) | |

Address for submission of Tender

Chief Executive,
Odisha Renewable Energy Development Agency,
S-59 Mancheswar Industrial Estate, Bhubaneswar.
Pin -751 010.

Bidders are requested to watch out OREDA web site for change of events/additional information from time to time.

CHECK-LIST (All the following documents should be enclosed in technical bid)

Please check whether following documents have been enclosed in the bid

- 1) Tender Paper Cost (DD No.: ----- Amt: Rs. -----/-, (Bank. name:, Date:)) (Yes/No)
- 2) Tender paper cost in shape of cash Rs -----/- MR No- date- (Yes/No)
- 3) Cost of EMD DD No.: ----- Amt: Rs. -----/-, (Bank. name:, Date:)) (Yes/No)
- 4) Evidence of registered Firm /Company (Yes/No)
- 5) Evidence of operation of the company in India for last 3 years (Yes/No)
- 6) Recent test certificate from appropriate authorized test centers of MNRE, GOI.
- 7) Copy of Service tax registration certificate /service tax return /copy of STCC/VAT clearance certificate/Copy of PAN (Yes/No)
- 8) Copy of audited balance sheet for the year 2010-11, 2011-12 and 2012-13, signed by CA.
- 9) Proof of professionals with qualification and experience in installation of Solar steam cooking system. (Yes/No)
- 10) Proof of successful installation and commissioning of Solar steam cooking system /Copies of work completion order with details of work execution. (Yes/No)**
- 11) Declaration of ineligibility for corrupt and fraudulent practices (Yes/No)
- 12) Acceptance of terms & conditions contained in the Tender (Yes/No)
- 13) Representatives authorization letter both for tender opening and technical presentation (along with Proof of above two persons as employee of the company to be enclosed) (Yes/No)

Signature of Authorized Signatory

(To be typed on the Letterhead paper of the Applicant, including full postal address, Telephone and FAX numbers and e-mail address)

To,

The Chief Executive

Odisha Renewable Energy Development Agency (OREDA)

**Dept. of Science and Technology, Govt. of Orissa, S-59 Mancheswar Industrial Estate
Bhubaneswar 751 010. (Orissa)**

Tel:-0674-2588260/2586398., Fax-2586368.

Subject: Tender (Tender) for selection of firm for installation, commissioning and maintenance of Solar steam cooking System vide tender call notice no 2871-/OREDA dated-5.9.2013.

Dear Sir,

Having examined the Tender (Tender) we, the undersigned, offer to propose for award of work for installation, commissioning and maintenance of Solar steam cooking System for 500 student vide tender call notice no-----/OREDA dated- -----.2013 in full conformity with the said Tender.

We have read the provisions of the Tender and confirm that these are acceptable to us. We further declare that additional conditions, variations, deviations, if any, found in our Tender offer shall not be given effect to.

We agree to abide by this Tender, consisting of this letter, the detailed response to the Tender and all attachments, for a period of one year from the date fixed for submission of Tender as stipulated in the Tender

This application is made with the full understanding that:

- (a) Bids by qualified firm will be subject to verification of all information submitted for qualification and bidding;
- (b) OREDA reserves the right to reject or accept any application, cancels the qualification process, and rejects all applications and OREDA shall not be liable for any such actions.

Any genuine changes made by OREDA in the interest of the work with respect to the technical requirement during the course of project implementation will be acceptable.

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

Information Detail

1 Name of bidder

- 2 Address of bidder
- 3 Name, Designation and Address of the contact person to whom all correspondences shall be made regarding this Tender.
- 4 Telephone no. of contact person
- 5 Mobile no. of contact person
- 6 Fax no. of contact person
7. E-mail address of contact person

We hereby declare that our Tender is made in good faith and the information contained is true and correct to the best of our knowledge and belief.

<Signature of Authorized Signatory>
<Name>
<Designation>
<Contact Address>
<Telephone Numbers (Mobile & Land)>
Firm/Company Seal

Annexure-IV

(Representative AUTHORIZATION Letter in the Letterhead of the applicant)

Date : _____

Ref : _____

To,

**Chief Executive
Odisha Renewable Energy Development Agency (OREDA)
Dept. of Science and Technology, Govt. of Orissa
Mancheswar Industrial Estate Bhubaneswar-751010, Orissa
Tel:-0674-2588260/2586398 Fax No 2586368.**

Ms. /Mr. _____ is hereby authorized to sign relevant documents on behalf of the company/firm in dealing with invitation reference No. ----- She/ He is also authorized to attend meetings and submit technical and commercial information as may be required by OREDA in the course of processing above said application. Ms. /Mr. _____ is hereby authorized to make technical presentation on behalf of the company.

(Proof of above two persons as employee of the company to be enclosed)

Thanking you,

Authorized Signatory

Representative Signature

Signature attested

PROFILES OF PROJECTS COMPLETED

1. Name of client
2. Name of the Project
3. Brief Description of the Project
4. Scope of the Project (Activities Involved)
5. Details of Solution and Methodology Adopted
6. No. of Locations at which Project is being/was implemented
8. Value of the project (INR)
9. Date of award of contract
10. Date of commencement of the project
11. Date of successful completion of the project
12. If not completed, expected date of completion
13. Name of the person who can be referred to from Clients' side, with Name, Designation, Postal address, Contact phone, FAX number, e-mail id etc.
Attach Additional Sheets and Annexure, if required.

Details of experience

| Sl. no | Details of work order & date (Attach copy of work order/completion/commissioning report) |
|---------------|---|
| | |

**Authorized Signatory
(Company Seal)**

Annexure-VI

BRIEF VENDOR PROFILE

- 01 Name of the Firm/Company
- 02 Year Established
- 03 Address of Office
- 04 Telephone No.
- 05 Fax No.
- 06 E-mail Address
- 07 Website
- 08 Sectors' in which the company/firm has successfully commission Solar steam cooking system against the work order of Govt./ PSU/ Agencies in India
- 09 No. of full time personnel currently under employment
- 10 No. of years of Proven experience of providing similar Services
- 11 Certifications (ISO 9001:2000, if any)

**Authorized Signatory
(Company Seal)**

DECLARATION

Date: _____
Ref: _____

To,

**Chief Executive
Odisha Renewable Energy Development Agency (OREDA)
S-59 Mancheswar Industrial Estate Bhubaneswar 751 010.
Dept. of Science and Technology, Govt. of Orissa,**

Ref: Declaration Letter for firms for installation, commissioning and maintenance of solar steam cooking System

Dear Sir,

This is to notify you that our Firm / Company intend to submit a proposal in response to your Tender Reference No: ----- In accordance with the above we would like to declare that:

- a) We are not involved in any litigation that may have an impact of affecting or compromising the delivery of services as required under this assignment

- b) We are not blacklisted by any Central / State Government / Public Sector Undertaking in India.

Sincerely,

[BIDDER'S NAME

Name

Title

Signature

Date

Company Seal

UNDERTAKING

I

.....

Son / Daughter

.....

Resident of

.....

Being Proprietor/ Partner/ authorized representative of

M/S

.....

of whose State Sales Tax Registration No VAT and TIN . is

.....

CST Registration No. is

.....

and Income Tax P.A No. is

.....

Hereby give consent to OREDA to deduct from our Bill whatever dues of the ST & IT Department on their demand.

Place:

Date:

SIGNATURE:

NAME:

SEAL:

COMMERCIAL TERMS & CONDITIONS

1. RATE: -

The offer should indicate the unit cost, taxes & duties separately. The unit cost must be inclusive of packing, forwarding, loading & unloading charges, cost of insurance, transportation for delivery at destination and training to users, technical personnel and field functionaries of OREDA.

2. SALES TAX & DUTIES ETC.:

All taxes and duties as prescribed both under central and state Government sales tax rules would be applicable.

3. EARNEST MONEY DEPOSIT:

3.1 Earnest money amounting to Rs 25,000/- shall be deposited along with the tender without which the same shall not be accepted.

3.2 Request for adjustment of Earnest money Deposit against any previous dues with OREDA will not be considered.

3.3 E.M.D will be refunded to the unsuccessful bidders after finalization of the tender without any interest.

3.4 The Earnest Money Deposit will be returned to the successful bidders after furnishing Security Deposit for performance and acceptance of the purchase order. The EMD can also be adjusted against Security Deposit on request by the successful bidder

3.5 Within 15 (fifteen) days of issue of the letter-accepting bid, the successful bidders shall furnish security deposit for the amount prescribed in this document for performance along with the letter of acceptance. If the bidders fail to furnish the required security deposit along with acceptance letter, within the stipulated time, his E. M. D shall be forfeited and the bidder may be disqualified for participating in further tenders.

3.7 The validity of Earnest Money, shall have to be suitably extended if necessary on request by OREDA, without which the tender shall be rejected.

4. SECURITY DEPOSIT/ PERFORMANCE GUARANTEE FEES:

The successful bidder shall deposit Security amount/ performance guarantee fees @10% of the ordered value with the Chief Executive, OREDA, Bhubaneswar-10 either in shape of cash or demand draft or in shape of bank guarantee (BG). The EMD deposited with the tender can be adjusted towards the above amount payable. The said deposit would be forfeited if supplies are not made as per terms and conditions of the purchase order. The security deposit amount will be refunded without any interest after expiry of the warrantee period and CMC period, subject to satisfactory execution/ performance of the system.

5. DELIVERY:

The materials must be delivered and commissioned within **three** months from the date of issue of the purchase order.

6. QUANTITY:

The quantity mentioned in the tender might either increase or decrease according to our requirement. The order shall be placed to the approved bidder in phased manner. .

7. VALIDITY OF OFFER:

The offer must be kept valid for a period of six months from the date of opening of the tender. No escalation clause would be accepted. The validity can be further extended with mutual consent.

8. STCC:

The Bidders must submit attested copy of valid up to date Sales Tax / VAT clearance certificate along with the tender. The tender would not be considered without this document. The original certificate would be produced at the time of opening of the tender, or, before placement of purchase order, if required.

9. WARRANTY:

The supplier should provide warrantee on complete solar cooking system on any manufacturing/design/ installation defects for a minimum period of 5 years.

11. LIQUIDATED DAMAGES:

The systems are to be supplied within the scheduled time. For delay in supply of materials beyond the scheduled date the buyer shall without prejudice to its other remedies deduct from the order value as liquidated damage @ 0. 5% of the delayed consignment, per week of delay or part thereof up to maximum 10% of order value. Once the maximum is reached (i.e. 20 weeks of delay) the purchase order would be cancelled and the security deposit would be forfeited.

12. FORCE MAJEURE:

The supplier shall not be charged with Liquidated damages nor shall his security for performance be forfeited when failure of supplier in making delivery is due to any event beyond his control and could not have been foreseen, prevented, avoided by a prudent person.

These include, but are not restricted to, acts of God, acts of public enemy, acts of government, fires, floods, epidemics, strikes, freights, embargoes and unusually severe weather.

13. SPECIFICATION:

The detailed technical specifications of the Solar steam cooking system is enclosed in the tender.

14. INSPECTION:

All tests and inspections shall be made at the place of delivery unless otherwise specifically agreed upon by the bidder and OREDA at the time of purchase if necessary.

15. PAYMENT:

i) 75 % of the system cost (excluding CMC charge) and 100% taxes on system supplied shall be released on supply of the system to the consignee at R E Cell, DRDAs and verification thereof. The Bills and Challans in triplicate must be submitted along with the following documents for release of payments

(a) Valid VAT / Sales tax clearance certificates and ITCC

(b) Guarantee / Warrantee certificate as stipulated in this specification.

(ii) Balance 25% cost of all the system supplied will be released after conducting training; opening after-sales-service centers in the State and submission of joint commissioning and handing over certificate in Annexure-IX and copy of the signed CMC by supplier (Format enclosed)

CMC charges will be paid at the approved rate on successful maintenance of the system for each complete year from the date of commissioning of solar steam cooking system as stipulated in the CMC.

16. TRAINING PROGRAMME:

The bidder as per the discretion of OREDA should conduct one Training programme of users, technical personnel & field functionaries of OREDA at site. The bidder should provide user's guide, technicians' diagnostic guide and O & M instruction manual in English and Oriya

17. DISPUTE:

For adjudication of any dispute between OREDA and the bidders arising in this case, reference can be made to any Law courts under the jurisdiction of Orissa High Courts only.

The Chief Executive, OREDA reserves the right to accept or reject any or all tenders without assigning any reason thereof.

**Chief Executive
OREDA**

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

SIGNATURE OF TENDERER WITH SEAL

TECHNICAL SPECIFICATIONS OF VARIOUS COMPONENTS OF SOLAR STEAM COOKING SYSTEM

The solar steam generating system will comprise of automatically tracked parabolic concentrators and balance of system (BOS) for conditioning and utilizing thermal energy in working fluid. BOS may consist of solar thermal receivers, steam/ hot water/oil pipelines, feed water/oil pumps, tank assemblies, steel structures and civil works, instrumentation like pressure gauges and temperature indicators etc. Besides , cooking vessels may be provided.

1. Parabolic Concentrators:

Each parabolic concentrator of the system will have a reflector frame fitted with solar grade mirror, rotating support and a stand. The concentrator will be installed in such a way that they focus sunlight onto the receiver while in operation which will be attached to steam header / drum / tank. The concentrator will track automatically with the help of suitable tracking arrangement. The stand of the concentrator will be properly grouted. The tracking arrangement will be such that once adjusted in the morning with the help of drive motor, the concentrator will automatically track the sun at least in one direction i.e. E.W. thereby focusing all the sunlight exactly on the receiver connected to the header.

2. System header assembly & instrumentation:

Each system header assembly / connected to a group of concentrators will consist of a steam header / drum / tank connected to receiver (circular in shape), pressure reducing station, steam and feed water pipelines and necessary valves. The design of the receivers may be such that they work on thermo siphon principle and the water stored in the header is slowly converted into steam when the system is put into operation. It should have a drain arrangement for cleaning against scale formation. The pressure reducing station will be so designed that it reduces the pressure of steam generated in the header from 10 kg / cm² to 1-2 kg / cm² so as to ensure safety of the user while using the steam. The system pipelines receivers and steam header will be insulated with glass wool / rock wool covered by aluminum cladding to minimize heat losses. The system will be hydro tested for any leaks before insulating its various components. Feed water tank of suitable capacity, instrumentation e.g. Pressure gauge and water level and temperature indicators, level controller, safety valves steam separators will be installed with the system.

3. Support Structure and civil work:

Necessary steel structure will be provided to support steam header / drum / tank, stands for concentrators, steam and feed water pipelines, pressure reducing valves, feed water tank etc.

Minimum technical specifications of various components of the system will be as per below:-

| Concentrators | |
|--|--|
| Shape & make of each concentrator | Of any shape made of reflecting mirrors) fixed to a supporting frame / structure. |
| Aperture area | 16 Sq.m. minimum (for Scheffler dishes. It will $\pi / 4x$ length of major & minor axis of the ellipse). |
| Reflecting mirrors (i) Material (ii) Reflectivity (iii) Mirror fixing | <p>i) High quality glass mirrors for outdoor use with protective layers of coating on back surface and sides to protect from exterior weathering effect or any other reflecting materials of similar reflectivity and durability. For this coastal region special protection is to be made.</p> <p>ii) 90% minimum with a maximum degradation of 10% over its life span. Warranty / guaranty to be provided for a period of five years. To be replaced immediately by the supplier, if found deteriorating during this period.</p> <p>iii) With positive locking or sticking by industry proven out door-rated adhesives. Due protection of mirror coatings be taken while fixing the mirrors. Trying of mirrors with wires not acceptable.</p> <p>*Reflectors other than glass mirrors will also be acceptable subject to fulfillment of all the above requirement.</p> |
| Concentration ratio (Aperture / Receiver areas) | 80 for single axis tracking .Aperture area will be the surface area of the solar concentrator. The concentrators covering this area will be full of mirrors /reflectors with no major gaps left except some space left for wind passage. |
| Tracking Arrangement | |
| <ul style="list-style-type: none"> Any reliable automatic tracking mechanism with motorized reverse in evening & park at morning position including safe position in case of abnormal operating conditions. Made of standard components to be protected from rain, dust & outside environment. | |

| |
|--|
| <ul style="list-style-type: none"> Tracking accuracy + / -0.5 degree (to be ensured using field-calibrated inclinometer). |
| <p>Heat receivers, headers and piping</p> <ul style="list-style-type: none"> Tested working fluid pressure: 1.5 times of designed pressure. Receivers: Of boiler / standard industry quality to sustain required temperature and pressure. Header / drum material and piping: Designed & manufactured as per IBR / standard industry quality. |
| <p>Insulation</p> <ul style="list-style-type: none"> All working fluid piping to be insulated with minimum thickness of 50mm of PUF or rock wool. Headers or water-steam tank, insulated sides of receiver etc to have minimum insulation of 75 mm. Insulation of receivers should withstand a minimum temperature of 600 c. All insulated components to have Al. sheet or powder coated steel sheet cladding as per industrial practices so as not to allow rain water to sip in the insulation. |
| <p>Frames & Supporting Structure</p> <p>Necessary steel structure will be provided to support steam header / drum / tank, stands for concentrators, steam and feed water pipe lines, pressure reducing valves, feed water tank etc.</p> <ul style="list-style-type: none"> Strong enough to avoid any deformation of the reflector dish during manufacturing / tracking / under wind pressure of 200 km per hour. The support structure should be with epoxy / anti – rust coating. |
| <p>Instrumentation & Controls</p> <p>Complete with all instrumentation such as pressure gauge, temperature indicator fluid level indicators, safety valves, fluid meter etc.</p> <p>Other requirements</p> <p>Systems with scheffler dishes having single axis automatic tracking arrangement will be installed.</p> <p>All parts / components will be of weather resistant design / specifications to withstand natural weathering outdoors under local climatic conditions for a minimum period of 15 years. Warranty for a minimum period of 5 years will be provided by the supplier. Necessary spares will also be provided so that the users do not face any problem at least during the warranty period.</p> <p>The steel structures provided to support various components of the system will be fabricated in such a way that they are able to take load (both wind load and static dead load) of the whole system. In case the terrace where the system is to be installed is not strong enough to bear the loads, these should be transferred into columns and beams and the proposed load arrangement must be discussed with the concerned civil engineering department and their approval obtained.</p> <p>The personnel of the buyer / user institution will be trained by the supplier in the operation and maintenance of the system and its back-up system. The supplier will</p> |

provide details of the system with schematic diagram showing each and every components ,its working procedure, tracking arrangement, technical specification with quantum and size of various components and other high lights. Proper manuals will be prepared and provided to the user. Log book will also be supplied to the and user so that proper documentation is maintained.

The other important features of system will be i) it will have easy access to the user and proper walkway and platforms will be supplied for easy operation and maintenance of the system wherever necessary ii) safety features such as safety valves etc will be incorporated in the system so that system does not explode under pressure and iii) proper instrumentation as mentioned above will be provided so that user could see the status of system and take precautions / corrective steps if the system does not behave as expected.

Cooking Vessels

Two cooking vessels of direct steam injection of 100 liter capacity each and one of indirect heating of 50 liter size and all the three vessels should be SS 304 (food grade) and would be jacketed from outside to avoid any burns or accident.

Direct injection vessel: For cooking dal rice, steaming certain vegetables, pulse

In Direct injection vessel:: For tea, coffee, kheer, etc

GUARANTEED TECHNICAL PARTICULARS

| Sl. No | Item | Description |
|--------|---------------------------------|-------------|
| 1. | Solar Parabolic concentrator | |
| 2. | Solar Steam Receiver and header | |
| 3. | Solar Stream Tank | |
| 4. | Cooking Vessels | |
| 5. | Tracking system | |
| 6 | Supporting structure | |
| 7 | Insulation | |

Signature of the Bidder with seal

Financial Bid –Part-I

| Sl no | Item | Rate |
|-------|---|--|
| 1 | Design, Supply ,Installation and Commissioning of solar steam cooking system including three cooking vessels for 500 students (6X16 sq meter aperture area of scheffler dishes) at Tapovan High School , Khandagiri Bhubaneswar with five year warranty | |
| 2 | Taxes and duties on item -1 | |
| A | Total (item 1 + item-2) | |
| 3 | Transportation, installation and commissioning of solar steam cooking system item no-1. | |
| 4 | Taxes & duties on item -3 | |
| B | Subtotal (item 3+item 4) | |
| 5 | Comprehensive Maintenance Contract (CMC) charges for five years | 1 st year 2 nd year 3 rd year 4 th year 5 th year |
| 6 | Taxes & duties on item -5 | |
| C | Subtotal (item 5+item6) | |
| D | Grand Total (A + B + C) | |

- The bidders are required to follow the details of the technical specification while quoting rates for each item.

Signature of the Bidder with seal

Annexure-IX

Joint Commissioning cum handing over Certificate

This is to certify that M/S ----- have installed ----- 96 m² Solar Steam cooking System at Tapaban High School , Khandagiri , Bhubaneswar of Khurda district and completed the same by----- successfully. Now the system is running satisfactorily.

1. Place of installation : - , Khandagiri
2. Block/Municipality : - Bhubaneswar
3. District: - Khurda
.....

Signature with Seal
M/S -----

Signature with Seal
OIC (Tech)
R E Cell, DRDA,-Khurda

Handed over to

Head Mistress/ authorized representative of Govt (SSD) High School, Tapovan, Khandagiri ,
Bhubaneswar

**COMPREHENSIVE MAINTENANCE CONTRACT (CMC) FOR MAINTENANCE OF
96 M² STEAM COOKING SYSTEM & INSTALLED BY M/S-----**

FOR FIVE YEARS

This Comprehensive Maintenance Contract (CMC) is executed between the Orissa Renewable Energy Development Agency (OREDA), S-59, Mancheswar Industrial Estate, Bhubaneswar-10 represented by its Deputy Director (Tech.), Division -1 hereinafter called as 1st Party and M/S. _____

hereinafter called as 2nd Party, for maintenance of 96 m² Solar Steam Cooking System M/S-----
-----for a period of five years with effect from _____ AD, supplied and installed at
----- of ----- district. Vide Purchase Order No. _____ dt. _____.

The 2nd party will maintain the Solar steam cooking system as per the terms and conditions mentioned hereunder.

1. It has been envisaged in the Purchase Order No. _____/OREDA, dated. _____ Under Clause No. _____ that the Solar Steam Cooking System shall be warranted against any manufacturing defect and bad-workmanship at least for a period of five years from the date of commissioning. The systems have been commissioned and handed over to the 1st party through its Asst Director (Tech), posted at DRDA ----- during _____. The 2nd party is fully responsible for their trouble-free performance of all the components during the warrantee period. .
2. As stipulated in the ---- paragraph of the said Purchase Order under the Clause No.----, the Solar Steam Cooking System and other components are covered under warranty for a period of at least five years from the date of use, it is natural that these are to be covered under Warranty up to _____ AD.
The 2nd party is fully responsible for any defect noticed within the above warranty period and is liable for rectification/replacement of the defective components/systems free of cost.
3. The 2nd party should conduct at least one training programmes for the users/technical personnel and field functionaries of OREDA, on day-to-day repair and maintenance of the system.
4. An amount of 10% of the ordered materials shall be kept as fees towards Performance Guarantee for a period of five years of maintenance.
After expiry of the maintenance period of five years, which remains valid up to _____AD, the security deposit towards PGF shall be returned to the 2nd party thereafter only.
If the maintenance of the Solar cooking system is found to be unsatisfactory by the 2nd party, the 1st party will have the liberty to encash and forfeit the PGF deposited/furnished, in full or part as may be decided by the 1st party.
5. The CMC includes repair/replacement of defective battery ,all spares and consumables,
6. The 2nd party shall undertake Preventive/Routine Maintenance work of the of Solar Steam Cooking System. This shall be done at least once in every month and shall include activities such as cleaning, lubrication of all moving parts and ch

- system, cleaning of collector's surface and any other activity that may be required for proper functioning of the Solar Steam Cooking System as a whole. The 2nd party shall forward report to the 1st party in the prescribed format attached herewith (format-1) on every succeeding six months.
7. Whenever a complaint is lodged by the user, the 2nd party shall attend within 5-days period of time and in any case the breakdown shall be corrected within a period not exceeding 7-days from the date of complaint. The 2nd party shall furnish the status report after the repair works are over which shall invariably bear the signature of the user or his representative.
 8. For carrying out the CMC effectively, the 2nd party shall establish at least one service center deployed within the State. The 2nd party shall maintain the following facilities at the service center for ensuring highest level of services to the end user.
 - (a) Adequate trained manpower specifically trained by the 2nd party for carrying out the service activities.
 - (b) Adequate provisions for record keeping, which shall inter-alia, include the following.
 - (c) Adequate spares for ensuring least down time of a individual component.
 - (d) The service center shall send summary service reports to 1st party on monthly and tri monthly basis. These reports shall include the following information:
 - ❖ Number of complaint received during the period of reporting.
 - ❖ Number of complaints attended during period of reporting.
 - ❖ Major cause of failure, as observed.
 - ❖ Major replacement made during the reporting period.
 - (e) The records maintained at the service center shall be available for scrutiny of authorized representatives of the 1st Party.
 - (f) The date of CMC, maintenance period shall begin on the date of actual commissioning of the Solar Steam Cooking System
 9. Separate bills/Invoices in triplicate are to be submitted by the 2nd party to 1st party for effecting payment towards CMC charge after end of each year from the date of commissioning of the system.
 10. Certificate in support of successful maintenance of the system (s) shall be obtained from the user as explained above, which should be countersigned by the OIC /Assistant Director (Technical), RE Cell, DRDA, Khurda in token of verification of maintenance done.
 11. It will be the liberty of the 1st party to cross check the systems maintained by the 2nd party. Random verification of the maintenance may be carried out by the 1st party wherever necessary.
 12. The 2nd party may continue to maintain the solar steam cooking system after expiry of the maintenance period of five year, provided the beneficiaries/1st party desires.
 13. For adjudication of any dispute between the two parties arising on execution of this CMC, the matter shall first be brought to the notice of Chief Executive/C'

14. In case, there will be no amicable settlement of the issue, the matter can be referred to the Court of Law having jurisdiction at Bhubaneswar only.
The Comprehensive Maintenance Contract is signed jointly between the two parties today i.e. on dated. _____ day of 2013

For and on behalf of Odisha
Renewable Energy Development
Agency (OREDA), BBSR
(1st Party)

For and on behalf of
M/S.
(2nd party)
(Seal)

Dy. Director (Tech.)
Division-I
(Seal)

Witness

Dy. Director (Tech.)
Division-III, OREDA
(Seal)

FORMAT-I
(To be furnished in duplicate by the 2nd party)

STATUS REPORT OF SOLAR STEAM COOKING SYSTEM

(A) PARTICULARS

1. Name of the user :
2. (a) Place of installation :
- (Village)
- (b) Gram Panchayat :
3. Block :
4. District :
5. Date of visit :
6. Name & address of the staff visiting the installation. :

(B) OBSERVATIONS (To be filled-in by the staff visiting the installation)

- (i) Have seen any
7. Visual damage of the system :
8. Damage of the concentrators , steam drum, headers :
- (i) . Sl. No.& make of the damage dishes
- (i) Make & Sl. No. Solar Steam Cooking System
- Condition of the concentrators :-
- :
9. Routine maintenance work :
- (i) Cleaning up the concentrator surface :
- (ii) Leakage Testing :
- (iii) Reading of the temperature
- (iv) Lubrication of all moving parts
- :
18. Type of repair/rectification carried out:
19. Suggestion imparted to the user:
20. Status of the system
21. Remarks of the user:

Signature of the user/representative(with name & stamp if any) with date

Signature of the staff visiting the installations with date -
Signature of the

Asst Director (Tech)/
R E Cell, DRDA,
