
Indian Institute of Technology Jodhpur (IITJ)

Old Residency Road, Ratanada, Jodhpur- 342 011, RAJASTAN, INDIA.

GLOBAL TENDER

IFB Ref: IITJ/CSET/2012-13/1

Date: 18/09/2012

Consultancy for Preparation of Detailed Project Report (DPR) for Setting up Experimental CSP (Solar Thermal) plant at the Indian Institute of Technology, Jodhpur, Rajasthan.

A consortium of research institutes comprising of Indian Institute of Technology Jodhpur (IITJ) (**Employer**); Indian Oil Corporation Limited (IOCL); and Bharat Heavy Electricals Limited (BHEL) **intend to setup a solar thermal/CSP experimental pilot unit in IITJ, Jodhpur, Rajasthan, India.**

The latitude and longitude of KARWAR @ Jodhpur, Rajasthan, India are 26^o.69514; 73^o.2437. Interested Bidders are welcome to make a site visit and get familiar with the site parameters before submitting their proposal.

The above consortium invites all interested Consortia/firms or National/International accredited and registered Research institutes and Consultancy companies having Proven Track Record and adequate past experiences and capabilities of carrying out experimental or consultation work of similar nature; to submit their proposals for preparation of **Detailed Project Report (DPR)** so as to provide consultancy to setup a solar thermal / CSP experimental pilot unit in IITJ, Jodhpur, Rajasthan, India. Further details are available at website: www.iitj.ac.in.

The term `Consultant/s` will mean Universities, Research institutions, government agencies, public & private entities, consulting firms, engineering firms, construction management firms, The above constituent/s may form a consortium in their respective areas of expertise and render the consultancy to prepare, submit a proposal to prepare a DPR, render consultancy for the setting up of the experimental CSP plant till its acceptance from the Employer. The consortium may be led by a Leader (**Bidder**) having done a MOU (Memorandum of Understanding) with all their associates. The **Bidder** is expected to render professional, objective and impartial technical advice (bringing out merits & demerits) for the preparation of DPR as well as for the experimental plant setup. The **Bidder** should be independent and neither controlling/ getting controlled by any CSP Plant manufacturer, supplier, system integrators.

The MOU shall be duly signed by the associate/s, Leader with a Scope & Exclusions matrix (in form of a chart) of each associate and Notarized and submitted with the techno-commercial, Unpriced bid.

The Employer shall only deal with the Leader, while all associates with the Leader as per submitted MOU shall be jointly and severally liable for the assignment/s as awarded.

The Employer has the rights to award or not to award the consultancy for DPR. Please note that Priced Bids are to be in Hard Copies, separately submitted in Secured & Sealed Covers only. The Technical Unpriced & commercial bids(in PDF format) can be sent over email followed by signed hard copies. Technically qualified and shortlisted Bidders are also welcome to attend the Price bid openings at the premise of the Employer for which advanced intimation will be given.

The `Responsive bidder` means who responds to the queries and deliverables sought by the employer within one week of the date of request, unless there are circumstances justified by reasons for the delay, if any .

The Bidder is expected to carry out the assignment with due diligence and in accordance with prevailing standards, ethics of the profession. The Bidder`s (Consultant/s) liability to the Employer shall be governed by applicable law and the jurisdictional court at India shall be the Final authority. The Bidder is also required to submit a ` Non Disclosure` affidavit(in their chosen format) ,duly notarized that any and all of the constituent members of the Bidder will keep the discussions, negotiations of this Bid process **totally confidential** from the date of submission of Bid to the conclusion of the award process.

The Bidder shall clearly mention the Proprietary & Patented content/s (if any) of the CSP process/es and must indemnify the Employer against any Patent infringement and litigations. However the details of above shall be clearly brought out in the techno commercial, unpriced bid.

All costs for preparation and submission, discussions of the Bid e.g site visit, board, stay, transport and any other incidental costs shall be borne by the Bidder. Advance intimation is to be given to help for accommodation at IITJ on chargeable basis.

The Qualifying Criteria of the Bidder is described at Cl: 8.0 and Eligibility criteria and assessment methods are described in Section-1 of this document.

The Employer (IITJ) has the right to award or cancel the award without assigning any reasons to the Participating Bidders.

Bidders may please note applicable Income tax and Service tax will be deducted at India before payment of their Bills.

Consultancy work would involve deliverables as detailed in Cl: 6.0 of the enclosed tender document. All interested Bidders may send in their Proposals in **Two-Bid System** in line with the requirements but not limited to the same, mentioning their profile, credentials, details of past work of similar nature, time required for preparation of DPR etc, to:

Prof. Rajiv Shekhar, Head, Centre for Solar Energy Technologies (CSET), Indian Institute of Technology Rajasthan, Old Residency Road, Ratanada, Jodhpur 342 011 email: vidtan@iitj.ac.in; Tel: +91 291 2449025 / 0291 2449025 **to be received at IITJ, Jodhpur, Rajasthan, India, by 17:00 hours IST on 20/10/2012.** Addenda, Updates will be made available at the above mentioned website, which may please be visited periodically till the bid closure. Also responses from IITJ can be provided to maximum two email ids of the Participating bidder as authorized by the responding consortium Leader.

Calendar of Events of the Bid Process:

- **Advertisement in Indian News Papers : (Day 0: 20/09/2012)**
- **Posting of Queries over Email by Bidders : (Day 14)**
- **Replies to Queries (by email/ at websites) of all bidders in a comprehensive manner without mentioning the name of the Bidders: (Day 21)**
- **Issuance of corrigendum, if any (Day 22)**
- **Submission dateline for Technical and price bid in two separate, sealed enclosures: (Day 30)**
- **Opening of Technical bids (Day 30)**
- **Deliberation & Evaluation process of technical bid: (Day 51)**
- **Intimation to technically qualified bidders for opening of price bid:(Day 52)**
- **Opening of financial bid (To be intimated)**

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- **Award of work: (To be intimated)**
 - **Acceptance by the Selected Bidder: (To be intimated)**
 - **Signing of agreement at Jodhpur, India: (To be intimated)**
 - **Please see section 9 (Time Schedule) for timelines after signing of agreement.**

For details, please visit websites – www.iitj.ac.in; www.eprocure.gov.in; www.Indianoiltenders.com
www.bhel.com

TENDER DOCUMENT: CHECKLIST FOR SUBMISSION OF OFFER

Tenderers are requested to duly fill-in this check list. The check-list, signed and stamped on each page by the authorized signatory signing the tender must be submitted along with the Techno-commercial part of the tender and also ensure that all details/documents have been furnished as called for in this tender.

Please tick the box and ensure compliance:

1.0 Whether the completed acknowledgment Letter (or through e-mail) has been submitted.

2.0 Validity of offer is up to 6 (Six) months from the last date of submission of Tender/revised offer, if any submitted.

3.0 Whether the Consultant's man power details (Section-5) has been furnished:
Submitted.

3.a Has the reply to `Questions to Bidder` submitted (see section - 6) ?

3.b Has a `Non Disclosure affidavit` ,duly notarized, submitted?

4.0 Power of attorney in favour of person who has signed the offer in judicial stamp-paper / authorized notary at the country of origin of appropriate value.

Submitted.

4. a Has the MOU of all constituent members and the leader, duly signed & notarized submitted?

4.b Has the Scope & Exclusion matrix in form of a chart , submitted, with 4.a above ?

5.0 Confirm that the tenderer has not taken exception or proposed any deviation to any technical, commercial or contractual condition in the tender documents (in case deviations or alternative proposal have been made, please mention or attach a separate sheet).

No Deviation taken

Deviation taken /& alternative proposal attached as separate sheet

6.0 All the documents furnished are readable / legible/translated into English and signed by authorized signatory Legal &Registered Notary in all pages including the original language version.

7.0 Original Copy of this Tender including the following:

- **Tender Document PART-I: TECHNICAL AND UNPRICED COMMERCIAL PART**
(Including but not limited to information as per Clause-7 of this document)
- **Tender Document PART – II: PRICE PART**
- **Information as per forms given in Section-2**

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- **Bank details(Bank`s Unique authenticated identification of bank account number of the bidder in the country of origin)/ including copy of PAN number as per Clause-14 of this document**

Submitted

8.0 All pages of the bid submitted have been consecutively numbered, signed and stamped by the authorized signatory and indication given on the front page of the bid as to the number of pages contained in the bid.

Yes

9.0 **Please note that use of White/Erasing fluid for correcting the rates in Hard Copies are banned. Wherever, the rates are corrected with white/erasing fluid, the bids will be summarily rejected.**

Has it been ensured that White/Erasing fluid is not used for correction in this bid? Have all the corrections (after cutting and writing separately) been properly attested by the person signing the bid?

Yes

10.0 Prices have been submitted as per the price Format enclosed with the tender document.

Yes

(STAMP& SIGNATURE OF BIDDER)

Indian Institute of Technology Jodhpur

1. This document contains pages including this page, checklist and the cover page.
2. The Document can be downloaded from IITJ website www.iitj.ac.in; IOC website www.Indianoiltenders.com and BHEL website www.bhel.com
3. The tender document duly completed and signed should be submitted in a sealed cover super scribing: ***“Consultancy Services for Preparation of Detailed Project Report Experimental Solar Thermal/CSP Plant at IITJ”***. The Bidder shall mention on the sealed cover Individual’s/Company’s/Institution’s name, phone numbers & name of contact person. Bids with all the required information (for **techno commercial and unpriced**) can also be submitted in PDF format except the price (till advised) , as advance information as per the time-lines stipulated in the tender.
4. The tender document from the bidder should be addressed to; **Prof. Rajiv Shekhar**, Head, Centre for Solar Energy Technologies (CSET), Indian Institute of Technology Rajasthan, Old Residency Road, Ratanada, Jodhpur 342 011 email: vidtan@iitj.ac.in; **tobe received at IITJ, Jodhpur, Rajasthan, India, by 17:00 hours IST on 20/10/2012.**
5. Bidders needing any further clarifications or queries may contact the above nodal officer from IITJ, Rajasthan. However, the tender of the Bidders should be received as mentioned in point 3 & 4 above in appropriate manner well within the stipulated due date.

Important Note:

IITJ has the sole discretion to qualify or accept the tender and reject the proposal without assigning any reason whatsoever.

IITJ reserves the right to further shortlist for final selection from the empanelled parties for various assignments.

This advertisement does not constitute and will not be deemed to constitute any commitment on part of IITJ to purchase.

Furthermore, this advertisement confirms neither the right nor an expectation on any party to participate in the proposed tender.

IITJ reserves the right to accept/reject any offer at any stage of the process and/or modify the process or any part thereof or to vary terms at any time without giving any reason

INFORMATION & INSTRUCTIONS FOR BIDDERS

1.0 GENERAL :

- 1.1 **Interested bidders may please refer to attached Section-1 “Who Can Apply”, Assessment Criteria & Assessment Methods ,Award criteria in Clause-8 of this document and ensure their applicability accordingly.**
- 1.2 **All offers should include a covering letter listing the various enclosures being submitted by the bidder.**
- 1.3 All information called for as mentioned in **Section – 2** should be furnished as required in tabulated form. If for any reason, information is provided in a separate sheet, this fact should be mentioned against the relevant point. Even if no information is to be provided, a ‘nil” or “no such case” entry should be made. If any particulars/query is not applicable in case of the applicant, it should be stated as “not applicable”. The applicants are cautioned that not giving complete information called for or not giving it in clear terms or deliberately suppressing the information may result in the bidder being summarily disqualified. Applications made by telegram or telex or email and those received late will not be entertained.
- 1.4 The applicant should sign each page of the application.
- 1.5 **Overwriting** should be **avoided**. Correction, if any, should be made by **neatly crossing out**, initialing, dating and rewriting. Additional sheets, if any added by the party, should also be **numbered**. They should be submitted **as a package**.
- 1.6 The applicant may furnish any additional information which he thinks is necessary to establish his capabilities to successfully complete the envisaged work. He is, however, advised **not to furnish superfluous information**.
- 1.7 Any information furnished by the applicant found to be incorrect either immediately or at a later date, would render him liable to the termination of the contract.
- 1.8 The tender document duly completed and signed should be submitted in a sealed cover superscribing: **“Consultancy Services for Preparation of Detailed Project Report Experimental Solar Thermal/CSP Plant at IITJ”**. The bidder

shall mention company/ entity's Name, Registration number of Incorporation with Registrar of companies , postal address with zip code, phone numbers , name of the contact person, contact Email id on the sealed cover. The tender should be addressed to; **Prof. Rajiv Shekhar**, Head, Centre for Solar Energy Technologies (CSET), Indian Institute of Technology Rajasthan, Old Residency Road, Ratanada, Jodhpur -342 011, INDIA email: vidtan@iitj.ac.in; **tobe received at IITJ, Jodhpur, Rajasthan, India, by 17:00 hours IST on 20/10/2012.**

Parties needing any further clarifications or queries may contact the above nodal officer from IITJ. ***However, the tender documents of the parties should be received in sealed envelope by the stipulated due date as mentioned in point 1.8above.***

2.0 DEFINITIONS:

2.1 ***In this*** document the following words and expressions have the meaning hereby assigned to them.

2.1.1 **IITJ:** means Indian Institute of Technology Jodhpur, Jodhpur.

2.1.2 **IOCL:** means Indian Oil Corporation Limited, R&D Centre, Faridabad.

2.1.3 **BHEL:** means Bharat Heavy Electrical Limited. New Delhi.

2.1.4 **Bidder:** means constituents such as Universities, Research institutions, government agencies, individual expert/s, public & private entities, consulting firms, engineering firms, construction management firms. The above constituent/s may form a consortium in their respective areas of expertise and render the consultancy to prepare, submit a proposal to prepare a DPR till its acceptance from the Employer. The consortium may be led by a Leader(Bidder) having done a MOU(Memorandum of Understanding) with all their associates ,The Bidder is expected to render professional, objective and impartial technical advice for the preparation of DPR. The Bidder should be independent and neither controlling/ getting controlled by any CSP Plant manufacturer, Supplier, System integrators. The Bidder is expected to carry out the assignment with due diligence and in accordance with prevailing standards, ethics of the profession.

2.1.5 “DPR” means “**Detailed Project Report**” with deliverables as described subsequently in this document, **Clause-6**.

2.1.6 **Bidder/ Consultants**) would mean party entrusted to carry out the subject study/consultancy work.

2.1.7 **Employer** shall mean IITJ.

3 FINAL DECISION MAKING AUTHORITY

IITJ reserves the right to accept or reject any application and reject all applications at any time, without assigning any reason or incurring any liability to the applicants.

4 A description of the conceptual solar thermal/CSP experimental plant is given in SECTION-3 of this document. The PROPOSED Solar Thermal/CSP Experimental Plant described in SECTION-3 is PROVISIONAL and concept is needed to be fine-tuned with the help of the bidder/consultant.

5 SCOPE OF WORK

The bidder is required to provide a Detailed Project Report to IITJ solar thermal/CSP experimental plant generally as described above through Figure 1 and Table 1 in Section-3 of this document.

- The Detailed Project Report (DPR) should enable up to finalization of the concept involving important stages like determining technically feasible Experimental Solar Thermal test facility, its capacity, Input – Output parameters of overall process as well as the sub processes of the complete system, supporting calculations for thermal process, Temperatures at nodes for the complete process starting from the solar field components to the electrical energy generation at the Alternator terminal preliminary engineering of the experimental CSP plant in its Solar fields, Power blocks interconnections, thermal storage blocks its estimated overall annual energy generation based on determined & accepted DNI and site area required. This will also include Mechanical systems, Water piping, Water vessels, Steam handling, Storage tanks, Pressure vessels, Tracking of solar field components & its proven validated software, drives & controls, thermal insulation Electrical installations, controls & instrumentations, Computerized Data Acquisition System, internet based energy generation records and other key parameters record, archiving of important

parameters up to 10 years minimum, recommendation on Civil & structural works and any other related system), Installation & Commissioning and Operation & Maintenance procedures, check lists for performance trial and acceptance tests. Also a list of recommended Supplier of equipments and sub systems as well as equipments those can be sourced domestically are to be included in the DPR.

6 Deliverables:

The essential deliverables expected through the consultancy job are as given below which may not be limited to only these (*parties may like to include few more important points based on their past experience that may require consideration*).

6.1 Best practice analysis report

It will include overview of bench marked solar thermal experimental test beds and their executed capacities and layouts in operation worldwide, as well as results of research and development including IP generation pertaining to solar collectors, solar thermal storage concepts & storage materials, etc.

6.2 Concept review and feasibility assessment

Assess the design and operational feasibility of the proposed concept of solar thermal experimental plant as given in figure 1 and table 1 in Section-3. The concept review should include parameters like solar field requirements, possibility to test different heat transfer fluids, different storage possibilities, testing of balance of plant components such as heat exchangers, flow rates, steam quality, Maximum achievable Temperatures , possibility to test different steel drum sizes, feed-heaters, cooling towers such as wet, dry, hybrid and possible Heat storage time to generate electrical energy at night for the capacity that would be possible .

6.3 Design and Technical Specifications

Prepare a preliminary layout of the experimental plant & its control room with initial specifications, technical CAD drawings of experimental system and cost estimates. Following aspects of the experimental plant needs to be addressed for a technically feasible and overall implementable experimental CSP system:

- Solar radiation monitoring and measurement, to globally accepted standard/s.
- Make conclusive determination of DNI (By validated Software, Actual Field measurement or combination of both)
- Recommend the optimum index of (Electrical Energy output/annum (KWh) to the ratio of Land to be allotted by employer in Sq meters.)

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- Determination of DNI and the land that would be required to meet the recommended Electrical Output capacity as a complete system.
 - Recommendation on Real time DNI and other parameters by measuring field instruments, compliant technical standards, Calibration authentication and its hook up to the Data acquisition computer.
 - Solar field design
 - Solar field interoperability
 - Solar field components testing
 - Solar field evaluation - accurate measurements (calibration)
 - Sizing of solar field
 - Thermal storage system design
 - Storage system interoperability
 - Storage components testing
 - Sizing of storage system
 - Storage evaluation - accurate measurements (calibration)
 - Solar field and storage system interoperability
 - Balance of plant interoperability
 - Heat exchanger testing
 - Sizing of heat exchanger
 - Sizing of steam turbine and its governing system
 - Waste Heat availability from steam after generation (if any) and its Calorific value and possibility to use in thermal chillers for Air conditioning or any other process requirements of IITJ such as potable water generation.
 - Sizing of the electric generator (50Hz \pm 3%) and protection systems.
 - The bidder shall provide preliminary designs such as: (1) The list of compliant international Technical standards in a listed manner for the system and its components, (2) Submit a comprehensive Quality Assurance Plan of the complete system, (3) Submit a Inspection and Test plan with acceptance/rejection criteria covering the system up to the component levels, (4) initial technical specifications, (5) Items that can be manufactured at India, (6) Proprietary/Patented items that needs to be imported with reasons, (7) Single line electrical diagram & block diagram, (8) Initial Process & Instrumentation (P&ID) diagram with all the Electro-Mechanical blocks, (9) Heat & Capacity Balance and losses in the Process at all important nodes, (10) Instrumentation & Controls philosophy with scheme diagrams, (11) preliminary details of Data Acquisition, log of required process parameters including energy generation in kWh in real time, internet access to the logged parameters for remote status monitoring, storage of data for minimum 10 years, and archiving preliminary Check List (Dos, Don'ts) for Field installation, (12) preliminary Loads on Foundation data of Equipments, (14) preliminary Power, Control, Instrumentation, Data Cable schedule with sizes, specification & compliant standards, Route Lengths, (14) Recommended latest version software needed for the plant, (15) Calibration details of instruments and fixing

the operating ranges, (16) Pre-commissioning Check lists in detail, (17) Safety recommendations during erection, testing, pre commissioning & Commissioning, (18) Commissioning & Acceptance Check list (PAT) & final acceptance tests (FAT), and (19) Final submission of all documentation in 5 Sets of non writable DVDs.

Initial technical specifications of solar equipments, balance of plant, storage concepts, piping & connections etc, shall be made in line with above so as to invite sufficient competition during the subsequent tendering & procurement process, should be included.

6.4 Cost Estimates:

Realistic cost estimates on the basis of available suppliers or manufacturers should also be included against all relevant equipments & components being suggested.

6.5 Suggested suppliers/manufacturers:

For the procurement of the equipments and components of the plant, future tendering process shall be followed. Bidders are expected to include at least 6 or more names of suppliers or manufacturers of repute of particular equipment in the DPR.

Timelines :

Based on the past experience for developing and commissioning of such plant, realistic time lines for each of the activity should be indicated in form of a Bar Chart and submitted with Techno commercial unpriced bid.

6.6 Detailed Project Report:

The above stages from clause 5 to 6 should lead to preparation of a Detailed Project Report (DPR) which should be able to give a Comprehensive view of the complete project to all the consortium partners of IITJ, viz. IOCL and BHEL. The DPR should be sufficiently strong with all important facts & figures so as to help decide the right capacity of Overall system as well as all the components of the experimental plant and also assist IITJ & its partners in making effective presentation to their respective management acceptance of DPR.

If needed, consultant may have to agree to assist or make presentation or hold discussions on behalf of the consortium to various approving bodies such as the respective company boards, regulating agencies such as MNRE (Ministry of Renewable Energy, Govt. of India), Board of Governors of IITJ etc.

7 Timelines:

Based on the past experience for developing and commissioning of such plant, realistic time lines for each of the above activity may also be indicated.

Even though a Bidder may satisfy all the tender requirements, he would be liable to disqualification if he has:

- 7.1 Made misleading or false representation or deliberately suppressed the information in the forms, statements and enclosures
- 7.2 Record of poor performance such as abandoning work, not properly executing / completing the contract, or financial failures/weakness etc.

IITJ however, reserves the right to restrict the list of pre-qualified parties/applicants to any number deemed suitable by it.

8 AWARD CRITERIA

The criteria for awarding the work of ***Consultancy Services for Experimental Solar Thermal/CSP Plant at IITJ*** have been mentioned in **Section-1** of this document under Assessment Criteria. Thus, parties are requested to essentially cover in their proposals following assessment parameters:

- Description of the background and organization of your firm/entity and each associate for this assignment.
- Past experience of providing similar consultancy in solar CSP/Thermal energy, to be stated chronologically with name of the Client with location address and the contact details, and as built Photographs, Video Walk through (in the form of write protected DVDs).
 - Proof of ready experimental set-up or research or pilot scale facilities within their own company or which have resulted through their consultancy services at any other locations. Please mention the Capacities progressively built up, chronologically.
- Technical approach and methodology and action plan for carrying out the proposed consultancy (see section 2 for requirements).
- Current Manpower profile engaged in the company
- Appreciation letters from Clients.
- Profile of task force to be employed for making this DPR (see section 1).

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- Willingness to enable the Employer or its authorized Team to visit the already executed installations to have their independent evaluations prior to the award.
 - Financial position of the bidder by means of a Net Worth certificate from its Banker.
 - How the Bidder has enabled the CSP plant suppliers/ integrators /developers, effectively in CSP generation in higher MWp capacities globally.
- If needed, bidders may be asked to make presentation based on above parameters at IITJ for further discussions and clarity
 - Further, bidder has to agree to IITJ representatives visiting their facilities for assessment & verification, if needed, at the own cost of Employer or its authorized Team.

The selected party(s) shall have to indemnify IITJ against any 3rd party infringement

IITJ reserves the right, without being liable for any damages or obligation to inform the applicant, to

- Reject any or all of the applications without assigning any reasons.

Any effort on the part of the applicant or his agent to exercise influence or to pressurize IITJ would result in rejection of his application

- A committee comprising of duly nominated officers from IITJ, IOCL and BHEL and approved by Director(IITJ) shall assess the responses from the bidders
- The minimum qualifying marks for the technical bids would be 75% based on the above assessment criterion
- Since, the subject project is very technical in nature, due weightage shall be given for high technical capability. For award of the work, Combined Quality Cum Cost Based System (CQCCBS) shall be adopted wherein 70% weightage will be given to technical parameters and 30% weightage to financial parameters. Here the total cost will be considered.

9 TIME SCHEDULE

For rendering the **Consultancy Services for Preparation of Detailed Project Report (DPR)** covering the above scope of work & deliverables (Cl: 6.0 to Cl: 6.6 above should take 12 weeks time and, following time schedule **starting from the date of acceptance of the formal work order by the Bidder** is being proposed for the bidders to study and quote accordingly:

Stage 1	Kick-off meeting between the Employer & the Successful Bidder	Week 4
Stage 2	Best practice analysis report at the time of kick-off meeting	
Stage 3	Concept review and feasibility assessment *	Week 6
Stage 4	<u>Deliverables as mentioned in Clause 6 to 6.6 of this document</u> Design and Technical Specifications	Week 9
Stage 5	Suggested suppliers/manufacturers, cost estimates, timelines etc.	Week 10
Stage 6	Holding an interaction meeting/workshop by the Consultant at Owner's (IIT Rajasthan, Jodhpur, Rajasthan, India) premises and then submitting the final copy of the Detailed Project Report#	Week 12
Stage 7	Acceptance of the DPR	Week 14

*** If needed, between stage 2 & 3 above, consultant to submit draft reports in pdf format by email till such time that Employer is satisfied with the quality & content of the concept and the report.**

before holding the workshop at Owner's premises, Consultant has to submit a draft copy of the report by email so that Owner can study the same beforehand

10 SCOPE OF OFFER

Bidder should consider the following points while making this price bid in format given in section - 4:

- 10.1** Kick-off between the Owner and the Consultant. Consultant to include its travel and all other related costs for carrying out this activity. If needed, Consultant to agree for Owner's visit to Consultant's Solar Energy research facility and visit to any other related or relevant facility of the Consultant (Employer to bear travel, board, lodge expenses on their own for this activity).
- 10.2** Suitable man hours required to carry out the desktop research in preparation of DPR covering the scope of work and deliverables of DPR as enumerated in clause No. 5.0 & 6.0 above

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- 10.3** Exchange of draft DPR report(s) as per time schedule given in clause No. 9.0 to the complete satisfaction of the Owner
 - 10.4** Finalization of the report and submission to IITJ after holding a one day workshop at IITJ.
 - 10.5** Presentation by the Consultant at Owner's premises before the submission of the final report. Consultant to include its travel and all other related costs for carrying out this activity.
 - 10.6** Consultant to agree to participate in various presentations, discussions etc pertaining to the subject project upon invitation of IITJ.

11 GENERAL INSTRUCTIONS

- 11.1** Provide an organization chart for the task force proposed for the Study as per format given in Section-5.
- 11.2** Provide names and resumes of all the Key Personnel (and alternates, if any) on the task force.
- 11.3** Indicate the specific office where the work will be performed.
- 11.4** Confirm that they are fully conversant with the Indian laws, regulations and procedures as may be required. Bidder may ask suitable questions prior to bid submission and get replies from the owner.
- 11.5** Provide a detailed execution plan outlining methodology in performing all items of the Scope of Work.
- 11.6** The bidding documents are and shall remain the exclusive property of the IITJ, herein after termed as EMPLOYER, without any right of the bidder to use them for any purpose except bidding and for use by successful Bidder with reference to the work.
- 11.7** On no account will any person to whom bidding documents are furnished, part with possession thereof or copy or disclose the provisions thereof or any of them or disclose or take copies of tracings or of any drawing, plan or route forming part thereof, it being understood that the information therein is confidential, and that the bidding documents are therefore being furnished only to bidders in strictest confidence.
- 11.8** Bidding documents are non-transferable.

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- 11.9** The details as called for in the bidding documents shall be filled and completed by the Bidders in all respects and shall be submitted with requisite information and Annexure.
- 11.10** All bids shall be typewritten in English.
- 11.11** If the space in any Proforma of bidding document is insufficient, additional pages shall be separately added. These pages shall be numbered and shall also carry the bidding document number and shall be signed by the Bidder and entered in the Index for Bid.
- 11.12** Bidder shall clearly indicate their legal constitution and the person signing the bid shall state his capacity as also the source of his ability to bind the Bidder. The Power of Attorney or Authorization or other document constituting adequate proof of the ability of the signatory to bind the Bidder, shall be annexed to the bid. IITJ may reject outright any bid unsupported by adequate proof of the signatory's authority.
- 11.13** The complete bid shall be signed by the Bidder on each page.
- 11.14** Within 7 days of receipt of the bid documents, Bidder shall complete and submit the acknowledgment letter confirming whether or not the bidder intends to submit a bid (Quoting Or Declining to Quote). The Bidder must indicate the address of his bidding office in the acknowledgement letter along with Telephone/ Fax and names of contact persons, email IDs of concerned person/s. Bidder shall also indicate similar details of their office in India, if any. In case bidder is not bidding, he should clearly state the reasons for non-submission of his bid.
- 11.15** One set of Bidding Documents is issued (by way of e-downloading) herewith to the Bidder to submit their bid. Bidder shall sign and stamp each page of documents as token of their acceptance of having considered these documents for preparation of their bid.
- 11.16** Bid shall remain valid for acceptance for a period of 6 (six) months from the last date of submission of the bid/ revised bid if any. The bidder shall not be entitled to modify, vary, revoke or cancel/ withdraw his bid during the said period. The validity of the bid shall be extended as and when required for the period as requested by IITJ in writing and agreed by the bidder.
- 11.17** Bids must be submitted by the time and date mentioned in the Letter Inviting Tender at the address stated therein.

11.18 Priced and Unpriced copies of Bidder's quotation must be submitted in separate sealed 02 (Two) envelopes as stated below :

PART-I: TECHNICAL AND UNPRICED COMMERCIAL PART

This part shall contain technical and commercial (unpriced) proposal in separately sealed envelopes clearly super-scribing on the top of the envelope "TECHNICAL AND UNPRICED COMMERCIAL PART", Name of Work, Due Date, Name and Address of the tenderer shall also be written outside the envelope.

PART – II: PRICE PART

This part i.e. PRICE PART shall be submitted in a separate sealed envelope (as per the format given in Appendix-II) duly signed and stamped on each page clearly superscribing on top of the envelope "PRICE PART- DO NOT OPEN" as detailed herein below. Name of Work, Tender No., Due Date, Name and Address of the tenderer shall also be written outside the envelope. Correction fluid is not allowed to be used. In case there is any correction, the Bidder shall cut the same neatly and put his signature and stamp with date near the place of each correction. This part (i.e. PRICE PART) shall contain only "SCHEDULE OF RATES" as per **Section-4** duly filled in and any other information/ document which has been specifically asked to be furnished along with the price part. It is to be noted that the Price Part shall contain only PRICES and no conditions whatsoever. Any conditions given in this part shall not be considered and may render the offer liable for rejection.

The bid shall be signed by someone legally authorized to enter into commitment on behalf of the Bidder. Bidder shall submit Power of Attorney in favor of the person who is authorized to enter into commitments on behalf of the Bidder.

IITJ will not be bound by any Power of Attorney granted by the Bidder or changes in the constitution of the firm made subsequent to submission of the bid or after the award of the contract. IITJ may, however, recognize such Power of Attorney and changes after obtaining proper legal advice, the cost of which will be borne by the Bidder.

The cancellation of any document such as Power of Attorney, Partnership Deed etc. should be communicated by the Bidder to the IITJ in writing well in time, failing which IITJ shall have no responsibility or liability for any action taken by IITJ on the strength of the said documents.

Should the Bidder have a relative or relatives in IITJ or one or more of its shareholders are a relative or relatives of the shareholder(s) employed in a superior capacity in IITJ, the relevant authority inviting bids shall be informed of the facts at the time of submission of the bid, failing which the bid may be disqualified or if such fact subsequently comes to light, IITJ reserves the right to take any other action as it deems fit in accordance with any applicable Law, Rules, Regulations of the like in force.

11.19 COST OF BIDDING

The bidder shall bear all direct and indirect costs associated with the preparation or delivery/ submission of their Bid, participating in discussions etc. including costs and expenses related with visits to the site(s) and Owner's offices. IITJ will in no case be responsible or liable for reimbursement of those cost and expenses regardless of the outcome of the bidding process.

11.20 ARRANGEMENT OF BID

The bid shall be neatly typewritten and as per consecutively numbered pages. They should not contain any terms and conditions printed or otherwise, which are not applicable to the bid.

Insertions, postscripts, additions and alterations shall not be recognized unless signed by the Bidder's legally authorized attorney.

11.21 BIDDER'S RESPONSIBILITY FOR QUOTATION

Although all details presented in this bid documents have been complied with all reasonable care, it is the Bidder's responsibility to ensure that the information provided is adequate and clearly understood. Bidder's quotation is the responsibility of the Bidder and no relief or consideration can be given for errors and omissions.

11.22 BID CLARIFICATION/ AMENDMENTS BY IITJ

IITJ may issue clarifications/ amendments in the form of addendum/ corrigendum during the bidding period and may also issue amendments subsequent to receiving the bids. For the addendum/ corrigendum issued during the bidding period, bidders shall confirm the inclusion of addendum/ corrigendum in their bid. For clarifications issued by IITJ subsequent to receiving the bids, the Bidder shall confirm receipt and for any impact on the quoted prices, the Bidder shall follow the instructions issued along with addendum/ corrigendum.

Bidders shall examine the Bidding documents thoroughly and submit to IITJ any apparent conflict, discrepancy or error. IITJ shall issue appropriate clarification or

amendment, if required. Any failure by Bidder to comply with the aforesaid shall not excuse the Bidder from performing the services in accordance with the agreement, if subsequently awarded the contract.

All questions and clarifications related to Bidding documents shall be addressed in writing (by Email only) to:

Prof. Rajiv Shekhar,
Head, Centre for Solar Energy Technologies (CSET),
Indian Institute of Technology Rajasthan,
Old Residency Road, Ratanada,
Jodhpur 342 011
Rajasthan, India
Email: vidtan@iitj.ac.in

11.23 CONFIDENTIALITY OF DOCUMENTS

- i. The Bid documents are non-transferable and shall be returned to the OWNER by any recipient who does not intend to submit a Bid.
- ii. The Bid documents are and shall remain the exclusive property of the OWNER without any right in the Bidder to use them for any purposes except for the purpose of bidding and for use by the successful Bidder with reference to the resultant contract.
- iii. On no account will any person to whom the Bid documents are furnished, part with the possession thereof or copy or disclose the provision thereof or any of them or disclose or take copies of any drawings, plans or other documents comprised therein, it being understood that information given in the Bid documents is the proprietary and confidential information of the OWNER, and that the Bid documents are therefore being furnished only in the strictest confidence. The intending Bidder may, however, disclose the Bid documents and/or furnish copies in whole or part thereof to employees, CONSULTANTS and/or potential sub-contractors involved in the preparation of the Bid who have understood the proprietary and confidential nature of the documents and have undertaken to be bound by and maintain confidentiality.
- iv. The Bid of any bidder who contravenes any of the foregoing provisions hereof is liable to be rejected.

-
- v. The successful bidder, herein after termed as CONSULTANT, shall have to sign a secrecy (mutually agreed Non Disclosure) agreement with the OWNER for this project.

11.24 IITJ's RIGHTS

- IITJ reserve the right to accept a bid other than the lowest and to accept or reject any bid in whole or part, or to reject all bids with or without assigning in reasons.
- In case of non-submission of documents or submission of incomplete documents as per above clause along with Part-I, IITJ reserves the right not to evaluate such offers further and not to enter into correspondence in this regard after opening of offer.
- IITJ shall evaluate the offer of tenderers considering the resource available for proper execution of works. In view of this, tenderers are required to furnish adequate details with respect to available/ spare/ additional resources along with the details of the resources planned to be deployed on the works under execution.

11.25 APPLICABLE LANGUAGE

The bids and all correspondence incidental to and concerning to this bid shall be in English language only. For documents submitted in any other language, an English Translation shall also be submitted, in which case, for interpretation of the offer, the English Translation shall govern.

11.26 CURRENCIES OF BID AND PAYMENT

1. Foreign Bidders can quote their prices either in US Dollars or in Euro or in bidder's home currency.
2. Indian Bidders shall quote their prices in Indian rupees only.

11.27 EVALUATION OF TECHNICAL BID

All valid bidders are required to submit bids in two parts i.e. **PART-I: TECHNICAL AND UNPRICED COMMERCIAL PART** and **PART-II: PRICED PART**. The technical part of the bid will be evaluated by the owner for its completeness and accurateness.

11.28 EVALUATION OF PRICE BID

- The price bids of only those bidders shall be considered for opening and evaluation whose bid is determined to be technically and commercially acceptable to IITJ.
- Evaluation of price bid shall be taken up to determine the competitive prices of the techno-commercially acceptable bids and include the following:
 - i. The quoted prices shall be checked to determine the arithmetical correctness of the same.
 - ii. IITJ reserves their right to negotiate the quoted price.

11.29 CONVERSION TO SINGLE CURRENCY

To facilitate evaluation and comparison of the prices, the OWNER will convert all bid prices expressed in currencies other than Indian currency, to the Indian currency i.e. in Indian Rupees at Bill collection selling market rate of foreign exchange declared by the State Bank of India on the date of opening of Price bids.

11.30 REBATE

No suo-moto reduction in price(s) by bidders is permissible after opening of the bid. If any Bidder unilaterally reduces the price(s) quoted by him in his bid after opening of bids, such reduction shall not be considered for comparison of prices but shall be binding on the Bidder if he happens to be selected for award of work.

11.31 DISCUSSIONS AND NEGOTIATIONS

Owner shall be free to engage in discussions or negotiations with any or all Bidders concerning the terms of their respective bids at all time prior to execution by both parties.

11.32 UNSUCCESSFUL BID

In the event that a Bidder is unsuccessful with its bid, Owner shall notify the Bidder accordingly. If required by Owner, the Bidder shall return the ITB documents.

11.33 SITE LOCATION

Site for the Project is **Indian Institute of Technology Jodhpur, Jodhpur** in the State of Rajasthan, India.

11.34 CLIMATE OF KARWAR @ JODHPUR

Jodhpur district of the Rajasthan state of India stretches between latitudes 26°0' and 27°37' north, and between longitudes 72°55' and 73°52' east. This district is situated at a height of between 250 - 300m above sea level. This district comes under the arid zone, and covers 11.60% of the total arid zone area of Rajasthan state. Some areas of the Thar Indian Desert also come within the district. Jodhpur bears extremes of heat in summer and cold in winter, as is the characteristic of a desert. Max outdoor temp for design purpose shall be considered as 50° C.

11.35 OWNER'S RIGHT TO ACCEPT ANY BID AND REJECT ANY OR ALL BIDS

The IITJ reserves the right to accept or reject any Bid and to annul the Bidding process and reject all Bids at any time without thereby incurring any liability to the affected Bidder(s) or any obligation to inform the affected Bidder(s) of the grounds for the IITJ's action.

11.36 CONTACTING THE OWNER

No bidder, their representatives or agents shall contact the OWNER on any matter relating to this Bid from the time of submission of Bids, unless requested so in writing. Any effort by a Bidder to influence the OWNER in the Owner's decisions in respect of Bid evaluation will result in the rejection of that Bidder's Bid.

12 PERFORMANCE SCHEDULE

The **EMPLOYER** expects the **BIDDER** to perform and complete the activities of DPR covered in the scope of work defined in the letter to be carried out within **12 weeks** from Bidder's acceptance of the award of work which shall be the date of email / fax / letter of acceptance whichever is issued earlier.

12.1 Kick-off Meeting

After award of work to the Bidder, a kick-off meeting will be held between the **Employer** and the **Bidder for:**

- a) Clarification & Interactions between **CONSULTANT** and Employer on the quantum of work, deliverables etc of the proposed Study

-
- b) Arrive at a comprehensive basis for the Study
 - c) Identify any additional information required from the.

12.2 Documents prepared by the Consultant to be property of the Employer

All plans, drawings, specifications, designs, reports and other documents prepared by the Consultant in performing the Services shall become and remain the property of the Employer, **and the Consultant shall**, not later than upon termination or expiration of this Agreement, deliver all such documents to the Employer, together with a detailed inventory thereof. They may retain a copy of such documents but shall not use them for any purpose unrelated to this Contract without the prior written approval of the Employer.

13 ASSOCIATION OF Employer`s PERSONNEL

The CONSULTANT shall ensure that **OWNER** is kept fully informed at all stages of the work under this agreement.

14 TRANSFER OF PROPERTY

All drawings, flow sheets, specifications, data and tracings shall become the property of the **OWNER**.

15 PAYMENT

The percentage payment after each stage is given in Section-4 for the information of the bidder.

- 15.1** An advance payment (10% maximum) can be made to the Consultant as mentioned in the price format, subject to deposit of irrevocable bank guarantee of equal amount by the Consultant. The entire amount of advance (10% of consultancy fees) shall be adjusted against payment of fees at the next stage.
- 15.2** The Bank Guarantee required shall be obtained from State Bank of India or any other scheduled bank (as approved by Reserve Bank of India) and shall be valid up to one year from date of issue. After the payment of next stage of fees with adjustment for advance by IITJ, the bank guarantee shall be returned to the consultant, without any interest.
- 15.3** For short stay of professionals/staff of the consultants visiting Jodhpur in connection with the consultancy work, the Institute may, subject to availability, provide accommodation in its Visitor's Hostel/Guest House.

Room rents, as applicable to outside visitors/faculty on Institute work, shall be payable by the Consultant in such a case.

- 15.4** After the expiry of the period of the contract, the Consultant may be paid a retainer fee or per day visit fee including travel, boarding and lodging, for monitoring and evaluation works, as mutually agreed
- 15.5** Deductions on account of Income tax and other statutory provision shall be made by IITJ, upon payment of fees or any other payments whatsoever to the Consultant, as per prevalent rules/provisions.
- 15.6** All payments made by the Institute towards the Consultant, for any purpose whatsoever, shall be in Indian Rupees only.
- 15.7** The fees, shall be payable only after 30 days of completion of the specified component of the work to the entire satisfaction of the Institute.
- 15.8** All payments by **OWNER** to **CONSULTANT** shall be preferably made by wire transfer to an account. The **CONSULTANT** should mention the following details.

Bank Details required for Online Payment from Indian Parties

Name & Address of Party
Bank Name & Address
Bank Account No
Type of Bank Account
IFSC Code
MICR Code
PAN No

Bank Details required for Online Payment from Foreign Parties

Name & Address of Party
Bank Name & Address
Bank Account No
Type of Bank Account
SWIFT Code
IBAN Code (for German vendors)
PAN No

16 NOTICES

Any notice or claim or communication required hereunder shall be made by registered or certified air mail, addressed to the proper address mentioned below:

CONSULTANT: (To be furnished by the **CONSULTANT**)

OWNER :

Prof. Rajiv Shekhar

Head, Centre for Solar Energy Technologies (CSET),

Indian Institute of Technology Rajasthan,

Old Residency Road, Ratanada,

Jodhpur 342 011

Rajasthan, India

Email: vidtan@iitj.ac.in

All correspondence, Invoices, Notices and claims sent by **CONSULTANT** to **OWNER** shall be addressed for the attention of Prof Rajiv Shekhar.

CONSULTANT will indicate the name, address and contact details of the person to whom **OWNER** has to address the correspondence.

17 SUSPENSION

The OWNER may by a written notice of suspension to the **CONSULTANT**, suspend all activities of the study, if the **CONSULTANT** fails to perform or to satisfactorily perform any of his obligations under this Agreement, including the carrying out of the Services, provided that such notice of suspension (i) shall *specify the* nature of the failure, and (ii) shall request the **CONSULTANT** to remedy such failure within a period not exceeding fifteen (15) days after receipt by the **CONSULTANT** of such notice of suspension.

18 TERMINATION

18.1 By the OWNER

The **OWNER** may, by not **less** than Ten (10) days' written notice of termination to the **CONSULTANT**, such notice to be given after the occurrences of any of the events specified in paragraphs (a) through (d) of this clause 10.1, terminate this Agreement:

- If the **CONSULTANT** fails to remedy in the performance of its obligation hereunder, the failure as specified in a notice as provided for in Clause 17.0 herein above, within fifteen (15) days of receipt of such notice or within such further period as the **OWNER** may have subsequently approved in writing;
- If the **CONSULTANT** becomes insolvent or bankrupt or enters into any agreement with their creditors for relief of debt or takes advantage of any law for the benefit of debtors or goes into liquidation or receivership whether compulsory or voluntary;
- If the **CONSULTANT** fails to comply with any final decision reached as a result of arbitration proceedings
- If the **OWNER**, in its sole discretion and for any reason whatsoever, decide to terminate the Agreement.

18.2 Cessation of rights and obligations

Upon termination of the Agreement pursuant to Clause 17.0 hereof, all rights and obligations of the parties hereunder shall cease, except (i) such rights and obligations as may have accrued on the date of termination or expiration (ii) the obligation of confidentiality hereof, and (iii) any right which a Party may have under the Applicable Law.

18.3 Cessation of services

Upon termination of this Contract by notice pursuant to Clause 18.1 hereof, the **CONSULTANT** shall, immediately upon receipt of such notice, take all necessary steps to bring the Services to a close in a prompt and orderly manner and shall make every reasonable effort to keep expenditure for this purpose to a minimum.

18.4 Payment upon termination

Upon the termination of this Contract pursuant to Clause 18.0 hereof, the **OWNER** shall not make any payment to the **CONSULTANT**.

19 SETTLEMENT OF DISPUTE

19.1 Dispute Resolution

The Parties shall attempt to amicably settle any dispute, differences or claims arising between them.

19.2 Informal Dispute Resolution

Each Party shall designate in writing to the other Party a representative who shall be authorized to resolve any dispute arising under this Agreement in an equitable manner.

If the designated representatives are unable to resolve a dispute under this Agreement within fifteen (15) days, such a dispute shall be referred by such representatives to a senior officer designated by each Party who shall attempt to resolve the dispute within a further period of fifteen (15) days.

The Parties hereto agree to use their best efforts to attempt to resolve all disputes arising hereunder promptly, equitably and in good faith, and further agree to provide each other with reasonable access during normal business hours to any and all non-privileged records, information and data pertaining to any such dispute.

19.3 Arbitration

In the event that the Parties are unable to settle any disputes, differences or claims arising between them amicably as per the provisions of Clause 11.1 herein above, such disputes, differences or claims shall be referred to arbitration. The arbitration shall be carried out based on the provisions of Indian Arbitration and Conciliation Act, 1996.

The reference to arbitration shall be made to an arbitral tribunal consisting of three arbitrators. **OWNER** and the **CONSULTANT** shall appoint one arbitrator each, and the arbitrators appointed, within thirty (30) days after the appointment of the second arbitrator, shall appoint the third arbitrator for such arbitration who shall act as the presiding arbitrator of the tribunal, or if the two arbitrators cannot agree, the third arbitrator shall be appointed in the manner specified in the Arbitration and Conciliation Act, 1996. No arbitrator shall be a present or former employee or "agent of, or **CONSULTANT** or counsel to, either Party or any affiliate of either Party, or in

any way related or closely connected with the promoters, partners, or beneficiaries of the Parties.

A notice under this clause by any Party shall, inter alia, clearly set out the dispute(s) between the Parties, the intention of the aggrieved Party to refer such dispute(s) to arbitration as provided herein. All notices by one Party to the other in connection with the arbitration shall be in writing and shall be made as provided for in this Agreement. The language to be used on all written documents provided in each arbitration and in all arbitration proceedings shall be English.

Each arbitration shall be conducted in accordance with the arbitration rules of the United Nations Commission on International Trade Laws from time to time (the "Rules") except to the extent the Rules conflict with the provisions of this Clause 11.3 in which event the provisions of this Clause 11.3 shall prevail.

Each arbitration shall be conducted in Jodhpur, India.

Any decision or award of an arbitral tribunal appointed pursuant to this Clause 11.3 shall be final and binding upon the Parties and shall be the sole and exclusive remedy between the Parties regarding any claims, counterclaims, issues or accountings presented or pleaded to the arbitrators. The Parties waive any rights to appeal or any review of such award by any court or tribunal of the competent jurisdiction. The Parties agree that any arbitration award made may be enforced by the Parties against assets of the relevant Party wherever those assets are located or may be found, and judgment upon any arbitration award may be entered by any of competent jurisdiction thereof. The Parties expressly submit to the jurisdiction of any such court. Any arbitration proceedings or award rendered hereunder and the validity, effect and interpretation of this Clause 11.3 shall be governed by the laws of India.

19.4 Jurisdiction

Notwithstanding any other Court or Courts having jurisdiction to decide the question(s) forming the subject matter of the reference if the same had been the subject matter of a suit, any and all actions and proceedings arising out of or relative to the Agreements (including in relation to any arbitration in terms thereof) shall lie only in the Court of Competent Civil Jurisdiction in this behalf at Jodhpur, India (where the contracts are to be signed on behalf of the **OWNER**) and only the said Court(s) shall have jurisdiction to entertain and try any such action(s) and/or proceeding(s) to the exclusion of all other Courts.

19.5 Misconduct

If and whenever any of the **CONSULTANT'S** employee/person shall, in the opinion of the **OWNER** be guilty of misconduct or be incompetent or indifferently qualified or

negligent in the performance of his / their duties or if in the opinion of the **OWNER** he/they are undesirable for any reason (which need not be disclosed to the **CONSULTANT**), the **CONSULTANT** shall forthwith repatriate such person or persons and replace such person(s) at the expense of the **CONSULTANT** by a qualified and competent substitute.

19.6 Governing law

The contract shall be governed by Indian Law.

19.7 Exclusion of the Government of India's liability

It is expressly understood and agreed that **IITJ** will enter into any resulting agreement solely on their own behalf and not on behalf of any other person or entity. In particular it is expressly understood and agreed that the Government of India is and will not be a party to any such agreement and have and will have no liability, obligation or right whatsoever hereunder. It is expressly understood and agreed that **IITJ** is independent legal entity with power and authority to enter into contracts solely on their own behalf under the applicable laws of India and the general principles of Contract law.

The **CONSULTANT** expressly agrees, acknowledges and undertakes that **IITJ** is not an agent, representative or delegate of the Government of India and that of the Government of India is not and shall not be liable for any act, omission, commission breach or other wrong arising out of this Contract. The **CONSULTANT** hereby expressly waives, releases and forgoes any and all actions or claims, including cross claims, imp leader claims or counter claims, against the Government of India arising out of any resultant agreement and covenants not to sue the Government of India for any manner of claim, cause of action or thing whatsoever arising out of or under any such agreement.

19.8 Remedy for breach of contractual obligations

Except as and subject to any limitations herein elsewhere provided, if either party to the Contract commits a default of any of the contractual obligations under the contract or commits any other act or omission which is inconsistent with the continuance of the Contract, the party in default shall be liable to pay damages to the other party.

20 ASSIGNMENT

20.1 Except as herein after provided the agreements shall not be assignable by either party without the prior written consent of the other party, except that it may be assigned without such consent to the successor of either

party or to a person, firm or company acquiring all or substantially all the business and assets of such party. No assignment of this contract shall be valid until and unless the agreement shall have been assumed by the assignee.

- 20.2** The Agreements may be assigned by **CONSULTANT** to **its successor** or to an affiliate upon sole written notice to **OWNER** provided however that such assignee shall have first agreed to assume all **CONSULTANT** obligations and that such assignee has the same ability as **CONSULTANT** to perform those obligations.
- 20.3** In all and any other case, assignment by either party of its rights and obligations hereunder shall be subject to the prior written consent of the other party.
- 20.4** Confidentiality obligations between the Parties above shall survive any assignment.

21 WAIVER

Failure of either Party to give notice to the other Party of an alleged breach hereof or default hereunder immediately upon same coming to its attention shall not constitute a waiver of its right to assert its claim as to such any breach or default.

22 FORCE MAJEURE

- 22.1** If the performance of any obligation is delayed for any period because of hostilities, embargo, blockades, Governmental action or interference, civil commotion, war (declared or undeclared), act of God or for any other reason beyond either party's reasonable control, the parties shall not be held to the date of performance of such obligation and the representatives of the parties shall immediately consult each other and agree upon the necessary measures to be taken.
- 22.2** Each party affected by Force Majeure shall promptly inform the other in writing of the occurrence and of the cessation of the Force Majeure. The existence of such circumstances within the territory of the countries of the parties shall, if required by the other Party be confirmed by certificates to be issued by the appropriate authorities in the countries concerned.

Section-1**Bidder`s Eligibility Criteria**

Consortiums/firms or National/International Research institutes and Consultancy companies having Proven Track Record of Carrying Out Similar Work or Having Similar Facilities in Solar Thermal/CSP experimentations can apply.

Evaluation Criteria

(i)	Specific experience of the Consultants relevant to the assignment	[25]
(ii)	Organizational structure and manpower profile engaged in the company with relevant details	[10]
(iii)	Technical approach and methodology and action plan for the execution of project work	
	a) Technical approach and methodology	[30]
	b) Action plan	[10]
	Total points for criterion (ii):	[40]
(iv)	Key professional staff qualifications and competence for the assignment	
	a) Team Leader	[5.5]
	b) Solar field designer(s)	[4.5]
	c) Thermal engineer(s)	[4.5]
	d) Power plant engineer(s)	[3.5]
	e) Structural engineer(s)	[2.5]
	f) Control and instrumentation engineer(s)	[4.5]
	Total points for criterion (iv):	[25]

The number of points to be assigned to each of the above positions or disciplines shall be determined considering the following two sub-criteria and relevant percentage weights*A:

- | | | |
|----|---|--------|
| 1) | General qualifications with respect to relevant expertise required | [20 %] |
| | B.Tech./MSc or equivalent = 10/20; M.Tech. or equivalent = 15/20; PhD = 20/20 | |
| 2) | Adequacy for the assignment | [80%] |

***A**

- For (iv) (a) to (f) - If qualification is lower than B.Tech./MSc, the concerned professional will get zero points.

Total points for the five criteria:

100

The minimum technical score required to pass is: 75 Points

ASSESSMENT METHOD

A committee comprising of duly nominated officers from IITJ, IOCL and BHEL and approved by Director (IITJ) shall assess the responses from the bidders.

The minimum qualifying marks for the technical bids would be 75% based on the above assessment criterion.

The total price quoted for this bid will be used as the "financial parameter" for evaluating the bid. The quoted price should be "unconditional," and should include applicable taxes, levies etc.

Since, the subject project is very technical in nature, due weightage shall be given for high technical capability. For award of the work, Combined Quality Cum Cost Based System (CQCCBS) shall be adopted wherein 70% weightage will be given to technical parameters and 30% weightage to financial parameters.

Section-2**FINANCIAL INFORMATION**

Financial Analysis – Details to be furnished duly supported by figures in balance sheet/profit & loss account for the last three years duly certified by the Chartered Accountant, as submitted by the applicant to the income Tax Department (Copies to be attached)

Financial Years

2009-10	2010-11	2011-12

- (i) Gross Annual turnover.
- (ii) Annual expenditure
- (iii) Profit/Loss

- (iv) Financial arrangements for carrying out the proposed work.

- (v) The following certificates are enclosed:
 - (a) PAN and TAN Nos.
 - (b) PF, ESI & Service Tax Registration

Signature of Applicant (s)

Signature of Chartered Accountant with Seal

DETAILS OF ALL WORKS OF SIMILAR NATURE COMPLETED DURING THE LAST FIVE FINANCIAL YEARS ENDING 31st MARCH 2012.

Assignment name:	Approx. value of the contract (in Indian Rupees):
Country: Location within country:	Duration of assignment (months):
Name of Client:	Total N ^o of staff-months of the assignment:
Address:	Approx. value of the services provided by your firm under the contract (in Indian Rs):
Start date according to contract (month/year): Actual start date (month/year): Stipulated completion date (month/year): Actual completion date (month/year)	Reasons for delay in starting/completing assignment
Name, designation, address, e-mail, telephone number of officer to whom reference may be made	Name of senior professional staff of your firm involved and functions performed (indicate most significant profiles such as Project Director/Coordinator, Team Leader):
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	
Litigation/ arbitration pending /in progress with details (Indicate gross amount claimed and amount awarded by the Arbitrator)	
Additional remarks	

**NOTE: 1. FOR STIPULATED DATE OF COMPLETION, SUBMIT COPY OF WORK ORDER
2. FOR ACTUAL DATE OF COMPLETION, SUBMIT COPY OF COMPLETION CERTIFICATE.**

Signature of Applicant (s)

DETAILS OF PROJECTS UNDER EXECUTION OR AWARDED

Assignment name:	Approx. value of the contract (in Indian Rupees):
Country: Location within country:	Duration of assignment (months):
Name of Client:	Total N ^o of staff-months of the assignment:
Address:	Approx. value of the services provided by your firm under the contract (in Indian Rs):
Start date according to contract (month/year): Actual start date (month/year): Stipulated completion date (month/year):	Stipulated % of work to be completed to date. Actual % of work to be completed to date. Reasons for slow progress, if any.
Name, designation, address, e-mail, telephone number of officer to whom reference may be made	Name of senior professional staff of your firm involved and functions performed (indicate most significant profiles such as Project Director/Coordinator, Team Leader):
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	
Additional remarks:	

NOTE: 1. FOR STIPULATED DATE OF COMPLETION, SUBMIT COPY OF WORK ORDER

Signature of Applicant (s)

Technical approach and methodology and action plan

Technical approach and methodology

Please explain your understanding of the objectives of the assignment, approach to the services, methodology for carrying out the activities and obtaining the expected output, and the degree of detail of such output. You should highlight the problems being addressed and their importance, and explain the technical approach you would adopt to address them. You should also explain the methodologies you propose to adopt and highlight the compatibility of those methodologies with the proposed approach.

Present and justify here any modifications or improvement to the Terms of Reference you are proposing to improve performance in carrying out the assignment (such as deleting some activity you consider unnecessary, or adding another, or proposing a different phasing of the activities). Such suggestions should be concise and to the point, and incorporated in your Proposal.

Action Plan

You should propose the main activities of the assignment, their content and duration, phasing and interrelations, milestones (including interim approvals by the Client), and delivery dates of the reports. The proposed action plan should be consistent with the technical approach and methodology, showing understanding of the TOR and ability to translate them into a feasible working plan. A list of the final documents, including reports, drawings, and tables to be delivered as final output, should be included here.

Section-3**PROPOSED SOLAR THERMAL/CSP EXPERIMENTAL PLANT****Objective:**

R&D Studies on solar power generation through CSP technologies so as to achieve the least cost of energy generation. The main focus of R&D will be on storage mechanisms to ensure continuous operation of the plant in the most cost effective manner.

Deliverables:

Following deliverables are expected out of the proposed project:

- To set-up an experimental concentrated solar power (ECSP) using different solar fields.
- To establish continuous running of the above ECSP by experimenting with suitable heat storage mechanisms/concepts/materials, additional solar fields or their combinations thereof.
- To have an experimentation facility with as much flexibility as possible so as to achieve the LCOE (least cost of electricity/energy).
- Deployment of multiple solar technologies under same geographical condition to have a comparative assessment of each of these technologies for their techno-economic feasibility under Indian conditions.

Thus, the purpose of setting up this experimental plant is to setup a first of its kind pilot scale solar thermal/CSP testing facility in India to evaluate:

- Solar collector technologies
- Thermal storage systems
- Optimized integration of solar fields and thermal storage

A conceptual schematic of the experimental thermal/CSP plant is shown in figure – 1.

Solar Thermal Experimental Unit

For evaluation of thermal storage concepts, solar fields and combination of both

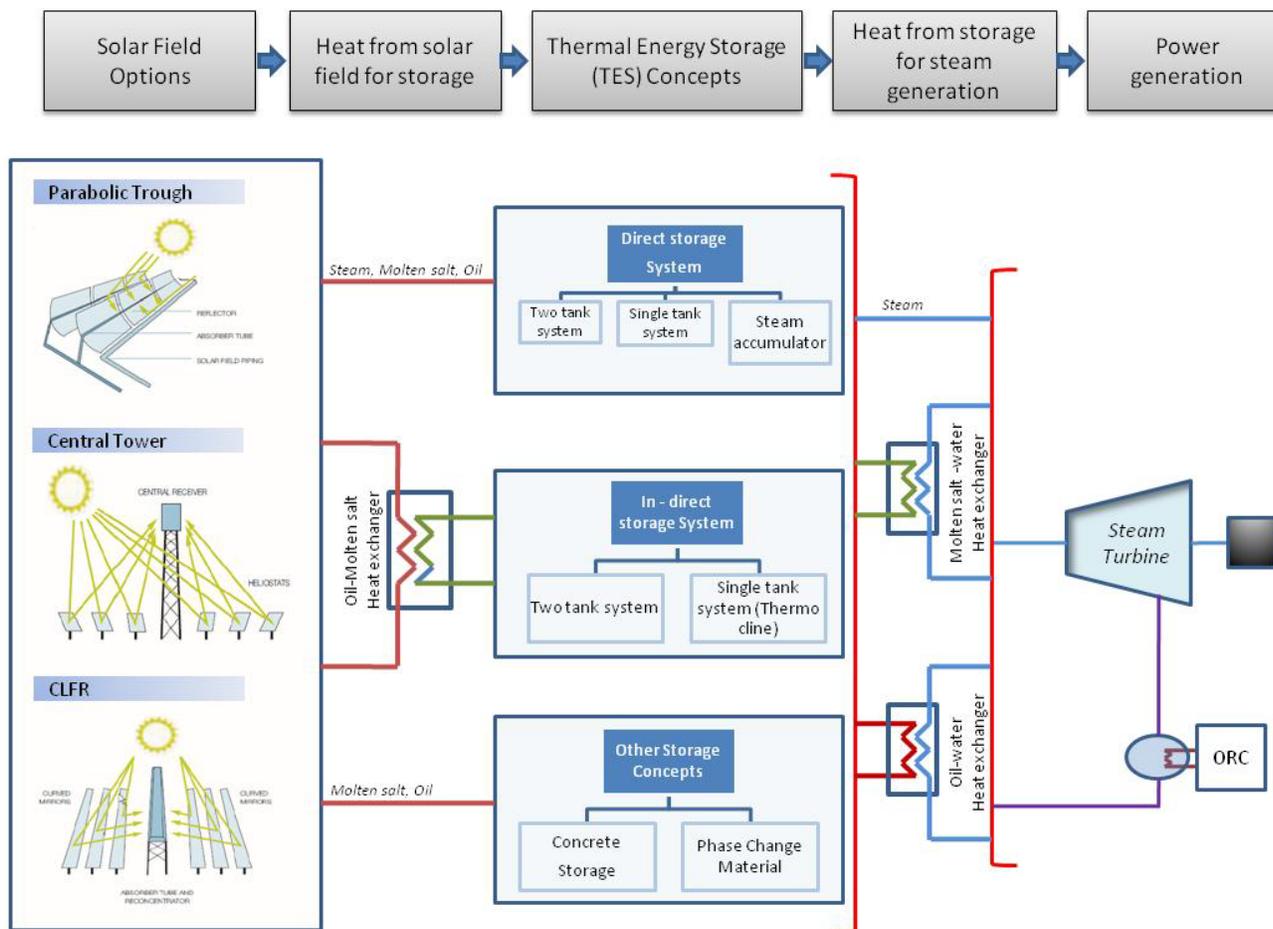


Figure 1. Schematic of Solar Thermal/CSP Experimental Plant

The experimental plant will be designed for continuous power generation in as small a size as is feasible (typically KWe range) through steam using a turbine. Steam will be generated from the heat collected by the solar fields (direct or through thermal storage).

Scalability issues pertaining to the best combination of CSP technologies, storage concepts & materials shall also be kept under consideration so that the next stage of this project of achieving LCOE on continuous basis in a MWe level plant can be judiciously taken up.

SOLAR COLLECTOR FIELD

Solar field of following collector technologies, with same capacity of thermal output will be set up as part of the proposed experimental plant:

1. Parabolic Trough
2. Tower
3. CLFR
4. Any other innovative solar thermal/CSP technology....

Solar collector fields shall be designed with capability of operating with different heat transfer fluids (i.e. steam, oil, molten salt). All the solar collector fields will also be used for evaluation and developmental research of different components in solar fields, such as:

- Collector supporting structure (foundations, frame)
- Optical testing of reflectors (heliostats/mirrors/reflective surfaces)
- Testing of receivers (evacuated tubes, pipes, cavities)
- Testing of HTF (oils, molten salts, water, air, CO₂, etc)
- Tracking systems (single axis, dual axis)
- Provision for testing of new collector designs

THERMAL ENERGY STORAGE SYSTEM

The proposed experimental plant shall be capable of testing of different thermal energy storage systems/concepts, as given in Table 1.

Table 1: Thermal Energy Storage Concepts

HTF	TES Media	Storage System
Steam	Steam	Single tank
Oil	Oil	Two tank and single tank
Oil	Molten salt	Two tank and single tank
Molten salt	Molten salt	Two tank and single tank
Steam	Phase change material (PCM)	-
Oil	Phase change material (PCM)	-
Molten salt	Phase change material (PCM)	-
Steam	Concrete	-
Oil	Concrete	-
Molten salt	Concrete	-
Steam	Metal Block	-
Oil	Metal Block	-
Molten salt	Metal Block	-

These thermal storage systems will have capability of easy integration with different collector fields. These thermal storage systems will have following test facilities:

- Testing of TES media (oil, molten salt, PCM, concrete etc.)
- Testing of different storage concepts (direct and indirect storage)
- Testing of storage tanks (steam accumulator, two tank, thermocline)
- Testing heat transfer and heat losses in the storage

BALANCE OF PLANT

Balance of plant will have following test facilities:

- Testing of heat exchangers
- Testing of direct steam generation
- Analyze flow rates, temperature and steam quality

Section – 4**PRICE FORMAT**

S. No	Description	Currency	Amount
1	Manpower cost		
2	Fixed cost		
3	Travel cost per trip		
4	Boarding & lodging cost per day		
4	Miscellaneous / any other cost (please specify)		
Total			

Please indicate the rate and amount of Taxes / Levies etc if any.

Note:

- Please read clause 10.0 carefully and quote accordingly
- The cost heads indicated above are directional and vendor is free to include any other cost also
- The stage wise payment can be released in following proportion (percentage of total amount excluding travel cost which shall be based on actual travel documents):

Stage 1	Kick-off meeting between the Owner & the Consultant	10%
Stage 2	Best practice analysis report at the time of kick-off meeting	
Stage 3	Concept review and feasibility assessment	5%
Stage 4	Design and Technical Specifications	10%
Stage 5	Suggested suppliers/manufacturers, cost estimates, installation & commissioning layout with details, timelines etc.	15%
Stage 6	Holding an interaction meeting/workshop by the Consultant at Owner's (IIT Jodhpur, Jodhpur, Rajasthan, India) premises and then submitting the final copy of the detailed project report	20%
Stage 7	Acceptance of the DPR	40%
	Total payment	100%

- An advance payment (10% maximum) can be made to the Consultant, subject to deposit of irrevocable bank guarantee of equal amount by the Consultant. The entire amount of advance (10% of consultancy fees) shall be adjusted against payment of fees at the next stage.
- Security and performance guarantee money shall be retained @ 10% of the total cost for a period of 12 months of the performance run stage.
- As mentioned in clauses 5 & 6 of this document, the proposed project is required to be carried out up to preparation of Detailed Project Report in line with stage 1 to 7 of the above table.

d) Curriculum Vitae (CV) for Proposed Professional Staff

1. **Proposed Position:** _____

2. **Name of Staff** [*Insert full name*]: _____

3. **Date of Birth:** _____ **Nationality:** _____

4. **Education** [*Indicate college/university and other specialized education of staff member, giving names of institutions, degrees obtained, and dates of obtainment*]: _____

5. **Membership of Professional Associations:** _____

6. **Other Training** [*Indicate significant training since degrees under 4 - Education were obtained*]: _____

7. **Countries of Work Experience:** [*List countries where staff has worked in the last ten years*]: _____

8. **Languages** [*For each language indicate proficiency: good, fair, or poor in speaking, reading, and writing*]: _____

9. Employment Record *[Starting with present position, list in reverse order every employment held by staff member since graduation, giving for each employment (see format here below): dates of employment, name of employing organization, positions held.]*:

From [Year]: To [Year]:

Employer:

Positions held:

<p>10. Detailed Tasks Assigned <i>[List all tasks to be performed under this assignment]</i></p>	<p>12. Work Undertaken that Best Illustrates Capability to Handle the Tasks Assigned</p> <p>Name of assignment or project: _____</p> <p>Year: _____</p> <p>Location: _____</p> <p>Client: _____</p> <p>Main project features: _____</p> <p>Positions held: _____</p> <p>Activities performed: _____</p>
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13. Certification:

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes me, my qualifications, and my experience. I understand that any wilful misstatement described herein may lead to my disqualification or dismissal, if engaged.

_____ Date: _____

[Signature of staff member or authorized representative of the staff] Day/Month/Year

Full name of authorized representative: _____

Section - 6

Questions to Bidder

Answers may be made in separate attached sheet/s (as required)

S. No	Questions	<u>Bidder`s Response</u>	<u>Comments/ Observations</u>
1	Registration number and professional certificate details for consulting in CSP Technology?		
2	Is the entity certified by ISO?		
3	Organization chart with photographs of constituent team members, Contact details, provided?		
4	What was the rating of the first experimental CSP plant and location? Can you please provide a write up on its commissioning and subsequent Operational Experiences?		
5	What is the expertise of all the associates in CSP?		
6	Tax Registration & Bank account number?		
7	Has supporting documents duly notarized, for the Qualifying Criteria as per Section-1 submitted?		
8	Have a MOU with Leader and all associates, duly signed, notarized, and submitted?		
9	Has a Scope & Exclusion matrix of each associate attached with the MOU?		
10	Has a Non Disclosure statement for keeping all the information confidential between the Bidder and Employer from bid opening to award, submitted? Bidder may choose the format suitably		

	from their side.		
11	What was the rating/ capacity of the last experimental CSP plant and location? Plot area optimized and Energy generation made possible? Can you please provide a write up on its commissioning and subsequent Operational Experiences?		
12	Sequel to above question what was the difference (if any) between DNI-Electrical Energy (KWh, Output) Estimate Vs the Actual Energy(KWh recorded) in the TriVector Energy Meter?		
13	We propose an Internet based accurate TriVector Meter to be installed in this proposed system such that the energy delivered status day, monthly, per annum		
14	Are you willing to show still photographs and Video Walk through of the experimental CSP plant/s accomplished by you , while presenting your technical proposal and then submit the above in Non writable(Read Only) DVD? Date, Time & year stamp records must appear in the video walk through by the Camcorder.		
15	Is your technical offer is as per this tender document or there is any alternative suggested?		
16	What is your experience in scaling up capacities from Prototypes to Higher MW scale CSPs? Can we have a write up on this please?		
17	What is your expert opinion on the accuracies obtained from the Optical systems of the Weather		

	tracking Satellites and global weather data repositories vs. actual measuring & monitoring on ground for ascertaining the DNI? How the energy generation of the proposed installation will get validated? On what basis?		
18	What is your recommendation for determining the DNI by on line measurement and its record to a data acquisition system in real time at the outdoor location of the experimental CSP?		
19	What are all field instruments, their accuracies, and calibration methods as per global standard/s?		
20	Is a PyroHeliometer with tracking facility recommended to ascertain the DNI records at place of installation? Pyranometer/s to which accuracies are desired?		
21	If tracker/s is/are used for the Pyroheliometer & pyranometers then what is the tracking `Software` to be used and its correlation with solar field equipments ? Can you please elaborate on the accuracy (least count `of degree/radian (angular resolution) of all the tracked items and how the Irradiance is captured for maximization of Steam Temperature/s ?What is the accuracy of the controlling drive motors/hydraulic/pneumatics in positioning ? Is digital encoder being used as Feedback to control the stated accuracy?		
22	Occasional `Hail storm`(Ice-balls falling with rain) is expected in		

	Tropical climate of India. What is the Tested maximum Impact resistance strength of the glass based components of the Solar field?		
23	Dust particulate accumulation on Solar field equipments are naturally expected throughout the year. What is your recommendation for a practical & cost efficient de-dusting & cleaning method? Do you advise installing a Dust particulate measurement system which provide warnings in the Data Acquisition Computer of the installation?		
24	Are the Solar field equipments, fixed ground mount type or to be provided with applicable Two axis trackers?		
25	If trackers are to be considered what is the recommendation for its control software? How is it the best software to control the solar field equipments such as to get the maximum energy output?		
26	For Experimental evaluation (Solar Energy gathered) between Non Tracking & Tracking configurations of the Solar field equipments, can the Trackers be stopped from the control system of the CSP, duly programmable from the control computer ?		
27	Can you please provide the write up on the Overall control system proposed for the Plant and typical Screen Shots obtained from the display of the control computer, of your earlier installations?		

28	Can you please submit an Overall Block Diagram of the Mechanical system, mentioning Rated Capacities, Rated max temperatures, Energy contents at designated nodes of each critical Mechanical block?		
29	Can you please provide the Electrical Single Line Diagram (SLD) of the complete system, including auxiliaries proposed ?		
30	Can you please provide the List of Instruments proposed in a Single line diagram with measuring principles, quantities required, Range, Accuracies, Compliant Technical standards, Calibration Standards, Independent Calibrating agencies (Quality & Accuracies concerned in providing accurate Field measurements), What are the global bench marked tests& calibration technical standards and the necessary Test &Calibrating equipments desired to be kept at the proposed installation?		
31	Can you please provide Piping & Thermal Insulation System/s for the complete offered system?		
32	Have you provided a) Overall Quality Assurance Plan up to Component levels ,b) Inspection & Test Schedules ,c) Criteria for Acceptance/Rejections ?		
33	Have you provided all the details as per Clause 6.0(Deliverables) of this Tender document?		
34	For Manufacturing items in India,(e.g) Support frames for the Parabolic space frame structures including its groutable		

	supports to ground, Support structures of Linear Fresnel mirrors, Heliostats support, Power Tower support structures and any other equipments that you do propose ?		
35	As per our understanding The Glass tubes and Mirrors are generally fabricated and assembled at Site for cost reduction and avoid handling damages intrinsic to Glass items .What are you recommendations on Local Fabrication and reduction of damages if shipped and handled up to the installation site ?What are the supporting facilitations and equipments to be used at Installation site ?		
36	What is your recommendations on the Thermal storage systems and how long (Hours) the Thermal storage is possible to generate Electrical energy at Night/ after the sunset/ encounter of Clouds over the installed Solar field equipments?		