Chhattisgarh State Renewable Energy Development Agency (CREDA)

(Dept. of Energy, Govt. of Chhattisgarh)

Near Energy Education Park, Village Fundhar
VIP Road (Air Port Road) Raipur (Chhattisgarh)
E-mail: contact.creda@gov.in

BID DOCUMENT No-1966/GCSRT_1-500kWp/CAPEX/2019-20/Raipur, Date:06.06.2020

RFX No.-8100017744

Tender Schedule For Empanelment of Vendors for Design, Supply, Installation, Testing & Commissioning including obligated Warranty and Comprehensive Maintenance of 1kwp to 500 kwp under Grid Connected Rooftop Photo Voltaic Solar Power Plant Programme of MNRE Phase-II for all the willing consumers excluding Government connections in Chhattisgarh State through rate contract programme under CAPEX Mode.

PARTICULARS	Date	Time (Hrs.)
Purchase of RFP Start Date	06.06.2020	05:00 PM
Online Pre- Bid Meeting	17.06.2020	03:00 PM
Purchase of RFP End Date	30.06.2020	05:00 PM
Financial Bid Submission End Date	01.07.2020	03:30 PM
Mandatory Submission Hard Copy of Bid (except Financial Bid)	01.07.2020	11:00 AM to 03:00 PM
Technical Bid Opening Date	01.07.2020	03:30 PM onward
Financial Bid Opening Date	08.07.2020	03:00 PM

Bid Processing Fee (non- refundable): Rs. 29,500.00 (Including 18% GST)
(In words: Rupees Twenty nine thousand five hundred only)

Document can also be downloaded from our website www.creda.co.in with the cost of tender as mentioned in NIT, which shall have to be deposited along with the tender document.

CHATTISGARH STATE RENEWABLE ENERGY DEVELOPMENT AGENCY

CONTENTS

Chhattisgarh State Renewable Energy Development Agency (CREDA)

Airport (VIP Road) Near Energy Educational Park
P.O. Devpuri, Raipur (C.G.)

No:1966/GCSRT_1-500kWp/CAPEX/2019-20/Raipur, Date-06.06.2020

NOTICE INVITING TENDER

Sealed tenders/bids are hereby invited from interested and eligible bidders for “Empanelment of Vendors for Design, Supply, Installation, Testing & Commissioning Including obligated Warranty and Comprehensive Maintenance of 1kwp to 500kwp under Grid Connected Rooftop Photo Voltaic Solar Power Plant Programme of MNRE Phase-II for all the willing consumers excluding Government connections in Chhattisgarh State through rate contract programme under CAPEX Mode".

RFx No:8100017744

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Bid Processing Fee (non- refundable): Rs. 29,500.00 (Including 18% GST)
(In words: Rupees Twenty nine thousand five hundred only)
For further details, please visit website: https://creda.co.in

Price Bid shall be submitted online only at http://www.cspc.co.in, however Technical bid will have to be submitted in hard copy at Chief Engineer (RE – II) Section, Near Energy Education Park VIP Road, Raipur. Bidders are advised to follow the instructions provided for Registration and e-Submission Process accordingly. (For any query about e-bidding please visit user manual at http://www.cspc.co.in,)

Chief Engineer
RE-II CREDA, Raipur

INVITATION FOR BIDS (IFB)

SECTION – I
INVITATION FOR BIDS (IFB)

1. **OVERVIEW OF THE TENDER/BID: -**: Empanelment of Vendors for Design, Supply, Installation, Testing & Commissioning including 05 year Comprehensive Warranty for complete installed plant and further 20 years extended warranty for solar PV module and Comprehensive Maintenance/CMC for 05 years of 1kwp to 500kwp Grid Connected Rooftop Solar Photo Voltaic System for all the willing consumers excluding Government connections in Chhattisgarh State through Rate Contract Programme Under CAPEX Mode.

   Bid Document No:1966/GCSRT-1-500kWp/CAPEX/2019-20/ Raipur, Date:06.06.2020

2. **Background:** MNRE vide office memorandum no. 318/331/2017-Grid Connected Rooftop New Delhi dtd.20.08.2019 has issued Operational Guidelines for installation of Grid–connected Solar Rooftop Photo Voltaic Power Plants under "Phase-II – Grid-connected Rooftop Solar Programme".

The Chhattisgarh State Electricity Regulatory Commission (CSERC) has notified regulations Chhattisgarh State Electricity Regulatory Commission (Grid Interactive Distributed Renewable Energy Sources) Regulations, 2019 for promotion of Grid connected Solar Rooftop Photo Voltaic systems with net metering benefits to the consumers. The following are the provisions for promotion of grid connected solar rooftop.

- The Government will promote solar rooftop systems on public buildings, domestic, commercial and industrial establishments.
- The consumers can avail net metering benefits.
- Time bound clearance of proposals through online mode.

3. The Guidelines also provisioned that the DISCOM may use the services of State Nodal Agency's (SNAs) already engaged in promotion of Renewable Energy. Therefore Chhattisgarh State Power Distribution Company limited (CSPDCL) has authorised Chhattisgarh State Renewable Energy Development Agency (CREDA) for implementation of Rooftop Projects under MNRE's Subsidy Programme. CREDA is inviting sealed tenders/bids from interested bidders for design, supply, installation, testing & commissioning including 05 year Comprehensive Warranty for complete installed plant and further 20 years extended warranty for solar PV module and comprehensive maintenance/CMC for 05 years of 1kwp to 500kwp Grid connected rooftop solar system for all the willing consumers excluding Government connections in the Chhattisgarh State through rate contract programme under CAPEX mode.

4. Any amendment(s)/ corrigendum/clarification(s) with respect to this Tender shall be uploaded on the CREDA website. The bidders should keep themselves updated by regularly visiting the CREDA website for any amendment/ corrigendum/ clarification in regard to this Tender.

5. **SELECTION OF TECHNOLOGY & ELIGIBLE PROJECTS UNDER THIS TENDER BID**

   i. The projects to be selected under this bid are of 1-500KWp Solar Photo Voltaic Projects installed for all the willing consumers except Government connections in Chhattisgarh State. However, the selection of solar photovoltaic based Rooftop projects would be technology agnostic within the technology mentioned in the relevant MNRE guidelines. Only commercially established and operational technologies can be used, to minimize the technology risk and to achieve the timely commissioning of the Projects.

   ii. The solar photovoltaic based Rooftop projects proponents to adhere to the national/ international standards specified by MNRE from time to time. Only indigenously manufactured Solar Photo Voltaic panels (both cells and modules) shall be used for projects to be installed in residential projects and willing to avail subsidy.

   iii. Grid interactive Rooftop Photo Voltaic power plants, inverters, meters, cables, mounting structures and other balance of systems etc. shall have to fulfil the technical requirements and quality control standards as prescribed in relevant MNRE's guidelines, Chhattisgarh State Electricity Regulatory Commission (Grid Interactive Distributed Renewable Energy Sources) Regulations, 2019, CEA regulations, 2006 and its amendments issued time to time along with CSPDCL' directives in this regard.

iv. The mechanical structures, electrical works including power conditioners/inverters/charge controllers/ maximum power point tracker units/distribution boards/digital meters/switch gear/net-meters etc. and over all workmanship of the RTS plants/ systems must be warranted against any manufacturing/ design/ installation defects for a minimum period of 25 years. Fulfilment of the warranty obligations of the complete solar system shall rest with System integrator/Supplier vendor who in turn may claim the same from the component manufacturers.

v. The Rooftop Solar Photovoltaic modules shall be warranted for 25 years. The complete Grid connected Rooftop Photo Voltaic systems would be warranted by the empanelled vendor for 05 years, from the date of commissioning of the Project.

vi. CREDA reserves the right to cancel /withdraw this invitation for bids without assigning any reason and shall bear no liability whatsoever consequent upon such a decision.

CONDITION:

1. CREDA is inviting sealed tenders/bids for Empanelment of parties for design, supply, installation, testing, commissioning including 05 year Comprehensive Warranty for complete installed plant and further 20 years extended warranty for solar PV module and comprehensive maintenance/CMC for five years of Grid connected Rooftop Solar Photovoltaic Power Plants in Chhattisgarh.
2. CSPDCL will display the lowest rates of the successful bidder(s) /empanelled vendor(s) for setting up of Rooftop Solar Photo Voltaic power system in the state on its Rooftop Solar web portal. The empanelled agencies are to contact & get their work for private clients directly at their own.
3. The interested bidders may download detailed tender documents from CREDA official website.
4. All bids submitted by bidders must be accompanied with necessary Bid document fee & Earnest Money (EMD) in the forms prescribed in this tender documents.
5. The Blacklisted and debarred individual/firm/agencies/organisation/Company/Joint venture, anyone or both partners of two firms/agencies/companies by CREDA/State Govt./Central Govt./State PSU/Central PSU/SEB/Power Utility/State Nodal Agency/any other Govt./Semi Govt. organization shall not be eligible for participation in the tender.
6. The bid should be kept valid for at least 180 days from the date of opening of tenders.
7. Telegraphic or conditional quotations will not be accepted.
8. CREDA reserves the right to nullify the tender without assigning any reason.
9. In case the due date of submission and opening of bid happens to be a holiday, bids shall be received and opened at the same time on the next working day.
10. Before submitting the tender, bidders are requested to read the specifications carefully and take cognizance of corrigendum/amendments uploaded on CREDA website, so that their offer may not be rejected on account of amendments/revisions in the earlier specifications (if any).
11. Corrigendum, if any, after the publication of this tender enquiry shall only be uploaded on CREDA website and will not be published in any newspaper.
12. The whole tender should be properly page numbered (by print/typed) with index showing all the contents of the tender documents.
13. Every bidder has to inform their GSTIN No. at the time of submission of Bid document fee/bid.
14. The successful bidder shall have to follow all the instructions as per provisions stipulated in Indian Electricity Grid code, relevant regulations and its amendment issued time to time for Grid Connected Rooftop Solar Photo Voltaic System in Chhattisgarh State.
15. Any change/addition/declaration/modification in any terms & Conditions of this tender finalised after pre-bid meeting will become the part of this tender and will be binding on the participant bidders/firms/contractors.

PRE-BID:- **Online PRE-BID for this tender shall be held on 17.06.2020 (details will be intimated later).**

DISCLAMIER:

The information contained in this Request for Proposal document (hereafter referred to as "RFP") or subsequently provided to Applicant(s), whether verbally or in documentary or any other form, by or on behalf of the Company or any of its employees or advisors, is provided to Applicant(s) on the terms and conditions set out in this RFP and such other terms and conditions subject to which such information is provided.

This RFP is not an agreement and is neither an offer nor an invitation by the Company to the prospective Applicants/Bidders or any other person. The purpose of this RFP is to provide interested parties/Bidders with information that may be useful to them in the formulation of their application/Bid for qualification. The selection thus made will be in pursuant to this RFP. This RFP includes statements, which reflect various assumptions and assessments arrived at by the Company in relation to the Projects. Such assumptions, assessments, and statements do not purport to contain all the information that each applicant/Bidder may require. This RFP may not be appropriate for all persons, and it is not possible for the Company, its employees or advisors to consider the objectives, financial situation and particular needs of each party who reads or uses this RfP. The assumptions, assessments, statements, and information contained in this RFP may not be complete, accurate, adequate, or correct. Each Applicant should, therefore, conduct its investigations and analysis and should check the accuracy, adequacy, correctness, reliability, and completeness of the assumptions, assessments, statements, and information contained in this RFP and obtain independent advice from appropriate sources.

Information provided in this RFP to the Applicant(s)/Bidder(s) is on a wide range of matters, some of which may depend upon the interpretation of the law. The information given is not intended to be an exhaustive account of statutory requirements and should not be regarded as a complete or authoritative statement of law. The Company accepts no responsibility for the accuracy or otherwise for any interpretation or opinion on the law expressed herein.

CREDA, its employees and advisors make no representation or warranty and shall have no liability to any person, including any Applicant or Bidder, under any law, statute, rules or regulations or tort, principles of restitution or unjust enrichment or otherwise for any loss, damages, cost or expense which may arise from or be incurred or suffered on account of anything contained in this RFP or otherwise, including the accuracy, adequacy, correctness, completeness or reliability of the RFP and any assessment, assumption, statement or information contained therein or deemed to form part of this RFP or arising in any way with selection of Applicants for participation in the Bidding Process.

The Company also accepts no liability of any nature, whether resulting from negligence or otherwise howsoever caused arising from a reliance of any applicant upon the statements contained in this RFP.

The Company may, in its absolute discretion but without being under any obligation to do so, update, amend, or supplement the information, assessment, or assumptions contained in this RFP. The issue of this RFP does not imply that the Company is bound to select and shortlist Applications, and the Company reserves the right to reject all or any of the Applications or Bids without assigning any reasons whatsoever.

The applicant/Bidder shall bear all its costs associated with or relating to the preparation and submission of its application/Bid including but not limited to preparation, copying, postage, delivery fees, expenses associated with any demonstrations or presentations which may be required by the Company or any other costs incurred in connection with or relating to its application. All such costs and expenses will remain with the applicant, and the Company shall not be liable in any manner whatsoever for the same or any other expenses incurred by an Applicant in preparation or submission of the Application, regardless of the conduct or outcome of the Bidding Process.

Though adequate care has been taken while preparing the Tender document, the Bidders shall satisfy themselves that the document is complete in all respect. Intimation regarding any discrepancy shall be given to his office immediately. If no intimation is received from any Bidder within Ten (10) days from the date of notification of Tender Notice/issuance of e-Tender documents, it shall be considered that the document is complete in all respect and has been received/acknowledged by the Bidder(s).

Definitions:

In the "Bid / Tender / Contract Document" as herein defined where the context so admits, the following words and expression will have the following meaning:

1. "Affiliate" shall mean a company that either directly or indirectly

a. controls or

b. is controlled by or

c. is under common control with

A Bidding Company (in the case of a single company) and "control" means ownership by one company.

2. "Approved Rate" shall be that rate /capital cost requirement per KWp which are discovered & finalized by CREDA separately for each capacity range, after opening of Financial bids of qualified bidders for each range towards work for the capital cost for Design, Supply, Installation, testing and commissioning of grid connected rooftop solar photovoltaic system including its CMC for 05 years in Chhattisgarh State.

3. "B.I.S" shall mean specifications of Bureau of Indian Standards (BIS);

4. "Bid / Tender" shall mean the Techno-Commercial and the Price/Financial Bid submitted by the Bidder along with all documents/credentials/attachments, formats, etc., in response to this tender in accordance with the terms and conditions hereof.

5. "Bidder/Tenderer" shall mean an individual/firm/agencies/organisation/Company/Joint venture of two firms/agencies/companies including its successor, executors and permitted assigns jointly and severally, as the context may require, submitting the Bid in accordance with the provisions of this Bid.

6. Bid Deadline" shall mean the last date and time for submission of Bid in response to this bid as specified in Bid Information Sheet and as specified in ITB of this Bid document including all amendments thereto;

7. "Bid Document" shall mean all Definitions, Sections, Layouts, Drawings, Photographs, Formats etc. as provided in this bid including all the terms and conditions hereof.

8. "CAPEX" shall mean Capital Expenditure.

9. "Chartered Accountant" shall mean a person practicing in India or a firm whereof all the partners practicing in India as a Chartered Accountant(s) within the meaning of the Chartered Accountants Act, 1949. Register with the Institute of Chartered Accountants of India (ICAI) having Unique Document Identification Number (UDIN).

10. "Competent Authority'' shall mean CEO, CREDA himself and/or a person or group of persons nominated by CEO, CREDA for the mentioned purpose herein;

11. "Firm/Agencies/Organisation/Company" shall mean a body incorporated in India under the Companies Act, 2013;

12. "Completion of Work" means that the project/work for Design, Supply, and Installation of Grid Connected Rooftop Solar Photovoltaic system have been completed operationally and structurally has been attained for the purpose of carrying out performance test(s) as per Technical Specifications specified in this tender.

13. "Commissioning"(COD) means Successful operation of Grid Connected Rooftop Solar Photovoltaic system after synchronisation with the Grid.

14. "Consents, Clearances and Permits" shall mean all authorizations, licenses, approvals, registrations, permits, waivers, privileges, acknowledgements, agreements, or concessions required to be obtained from or provided by any concerned authority for the purpose of installation of the generation plant or captive consumption of such generation;

15. "Bid Document" shall mean collectively the Bid Document, Design, Drawings, and Specifications, agreed variations, if any, and such other documents consisting the bid and acceptance thereof;

16. "CMC" means Comprehensive Maintenance Contract (CMC) including operation and maintenance for 05 years from the date of COD of installed Rooftop Solar Photo Voltaic system.

17. “Day” means calendar day;

18. “Defect Liability Period” means the period of validity of the warranties given by the Contractor (commencing at Completion of the Project/Works), during which the Contractor is responsible for defects with respect to the Project/Works.

19. “EMD” shall mean the Earnest Money Deposit to be submitted in the desired form mentioned in the ITB along with the Bid by the Bidder under ITB Clause of this Bid;

20. “Employer” or “CREDA” shall mean Chhattisgarh State Renewable Energy Development Agency.

21. “Eligibility Criteria” shall mean the Eligibility Criteria as set forth in Section III: Techno-Commercial Conditions of this tender.

22. “Effective Date” means the date of COD of the installed Rooftop Solar Photo Voltaic system shall be determined;

23. “GCC” means the General Conditions of Contract contained in this tender;

24. "Goods" means permanent plant, equipment, machinery, apparatus, articles and things of all kinds to be provided and incorporated in the Works by the Contractor under the Contract but does not include Contractor’s Equipment.

25. “Guarantee Test(s)” means the test(s) to be carried out to ascertain whether the installed Rooftop Solar Photo Voltaic system is able to attain the functional requirements as per Technical Specifications specified in this tender.

26. "IEC" shall mean specifications of International Electro-Technical Commission;

27. “IFB” Shall mean Information for Bidder.

28. “ITB” shall mean Instructions to Bidder.

29. “MNRE” shall mean Ministry of New & Renewable Energy.

30. “NIT” Shall means Notice Inviting Tender.

31. “Parent Company” shall mean a company that holds paid-up equity capital directly or indirectly in the Bidding Company, as the case may be;

32. “Price/Financial Bid” shall mean Bidder’s Quoted price submitted online on CSPDCL e-tendering portal as per the format-viii prescribed in this bid.

33. “Project/RTS plant/power plant/plant” shall mean “Grid connected rooftop solar photovoltaic system”.

34. “Prosumer” or “Consumer” shall mean all the consumers of CSPDCL viz. residential, industrial, commercial etc. in Chhattisgarh State having Single phase/ Three phase LT connections and HT connections excluding government connection of supply of Electricity and who have applied online through CSPDCL’s Unified Solar Rooftop web portal and fulfilling other stipulated conditions for installation of Rooftop Solar Photo Voltaic system up to their sanctioned load.

35. “Qualified Bidder” shall mean the Bidder(s) who, after evaluation of their Techno-Commercial Bid as per Eligibility Criteria set forth in Techno-Commercial Conditions of this tender and stand qualified for opening and evaluation of their Price/Financial Bid;

36. “Quoted Rate” shall mean the capital cost requirement per KWp quoted by the bidder for respective capacity range (inclusive of all statutory compliances like PF, ESI, Services Tax, GST, etc) in accordance with the prescribed format-viii and shall be construed to have considered the capital cost for Design, Supply, Installation, testing and commissioning of grid connected rooftop solar photovoltaic system including 05 year Comprehensive Warranty for complete installed plant and further 20 years extended warranty for solar PV module & CMC for five (05) years. The quoted rate shall also include development of necessary evacuation infrastructure and its operation and maintenance.

37. “RC” shall mean Rate Contract.

38. “SNA” shall mean State Nodal Agency.

39. “Statutory Auditor” shall mean the auditor of a Company appointed under the provisions of the Companies Act, 2013 or under the provisions of any other applicable governing law;

40. “Services” means those entire services ancillaries to the supply of the products, to be provided by the Contractor required for completion of work; e.g. transportation (including loading, unloading and transfer to Site) and provision of marine or other similar insurance, inspection, expediting, carrying out guarantee tests, operations, maintenance etc.

41. “Successful Bidder(s) / Contractor(s)/Empanelled Vendor” shall mean the Bidder(s) working as solar power developer selected or empanelled by Employer who are agreed to execute the grid connected solar photovoltaic based RTS project in consumer’s premises at rate contract basis on approved rates applicable for such project pursuant to this Bid.

42. “Standards” shall mean the standards mentioned in the technical specification of the goods and equipment utilized for the Work or such other standard which ensure equal or higher quality and such standards shall be latest issued by the MNRE.

43. “Work” means the “Goods” to be supplied, as well as all the “services” to be carried out which is required for completion of work;

INTERPRETATIONS:

1. Words comprising the singular shall include the plural & vice versa.

2. An applicable law shall be construed as reference to such applicable law including its amendments or re-enactments from time to time.

3. A time of day shall save as otherwise provided in any document be construed as a reference to Indian Standard Time.

4. Different parts of this tender are to be taken as mutually explanatory and supplementary to each other and if there is any differentiation between or among the parts of this tender, they shall be interpreted in a harmonious manner so as to give effect to each part.

5. The table of contents and any headings or sub headings in the tender has been inserted for reference and shall be limited to this tender only.

INSTRUCTIONS TO THE BIDDER (ITB)
AND GENERAL CONDITIONS

BANK DETAILS OF CREDA

A. Details of Beneficiary/ Account Holder

Name of Beneficiary	Chhattisgarh State Renewable Energy Development Agency (CREDA)
Address	Near Energy educational Park, VIP Road (Airport Road), Raipur
Contact Number	Tel.: 8370008630

B. Bank Details

Bank Name	ICICI Bank
Branch Address	Pachpedi Naka, Raipur
Beneficiary Account No.	134601000400
Beneficiary Account Name	C G ST Renewable Energy Dev. Agency (CREDA)
Type of Bank Account	Saving
MICR Code of the Bank	492229006
IFSC Code of the Bank	ICIC0001346

C. Nodal Person for enquiries and clarifications

All correspondence, clarifications in respect of the Bid document and submission of the Bid shall be addressed to:

Designation	CE (RE-II), CREDA
Address	CREDA, Near Energy Education Park, Village Fundhar VIP Road (Air Port Road) Raipur (Chhattisgarh)
Telephone	+91-9826137734 and/or +91-8770580522
E-mail	contact.creda@gov.in

SECTION – II

Instructions to the Bidder (ITB) and General Conditions

2.0 INTRODUCTION:

MNRE has issued operational guidelines for installation of Grid–connected Rooftop Solar Photo Voltaic system under “Phase-II–Grid-connected Rooftop Solar Programme”. The generated solar power maybe utilized for captive application and the surplus power may be fed to the grid as per the grid connectivity specified in relevant CSERC Regulations, 2019.

CREDA issues this tender to discover the rate of Grid–connected Rooftop Solar Photo Voltaic system for various capacity Ranges and for Empanelment of successful bidders for the implementation of Grid connected Solar Rooftop system under the CAPEX Models for one Year from the date of finalization.

Availability of Central Financial Assistance (CFA)

Type of Residential sector	CFA (as percentage of benchmark cost or cost discovered through competitive process, whichever is lower)
Residential sector (maximum up to 3kW capacity)	40%**
Residential sector (above to 3kW capacity and upto 10 kW capacity) *	40% upto 3KW** Plus 20% for Grid–connected Rooftop Solar Photo Voltaic system above 3 kW and upto 10 kW. No CFA beyond 10 KW CFA@20% for GHS/RWA capacity up to 500 KW (limited to 10KW per house and total up to 500KW)

*The Residential sector users may install RTS plant of even higher capacity as provisional by respective State Electricity Regulations; however, the CFA will be limited up to 10Kwp capacity of RTS plant.

** CFA shall be on benchmark cost of MNRE or lower cost discovered through the tender, whichever is lower

a) The lowest rate (i.e. L-1) for each capacity range received (and in turn approved by the competent authority) would be considered as "Lowest Rate" for that capacity range. If required, CREDA reserves the right to negotiate with Lowest Rate (L-1) bidder before finalization the “Approved rate” for each capacity range category.

b) "Approved Rate" for each capacity range would be offered to other bidders (i.e. L-2, L-3 and so on) whose rates are within L1+20% (i.e. 20% above the approved lowest rates) to work on lowest approved rates. Further, if total number of empanelled bidders are found to be less than 5 in a capacity range, then CREDA may also include those agencies who fall in L1+25% (i.e. 25% above the firms/bidders/falling outside the above specified range i.e. 20% or 25% as the case may be, of the L1 rates will be considered.

c) All successful bidder(s) have to get there work directly from prosumers.

d) The successful bidder(s) will give useful training to the prosumers.

e) CREDA reserves the right to accept any bid and to reject any or all of the bids without assigning reasons thereof.

2.1 BID INFORMATION SHEET

Notice Inviting Tender	No.1966 GCSRT_1-500kWp/CAPEX/2019-20/ Raipur, Date:06.06.2020
Bid Document fee (Non-refundable)	Rs.29,500/-incl.18% GST in the form of DD only
EMD / Bid security Deposit	Rs.2,00,000.00 (Two lakhs) in the form of DD only
Bid Document if Purchased from CREDA	Upto 30.06.2020 during official days and hours
Bid Document Downloading End Date	30.06.2020 till 05:00 PM
Last date for submission of Techno-commercial Bid proposals complete in all respects to	01.07.2020 Till 03:00 PM at **CE (Grid Connected Section, RE-II)** Chhattisgarh State Renewable Energy Development Agency, **(CREDA),** VIP (Airport) Road, Near Energy Education Park, P.O.Deopuri, Raipur-492015, Chhattisgarh, India
Pre-Bid Meeting (on-line)	17.06.2020 on 03:00 PM
Last date for submission of Online "Price/Financial Bid"	01.07.2020 till 03:30 PM
Techno-Commercial Bid opening date/time Tender/Bid Validity Period of Empanelment and Rate Contract	01.07.2020 at 03:30 PM 180 days from the date of Opening of tender/Bid. **Valid for one Year from the date of empanelment**
Contact person	Chief Engineer (**Grid Connected, RE-II**),CREDA, Raipur
Techno-Commercial Bid to be addressed to	**CE (Grid Connected, RE-II)** Chhattisgarh State Renewable Energy Development Agency, **(CREDA),** VIP (Airport) Road, Near Energy Education Park P.O.Deopuri, Raipur-492015, Chhattisgarh, India **Tel.: 83700 09923** E-mail: contact.creda@gov.in Web: www.creda.co.in

Important Note:

(i) The tender document is available on CREDA official website, www.creda.co.in

(ii) The tender documents which is non-transferable includes eligibility criteria, "technical specifications", various conditions of tender, formats, etc. can either be purchased from CREDA, Raipur during official days and time upto 30.06.2020 on making payment towards necessary Bid Document fee by Demand Draft (DD) in favour of "CREDA, Raipur" issued by any scheduled/nationalized bank and payable at Raipur or be directly downloaded from CREDA official website www.creda.co.in.

(iii) Joint venture (JV) of only two firms/agencies/companies, one act as lead partner, is allowed to participate in this tender subject to the condition that JV and anyone or both partners are not blacklisted by any of the State or Central Government and organisations of the State or Central Government including PSUs/SEBs/Utilities. Bids submitted by a joint venture having not more than two partners with one partner as lead partner, if allowed as per stipulated Qualification Requirements, shall comply with the following requirements:

1. Bidder has to submit undertaking on valid non-judicial stamp of Rs.300/- as per prescribed format available with tender as format-II (A).
2. The bid shall be signed so as to be legally binding on all partners.
3. One of the partners responsible for performing a key component of the contract shall be designated as leader (lead partner); this authorization shall be evidenced by submitting with the bid a power of attorney signed by legally authorized signatories on valid non-judicial stamp of Rs.300/- for this tender as per prescribed format available with tender as format -II (B).
4. The lead partner shall be authorized to incur liabilities and receive instructions for and on behalf of any and all partners of the joint venture, and the entire execution of the plant on award given by

prosumer, including payment, shall be done exclusively with the lead partner, provided otherwise requested by the joint venture and agreed between the Employer and the lead partner.

5. All partners of the joint venture shall be liable jointly and severally for the execution of the plant on award given by prosumer, in accordance with the tender/bid terms and conditions.

6. A copy of the agreement entered into by the joint venture partners shall be submitted with the bid including inter-alia delineation of responsibilities and obligations of each partners appended thereto, notwithstanding the joint and several liability.

7. The joint venture agreement should indicate precisely the responsibility of all partners of JV in respect of design, supply, installation, testing, commissioning including 05 year Comprehensive Warranty for complete installed plant and further 20 years extended warranty for solar PV module and comprehensive maintenance/CMC for five years of executed Grid connected Rooftop Solar Photovoltaic Power Plants

8. All members of JV should have active participation in execution of plant. This should not be varied/modified subsequently without prior approval of the Employer

9. In order for a joint venture to qualify, only lead partner shall have to fulfil the financial eligibility criteria as stated in clause-6, Tender Schedule. However, both partners of JV jointly shall have to fulfill technical eligibility criteria as stated in clause-6, Tender Schedule and other required technical conditions and specification as mentioned under this tender. Failure to comply with this requirement will result in rejection of the joint venture bid.

10. A firm can be a partner in only one joint venture; bids submitted by joint ventures or consortia including the same firm as partner will be rejected.

(iv) The bidder shall submit the single bid only. The multiple bids submitted by the bidder shall be rejected.

(v) **Bidder shall submit the Techno-Commercial bid proposal complete in all respect** along with necessary Bid Document fee (Original receipt, if tender purchased from CREDA, Raipur or submitting Demand Draft (DD) in favour of "CREDA, Raipur" issued by any scheduled/nationalized bank and payable at Raipur, if tender downloaded), EMD in required forms, as per the Bid Information Sheet and Integrity Pact either personally or by post on the address mentioned in Bid Information Sheet. Bidders must ensure that, while submitting techno-commercial bid, except DD all other documents such as tender documents and subsequent Amendments/Clarifications, copies of required supporting documents/certificates for determining qualifying eligibility criteria mentioned at Section-III & other technical conditions and specifications must be self-attested by authorized signatory for and on behalf of the bidder, otherwise, the bid shall be summarily rejected.

- **The Bid Document fee** has to be necessarily paid only through Demand Draft (DD) in favour of "CREDA, Raipur" issued by any scheduled/nationalized bank and payable at Raipur.

- **The EMD should in the form of *Demand Draft (DD) in favour of "CREDA, Raipur"*** issued by any scheduled/nationalized bank and payable at Raipur

- **Integrity Pact:**

  The Bidder shall complete the accompanying Integrity Pact, which shall be applicable for bidding as well as during execution, duly signed on each page by the person signing the bid and shall be returned by the Bidder in two (2) originals along with the Techno-Commercial bid in a separate envelope, duly superscripted with 'Integrity Pact'. The Bidder shall submit the Integrity Pact on a non -judicial stamp paper of Rs. 100/- in the prescribed enclosed format-IX.

  If the Bidder is a joint venture, the Integrity Pact shall be signed by all the partners or consortium members.

  Bidder's failure to submit the Integrity Pact duly signed in Original along with the Bid or subsequently pursuant to ITB shall lead to outright rejection of the Bid.

- **For authorized signatory:**

  (a) In case of bidder is individual or proprietary firm/agencies, bidder has to submit the certificate given in format-II.

  (b) In case of bidder is individual or partnership firm/agencies/organisation/Company, bidder has to submit the certificate given in format-II along with notarized original power of attorney on valid non-judicial stamp of Rs.300/- for this tender or copy of resolution passed for this tender whichever is applicable.

  (c) In case of bidder is Joint Venture, bidder has to submit the certificate given in format -II along with notarized original power of attorney on valid non-judicial stamp of Rs.300/- for this tender as per prescribed format available with tender as format-II (B).

(vi) **Bidder shall submit the "Price/Financial Bid" online** only at required location on CSPDCL e-tendering portal as per the format-viii prescribed in this BID.

(vii) Techno-Commercial bid will be open in presence of authorized representatives of bidders who wish to be present. Techno-Commercial Bids not accompanying the original instruments towards Bidding Document fee and EMD, or those accompanied by these instruments of inadequate value, shall not be entertained and in such cases, the bid shall be summarily rejected.

(viii) Financial Bid shall be submitted only through online mode with due encryption. For ease of accessing the e-bidding website and registration the following is to be done by bidder:

a) Visit http://www.cspc.co.in

b) Click on e-bidding button on right hand side of the page.

c) The user will be directed to e-bidding page where all information regarding registration is available along with helpline details.

d) Price Bid shall be submitted online only at http://www.cspc.co.in however technical bid will have to be submitted in hard copy. Bid Documents (including Technical Bid) must reach at Chief Engineer (RE–II) Section, Near Energy Education Park VIP Road, Raipur latest by 03.30 PM on 01.07.2020 Bids submitted after scheduled time and date shall not be considered.

In case of any difficulty in submitting the Financial Bid, bidders are advised to contact immediately the Nodal Person.

The evaluation of submitted bids shall be carried out as per process described in Section-III of bid.

(ix) CREDA will not be responsible for any delay, loss or non-receipts of Bidding Document Cost or EMD sent by post/courier.

(x) Any relaxation/exemption sought by bidders shall only be considered in accordance with relevant clauses Section-II (ITB) regarding submission/payment of EMD and Bidding Document fee and shall be subject to fulfilment of conditions defined in the said clauses. Since all the conditions explained in the said clauses for seeking exemption from submission of Bidding Document fee and EMD are self-explanatory, bidders should ascertain about their fulfilment of all conditions and submit their bid accordingly. If at any stage, it is found that false information is furnished or non-compliance of any of the conditions defined at the said clauses, the bid/offer shall be considered as non-responsive and would not be considered for further evaluation.

(xii) CREDA reserves the right to cancel / withdraw the tender without assigning any reason whatsoever and in such a case, no bidder / intending bidder shall have any claim arising out of such action.

(xiii) Bidders to note that seeking new/additional documents after bid submission should be stopped. Therefore, Bidders are requested to take due care while submitting the bid that it must be complete in all respect as per this tender requirement to avoid rejection.

2.2 PROJECT LOCATION:

i. The design, supply, installation, testing & commissioning including 05 year Comprehensive Warranty for complete installed plant and further 20 years extended warranty for solar PV module and comprehensive maintenance/CMC for 05 years of 1kwp to 500kwp Grid Connected Rooftop Solar System for all the sectors (excluding govt.) in Chhattisgarh State through rate contract programme under CAPEX Mode with 05 Years Comprehensive Maintenance Contract/CMC.

ii. The successful bidders will have the opportunities to execute the project for which the sites can be identified by the prosumers or on the sites allocated by CREDA under Grid–connected Rooftop Solar Photo Voltaic system in accordance with the Technical Specifications & various other requirements as per the relevant directions/ guidelines of MNRE, provisions stipulated in relevant CSERC regulations,2019, Indian Electricity Grid Code, C G State Electricity Grid Code,2011 & CSERC's supply code and its amendment issued time-to-time along with CREDA and CSPDCL directives in this regard.

2.3 CONNECTIVITY WITH THE EXISTING VOLTAGE LEVEL OF 132 KV AND BELOW.

i. The maximum capacity for interconnection of the project with the grid at a specific voltage level shall be governed by the prevailing CSERC's Supply Code and amended from time to time.

ii. The maximum permissible capacity for Grid–connected Rooftop Solar Photo Voltaic system shall not exceed the sanctioned load or contract demand of the Prosumer.

iii. If Prosumer may have voltage levels other than above, then CSPDCL may be consulted before finalization of the voltage level and specification be made accordingly.

iv. For installation of large Grid–connected Rooftop Solar Photo Voltaic system of capacity above 100 kW, the solar power can be connected at low voltage levels and stepped up to 11 kV level through the step-up transformer. The installation of such transformers with all protections, switchgears, Vacuum circuit breakers, cables etc and execution of works of electrical lines shall be carried out by Prosumer only through CSPDCL's registered Class-I/II/III/IV electrical contractors as applicable for the works to be executed under supervision of CSPDCL. All the major materials required to execute such work shall be procured from CSPDCL's approved vendors for such materials.

v. The prosumer must take approval/NOC from CSPDCL prior to execution of above works.

vi. If the meter installed at interface point of prosumer's premises for recording of CSPDCL's consumption already having bidirectional facility then such meter need not to be replaced.

vii. If condition stated at (vi) above is not fulfilled and prosumer wishes to procure the meter itself from open market then such meter, to be installed at interface point of prosumer's premises, shall have the facility specified at technical specifications and must be procured from CSPDCL's approved meter manufacturers. In such case, installation of the meter is to be carried out by CSPDCL after successful testing of meter by CSPDCL's lab.

2.4 POWER GENERATION BY SUCCESSFUL BIDDER

2.4.1 CRITERIA FOR GENERATION

The declared annual CUF shall in no case be less than 15%. Successful Bidder shall maintain generation so as to achieve annual CUF of minimum 15% value till the end of duration of 25 years. The lower limit will, however, be relaxed by CSPDCL to the extent of non- availability of grid for evacuation which is beyond the control of the Successful bidder. The annual CUF will be calculated every year from 1st April of the year to 31st March next year.

2.4.2 SHORTFALL IN GENERATION

During any settlement period (Billing month for April to March) in between the 25 years from the date of commissioning of plant, it is found that the commissioned plant has not been able to generate minimum energy corresponding to the value of annual CUF within the permissible lower limit of CUF declared by the Successful bidder, on account of reasons solely attribute to the Successful bidder such shortfall in performance shall make the Successful bidder liable to pay the compensation @ rate of Rs/unit as per CSPDCL's tariff applicable to prosumer. This will, however, be relaxed to the extent of non-availability of grid for evacuation which is beyond the control of the successful bidder or due to non-availability of load. If successful bidder fails to provide such eligible compensation to the prosumer within next three months from the settlement period for which annual CUF founds within the permissible lower limit of declared CUF, then such successful bidder may be liable to get punishment includes cancellation of their empanelment, forfeiture of their submitted Performance Security, blacklisting of such vendor etc. The Blacklisting may inter-alia include as mentioned below:

Such Vendor will not be eligible to participate in tenders for Government supported projects

2.4.3 OPERATION & MAINTENANCE (O&M) GUIDELINES TO BE MANDATORILY FOLLOWED BY BIDDERS

1. The bidder shall be responsible for all the required activities for successful operation and Maintenance of the Rooftop Solar PV system for a period of 5 years for projects under Capex Parts from the date of commissioning of the plant.
2. For all system sizes, below mentioned guidelines, shall be followed as per RfP.
    a. O&M of Solar Power Plant shall be compliant with grid requirements to achieve committed energy generation.
    b. Ensure availability of qualified and experienced engineer/ technicians during the 5 years of O&M period at project site under Capex model.
3. Periodic cleaning of solar modules. The modules shall be cleaned with a periodic interval of 15 days or as and when required as per actual site conditions. This shall be supported by providing geo-tagged photographs of the site before and after cleaning of the modules. It's the responsibility of the bidder to get the modules cleaned during O&M Period. Roof Top Owner is responsible for such obligation of bidder so as to achieve guaranteed CUF.
    a. Periodic checks of the Modules, PCUs and BoS shall be carried out as a part of routine preventive and breakdown maintenance.
    b. Immediate replacement of defective Modules, Invertors/PCUs and other equipment as and when required. Any change in the plant post net-metering shall be intimated by the bidder to CREDA.
4. Supply of all spares, consumables and fixtures as required. Such stock shall be maintained for all associated Equipment's and materials as per manufacturer's / supplier's recommendations.
5. All the testing instruments required for Testing, Commissioning and O&M for the healthy operation of the Plant shall be maintained by the Bidder. The testing Equipment's must be calibrated once in a year from NABL accredited labs and the certificate of calibration must be kept for reference as required.
6. If negligence/ mal operation on part of the Bidder's operator results in failure of equipment, such equipment should be repaired/ replaced by the Bidder free of cost.
7. Co-ordination with Owner / CREDA/ CSPDCL / CEIG as per the requirement for Joint Metering Report. The person in charge present at site from bidder's side shall take a joint meter reading in the presence of rooftop owner on a monthly basis.
8. Online Performance Monitoring, controlling, troubleshooting, maintaining of logs & records. A maintenance record register is to be maintained by the operator with effect from Commissioning to record the daily generation, regular maintenance work carried out as well as any preventive and breakdown maintenance along with the date of maintenance, reasons for the breakdown, duration of the breakdown, steps taken to attend the breakdown, etc.
9. An agreement will be signed between the beneficiary and Bidder for any kind of harm/incident at site, there will be no liability of CREDA/ CSPDCL. It will be settled between the beneficiary and bidder itself.
10. If any jobs covered in O&M Scope as per RFP are not carried out by the contractor/ Bidders during the O&M period, the Engineer-In-Charge shall take appropriate action as deemed fit. CREDA/ CSPDCL/MNRE/ Third party reserves the right to make surprise checks/ inspection visits at its own or through authorized representative to verify the O&M activities being carried out by the Bidder. Failure to adhere to above guidelines will result in blacklisting the bidders. the CREDA/CSPDCL/MNRE reserves the right to black list the vendor, blacklisting may inter-alia include the following: -

a. The Vendor/Firm/Agency will not be eligible to participate in tenders for Govt. supported projects for specified period as decided by the competent authority.
b. The EMD and security deposited by the Firm/Vendor/Agency will be forfeited.

3. EARNEST MONEY DEPOSIT (EMD):

Earnest Money Deposit (EMD) as mentioned in Bid Information sheet for this Project should in the form of ***Demand Draft (DD) in favour of "CREDA, Raipur"*** issued by any scheduled/nationalized bank and payable at Raipur and shall be submitted by the Bidder along with their techno-commercial bid, failing which the bid shall be summarily rejected. **The EMD may be forfeit if:**

a. If the bidder withdraws its bid during the period of bid validity as specified in the bid.

b. If the bidder does not accept computational/arithmetical error correction made by CREDA and as explained in "Financial Evaluation" Section of the Bid document.

c. If the bidder does not accept assumptions, estimations etc. used for evaluation of bids as specified by CREDA in tender documents and revision of his bid accordingly, in case other assumptions are used.

d. Non-submission of Performance Security of successful bidder selected for empanelment.

4. PERFORMANCE SECURITY:

All successful bidder(s) have to submit the ***Demand Draft of amount Rs.500000/-(Five lac) issued in favour of "CREDA, Raipur''*** within 14 days from the intimation date of selection of empanelment towards Performance Security.

Non-submission of Performance Security may liable to rejection of successful bidder from empanelment and their submitted EMD will be forfeited.

Service Charges- All Successful bidders have to deposit service charge @ Rs. 2.00 per Watt of capacity allocated by CREDA or offered by bidders prior to commencement of work to CREDA.

5 COMMISSIONING:

The Commissioning of the Rooftop Solar Photovoltaic System shall be carried out by the CREDA after

Declaration of completion of the work by both Successful bidder and prosumer in line with the provisions stipulated in CSERC (Grid Interactive Distributed Renewable Energy Sources) Regulations, 2019, CEA

Regulations,2006, prevailing CSERC's supply code , Indian Electricity Grid code and C. G. State Electricity Grid code, 2011 and its amendment issued time to time followed by successful testing and performance tests of installed system.

6. Selection of Empanelled vendor by Prosumer, Execution & Payment terms:

a. The successful bidders shall follow the quality control orders and standards for all components of Rooftop Solar Photovoltaic System and its installation procedure, if any, issued by MNRE/CSERC/CSPDCL from time to time.

b. The successful Bidders have to confirm the Selection of technology in line with the technology indicated while submitting the bid. However, the technology proposed at the time of submission of bid may change at the time of Financial Closure.

c. The successful Bidder has adequate plant and machinery available, to perform the works properly and expeditiously within the time frame specified in the relevant MNRE guidelines/regulations.

d. The successful Bidder has established quality assurance systems and organization designed to achieve high level of equipment reliability in manufacturing of the Solar Systems.

e. The successful Bidder has adequate financial stability and status to meet the financial obligations as per the financial Qualification Criteria of this tender.

f. The successful Bidder has experience of Supply, Installation, Testing, commissioning and maintenance/after sale services in the field of Grid Connected Rooftop Solar Photovoltaic systems.

g. The successful Bidder has provided goods after sale services for the works done by him during past years.

h. The successful Bidder has Valid Test Certificates of the Solar PHOTO VOLTAIC module as specified and required under this tender.

i. The successful Bidders Fulfils all requirements as per various notifications/guidelines of MNRE, GOI and provisions stipulated in relevant CSERC regulations, 2019, Indian Electricity Grid Code, CSERC's supply code and its amendment issued time-to-time.

j. The successful Bidders shall be required to have adequate post installation localized service facilities/centres.

k. Detailed technical parameters for Grid connected Rooftop Solar Photovoltaic system to be met by Successful bidder are given in this bid. The Bidders shall strictly comply with the technical parameters prescribed in the bid. Further, the Cells and modules used for completion of the work shall be procured only from the models and manufacturers included in the "Approved List of Models and Manufacturers" as published by MNRE and updated as on the date of "completion of the work".

l. The Grid connected Rooftop Solar Photovoltaic System installed by successful Bidders shall also comply with the criteria for power generation detailed in Clause in Section-II, Instructions to Bidders (ITB) of tender bid.

m. The Prosumer will have option of installing Rooftop Solar Photovoltaic System through any of the empanelled vendors. For installation at residential premises, prosumer will have to pay net of subsidy amount i.e. making payment to the selected empanelled vendors after deducting the eligible Central Financial Assistance (CFA). The vendor will claim the CFA from the CSPDCL. The CFA for residential sector as stated above shall be permissible only if domestic manufactured Solar Panels (using domestic manufactured Solar cells) are used by the residential prosumer. However, CFA will be limited up to 20% / 40% (as the case may be) of the benchmark cost of Rooftop Solar Photovoltaic System as defined by MNRE from time to time or the rate discovered through transparent bidding by the CREDA, whichever is lower.

n. The subsidy/CFA of the pre-sanctioned projects will be released through CSPDCL to the empanelled vendor/successful bidders after successful commissioning of Rooftop Solar Photovoltaic System on availability from Government.

o. The CFA, if sanctioned by CSPDCL prior to installation shall be released to the empanelled vendor only after the successful commissioning of Rooftop Solar Photovoltaic System in all respect as per MNRE guidelines on subjected to document as per MNRE Guideline. Subjected to disbursement/reimbursement from MNRE.

p. The payment to the selected empanelled vendors is to be given by the prosumer on the mutual agreed terms and conditions between them. CSPDCL will not be responsible for any dispute between them.

q. The Implementing agency or Ministry officials or designated agency may inspect the ongoing installation or installed grid connected Rooftop solar Photovoltaic system. If empanelled vendor violates the provisions of the Integrity Pact provided in this bid during the execution of plant and/or In case the systems are not as per standards, non-functional on account of poor quality of installation, or non-compliance of AMC, the Ministry/CREDA reserves the right to award punishment including cancellation of empanelment, forfeiture of Performance Security, blacklisting of empanelled vendor. The Blacklisting may inter-alia include as mentioned below: -

(i) Such Vendor will not be eligible to participate in tenders for Government supported projects.

(ii) In case, the concerned Director(s) of the firm/company joins another existing or starts/ joins a new firm/company, the company will be deemed considered as blacklisted.

7. COMMERCIAL OPERATION DATE (COD)

Commercial Operation Date (COD) shall be the date on which the commissioning Certificate is issued upon Successful commissioning of the full capacity of the Project.

Commissioning of the Project: This will be on a date, when the installed Rooftop Solar Photovoltaic system will be synchronised with grid by CSPDCL and declare that the project commissioned on site.

8. STRUCTURING OF THE BID SELECTION PROCESS

Two-stage selection process followed by negotiations has been envisaged under this tender. Bidders have to submit both Techno-Commercial Bid offline and Price/Financial Bid online together in response to this bid. The preparation of bid proposal has to be in the manner described in Section-II, Instructions to Bidders (ITB) of bid.

9. INSTRUCTIONS TO BIDDERS FOR STRUCTURING OF BID PROPOSALS IN RESPONSE TO BID:

The bidder shall submit single bid only. Submission of bid proposals by Bidders following the detailed instructions in response to this tender shall be in the manner described below

i. Covering Letter

ii. Integrity Pact in the prescribed enclosed Format-IX.

iii. Original instruments towards Bidding Document fee as mentioned at section II, ITB.

iv. Earnest Money Deposit (EMD) in the form mentioned at section II, ITB.

v. Duly filled prescribed formats towards fulfilling the Technical Eligibility Criteria in line with Section-III of this tender along with self-attested copies of required supporting documents/certificates to examine the experience and successful performance for respective capacity range categories.

vi. Duly filed prescribed Formats for Financial Requirements along with the self-attested copies of certificate from practicing Chartered Accountant/ Statutory Auditors showing details of computation of the financial credentials of the Bidder. Self attested copies of certified annual audited accounts for the last three financial years i.e. FY 2016-17, 2017-18 and 2018-19.

vii. A disclosure statement regarding participation of any related companies in the bidding process.

viii. Details of all types of Securities/ instruments which are pending conversion into equity whether optionally or mandatorily.

ix. While submitting techno-commercial bid, except DD all other documents such as tender documents and subsequent Amendments/Clarifications, copies of supporting documents/certificates for determining qualifying eligibility criteria & other technical conditions and specifications must be self-attested by authorized signatory for and on behalf of the bidder, otherwise, the bid shall be summarily rejected.

10. IMPORTANT NOTES AND INSTRUCTIONS TO BIDDERS

10.1 Wherever information has been sought in specified formats, the Bidders shall fill in the details as per the prescribed formats and must be self-attested by authorized signatory for and on behalf of the bidder. Bidder shall refrain from any deviations and referring to any other document for providing any information required in the prescribed format.

10.2 The Bidders shall be shortlisted based on the declarations made by them in relevant schedules of tender. The documents submitted will be verified in terms of various clauses of Section-II & Section-III of tender.

10.3 If the Bidder conceals any material information or makes a wrong statement or misrepresents facts or makes misleading statement in its response to tender, in any manner whatsoever, CREDA reserves the right to reject their bid, and the EMD shall be forfeited. Bidder shall be solely responsible for disqualification based on their declaration in the submission of response to tender bid.

10.4 Bids submitted by the Bidders shall become the property of the CREDA and CREDA shall have no obligation to return the same to the Bidder. However, the EMDs submitted by unsuccessful Bidders shall be returned as specified in Section-II, Instructions to Bidders (ITB) of bid after empanelment of vendors.

10.5 Except DD, all other documents/certificates submitted with Techno-Commercial bid (including tender documents and subsequent Amendments/ Clarifications) must be self-attested by authorized signatory for and on behalf of the bidder.

10.6 The response to bid shall be submitted as mentioned in Clause, Section-II, and Instructions to Bidders (ITB) of bid. No change or supplemental information to a response to bid will be accepted after the scheduled date and time of submission of response to bid. However, CREDA reserves the right to Seek additional information from the Bidders, if found necessary, during the course of evaluation of the response to bid.

10.7 All the information shall be submitted in English language only.

10.8 Bidders shall mention the name of the contact person and complete address and contact details of the Bidder in the covering letter.

10.9 The Bid submitted, if found incomplete, which do not substantially meet the requirements prescribed in this tender will be liable for rejection by CREDA.

10.10 Bid not submitted in the specified formats will be liable for rejection by CREDA.

10.11 Bidders delaying in submission of additional information or clarifications sought will be liable for rejection.

10.12 Non-submission and/ or submission of incomplete data/ information required under the provisions of bid shall not be construed as waiver on the part of CREDA of the obligation of the Bidder to furnish the said data/ information unless the waiver is in writing.

10.13 Only Courts situated within jurisdiction of Chhattisgarh State shall have exclusive jurisdiction in all matters pertaining to this tender.

11. NON-RESPONSIVE BID

The bid along with the documents submitted by the bidder to CREDA shall be scrutinized to establish "Responsiveness of the bid". Each bidder's response to bid shall be checked for compliance with the submission requirements set forth in this bid.

Any of the following conditions shall cause the Bid to be "Non-responsive": -

(a) Non-submission of Bidding Document fee in form mentioned in the section-II of tender.

(b) Non-submission of EMD in acceptable form along with bid document.

(c) If bid received after due date and time of bid submission;

(d) Any indication of rate in any part of response to the bid, other than in the financial bid submitted online;

(e) In case, it is found that the Bidding Company have submitted more than one response to this tender, then all such submitted bids shall be treated as non-responsive and rejected.

12. METHOD OF SUBMISSION OF RESPONSE TO TENDER BY THE BIDDER

A. DOCUMENTS TO BE SUBMITTED HARDCOPIES:

The bidder has to submit the duly filled in prescribed formats and required documents (including tender documents and subsequent Amendments/ Clarifications)after self-attestation by authorized signatory as part of their bid to the address mentioned in Bid Information Sheet before the due date and time of bid submission.

Bidding Envelope: Super scribed as "Bidding Envelope containing at the top of the Envelope and "Name & Address of the Bidder" on the left hand side bottom must contain the following:

(i) Separate Envelope containing two sets of Integrity Pact in the prescribed enclosed Format-IX

(ii) Original instruments towards necessary Bidding Document fee as per detail mentioned in section-II,

(iii) EMD in desired format as per detail mentioned in section-II.

(iv) Covering Envelope: Superscribed as "Covering Envelope containing GSTIN on the letterhead of the Bidder (signed by the Authorized signatory), Covering Letter as per Format-I & other formats duly filled and signed by the Authorized signatory, all the documents and formats duly self-attested to examine qualifying criteria as set-forth in Section-III, Eligibility criteria and other conditions of tender.

The bidding envelope shall contain the following sticker:

Response to tender for selection of Solar Power Developers for setting up of 1-500KWp Solar Photovoltaic Power Projects in all the willing consumers except government connections in Chhattisgarh State	
Notice Inviting Tender	**No.1966 GCSRT_1-500kWp/CAPEX/2019-20/Raipur** **Date:06.06.2020**
Submitted by	**(Full Name in Capital letters and address of the Bidder)**
Authorized Signatory	**(Signature of the Authorized Signatory)** **(Name of the Authorized Signatory)** **(Stamp of the Bidder)**
Techno-commercial bid Submitted to	**C.E. (Grid Connected Section, RE-II)** **Chhattisgarh State Renewable Energy Development Agency (CREDA)** **V.I.P. (Airport Road), Near Energy Education Park, P.O. Deopuri, Raipur - 492 0015, Chhattisgarh, India** **Tel.: 837000 09923** **E-mail: contact.creda@gov.in** **Website: www.creda.co.in**

B. DOCUMENTS TO BE SUBMITTED ONLINE

Bidder shall submit the "Price/Financial Bid" online only at required location on CSPDCL e-tendering portal (http://www.cspc.co.in) as per the prescribed format-viii of this tender:

13. VALIDITY OF THE RESPONSE TO TENDER

The Bidder shall submit the bid which shall remain valid up to 06 (Six) months from the last date of opening of Techno-commercial Bids. CREDA reserves the right to reject any of the submitted bid which does not meet the aforementioned validity requirement.

14. BID PREPARATION COST

The Bidder shall be responsible for all the costs associated with the preparation of the response to Tender bid. CREDA shall not be responsible in any way for such costs, regardless of the conduct or outcome of the bid process.

15 CLARIFICATIONS/ ENQUIRIES/ AMENDMENTS

15.1 Clarifications/Doubts, if any, on Tender document may be email to: contact.creda@gov.in

15.2 Enquiries / Clarifications may also be sought by the Bidder from:

Designation	Contact Numbers	Email ID
Chief Engineer - RE-II	9826137734	contact.creda@gov.in
Superintending Engineer	9425363606	contact.creda@gov.in
Assistant Engineer	8770580522	contact.creda@gov.in

The Bidder(s) or their authorized representative(s) is /are invited to attend pre-bid meeting(s), which will take place on date(s) as specified in Bid information sheet, or any such other date as notified by CREDA.

The purpose of the pre-bid meeting will be to clarify any issues regarding the RFS including in particular, issues raised in writing and submitted by the Bidders.

CREDA is not under any obligation to entertain/ respond to suggestions made or to incorporate modifications sought for.

16 RIGHTS OF CREDA TO REJECT A BID:

CREDA reserves the right to reject any or all of the submitted bids or cancel the Tender or annul the bidding process for any project at any stage without assigning any reasons whatsoever and without thereby any liability. In the event of the tender being cancelled at any stage, EMD submitted by the Bidders shall be returned to the respective Bidders.

17 POST EMPANELLMENT OF SUCESSFUL BIDDER(S) COMPLIANCES:

Timely completion of all the milestones i.e. process for Commissioning, Synchronization etc. will be the sole responsibility of Successful bidder/Prosumer. CREDA shall not be liable for issuing any intimations/ reminders to Successful bidders for timely completion of milestones and/ or submission of compliance documents.

Any checklist shared with Successful bidder(s) by CREDA for compliance of above mentioned milestones to be considered for the purpose of facilitation only. Any additional documents required as per Tender conditions and specifications must be submitted by the Successful bidder (s) in time.

18 TERMINATION OF EMPANELMENT:

Unless otherwise extended, the tenure of empanelment for all the successful bidder(s) in all capacity ranges will be one Year from the date of their empanelment. In addition to this, at any stage, if it is found that any empanelled vendor is not commissioning/ has not commissioned the projects and/or violates the provisions of the Integrity Pact provided in this bid during the execution of plant as per CREDA / MNRE guidelines, then their empanelment is liable to be cancelled. In addition to this, empanelled vendor is also liable to forfeiture of submitted Performance Security and/or blacklisting by CREDA.

19 ARBITRATION AND JURISDICTION

If any dispute between the CREDA/ CSPDCL or Beneficiary and the Contractor arising out of Contract will first be resolved amicably between the Parties. In such cases where dispute is not resolved between the Parties, then the Parties may mutually agree to appoint an arbitrator under the provisions of Arbitration and Conciliation Act, 1996 as amended time to time.

Any disputes arising shall be subject to the jurisdiction of the High Court of Chhattisgarh.

20 LANGUAGE

All documents, drawings, instructions, design data, calculations, operation, maintenance and safety manuals, reports, labels and any other data shall be in Hindi/ English Language. The contract agreement and all correspondence between the CREDA/ CSPDCL and the bidder shall be in English language.

21 OTHER CONDITIONS

The Successful bidder shall not transfer, assign or sublet the work under the contract or any substantial part thereof to any other party without the prior consent of CREDA/ CSPDCL in writing.

The Successful bidder shall not display the photographs of the work and not take advantage through publicity of the work without written permission of CREDA/ CSPDCL and beneficiary of the Rooftop.

The Successful bidder shall not make any other use of any of the documents or information of the contract, except for the purposes of performing the contract.

22 SEVERABILITY

It is stated that each paragraph, clause, sub-clause, schedule or annexure of the contract shall be deemed severable & in the event of the unenforceability of any paragraph, clause sub-clause, schedule or the remaining part of the paragraph, clause, sub-clause, schedule annexure & rest of the contract shall continue to be in full force & effect.

TENDER SCHEDULE

SECTION – III

TENDER SCHEDULE

1. PREAMBLE:

The scope of work for the bidder include complete design, shadow analysis of roof top, engineering, supply, Installation & Commissioning of Various Capacities of Grid Connected1-500kWp Grid Connected Rooftop Solar Photo Voltaic system for all willing consumers except government connections in Chhattisgarh state through Rate Contract programme under CAPEX Mode including its 05 Years CMC.

CREDA inviting Bids for Empanelment of Vendors for Design, Supply, Installation, Testing & Commissioning Including 05 year Comprehensive Warranty for complete installed plant and further 20 years extended warranty for solar PV module and Comprehensive Maintenance/CMC for 05 years of 1kwp to 500kwp Grid Connected Rooftop Solar Photo Voltaic system for five years for all the willing consumers excluding government connections in the Chhattisgarh State through Rate Contract Programme under CAPEX Mode. Bidders can quote Separate rate for each capacity range categories of 1 - 10 KWp, >10-100kWp and > 100KWp to 500 KWp grid connected Roof Top Solar systems.

The Successful Bidder(s) shall work closely with the State Government departments, Institutions, non-profit organizations institutions in implementing the above work and ensure success of the program. Installations will have to be generally done as per the provisions stipulated in relevant MNRE guidelines, CSERC (Grid Interactive Distributed Renewable Energy Sources) Regulations, 2019, Indian electricity Grid Code, CEA regulations,2006 and its amendment issued from time to time.

To ensure effective CMC of the installed plant during 05 years of comprehensive warranty and maintenance of grid connected Rooftop Solar system, the successful bidder should setup their Repair and maintenance centre as per requirement. Successful Bidder(s) shall preferably establish a service centre in each district for supply and installation of the Grid Connected Rooftop Solar Photo Voltaic system. In case, if it is not economically viable for an individual vendor, then Group of empanelled vendors can establish service centre in each District. Their contact details will be available on the CSPDCL's Rooftop solar web portal. These service centres must provide all the necessary services to the Grid Connected Rooftop Solar Photo Voltaic system owners within the timelines specified in the tender, free of cost from the COD of the Rooftop Solar Photo Voltaic system. Non- performing / under- performing Photo Voltaic panel will be replaced free of cost during the obligated warranty period of 25 years from COD of plant. Non-compliance of the service standards by the empanelled vendors will make it ineligible for future work orders by the Government and their empanelment is liable to be cancelled. In addition to this, empanelled vendor is also liable to forfeiture of their submitted Performance Security and/or blacklisting by CREDA.

LIST OF SUCCESSFUL BIDDER(S)

List of successful Bidder(s)/Empanelled vendors for each capacity range shall be displayed on CSPDCL's online Rooftop Solar Web portal and shall be intimated in writing to the concerned.

INSPECTION

All the installed Grid Connected Rooftop Solar Photo Voltaic system will be inspected by the representative of CREDA/CSPDCL/MNRE/Third Party within 15 days of fulfilling the data towards of installation and completion report from Prosumer / empanelled vendor. The eligible CFA, if applicable, shall be released to the empanelled vendor only after the successful commissioning of Rooftop Solar Photovoltaic System in all respect. During the inspection, if the system installed is found faulty (or not in compliance to the technical specification, the cost of re-inspection by CREDA/CSPDCL/MNRE/Third Party after rectification/replacement shall be borne by the empanelled vendor.

If empanelled vendor violates the provisions of the Integrity Pact provided in this bid during the execution of plant and/or In case the systems are not as per standards, non-functional on account of poor quality of installation, or non-compliance of CMC, then empanelment of such vendors are liable to be cancelled. In addition to this, CREDA/MNRE reserves the right to award punishment to such empanelled vendor, which includes forfeiture of their submitted Performance Security and/or blacklisting. Such Vendor will not be eligible to participate in tenders for Govt. supported projects for specified period as decided by the competent authority.

2. INCOME TAX:

During the course of the empanelment period, deduction of income tax and surcharge as in force at source shall be made at the prevailing rate of income tax department issued from time to time of the gross amount of each bill.

3. RATES, TAXES AND DUTIES:

All the rates including Bidder's quoted rate in the tender shall be inclusive of all statutory compliances like PF, ESI, Services Tax, GST, etc. However, any changes made to the tax structure by the government shall be duly considered and appropriate changes made.

4. PLACE OF WORK AND VISIT TO SITE:

Intending successful bidder shall visit the Site/ Campus to acquaint with local site conditions, nature and requirement of work, present conditions of premises/fittings/fixtures, etc., before start of the work.

5. BID DETAILS:

The bid shall be on CAPEX MODE for empanelment of vendors to execute the work for design, supply, installation, testing & commissioning including 05 year Comprehensive Warranty for complete installed plant and further 20 years extended warranty for solar PV module and 05 years Comprehensive Maintenance/CMC of 1kwp to 500kwp Grid Connected Rooftop Photo Voltaic Solar System through rate contract on approved rates by CREDA for respective capacity ranges.

6. TECHNO-COMMERIAL CONDITIONS/ ELIGIBILITY CRITERIA:

PART-A: TECHNICAL ELIGIBILITY CRITERIA:

Sr. No.	Capacity range Category of RTS	Technical Requirement	Documents required to examine technical requirement
01	1kW to 10kW	The bidder should have experience of successful execution of work for design, supply, installation, testing & Commissioning of Grid Connected Rooftop Photo Voltaic Solar Systems as indicated below along with their minimum 01 year satisfactory performance from COD:- (a) At least 01 KW capacity plant in each year during last three Financial Years (i.e. FY 2016-17, 2017-18 and 2018-19) and, (b) At least two plant having capacity 10 kW or above during the period of last three Financial Years(i.e. FY 2016-17, 2017-18 and 2018-19) and, (c) At least 100 KW cumulative capacities plants above during the period of last three Financial Years (i.e. FY 2016-17, 2017-18 and 2018-19).	bidder shall submit the copies of sufficient relevant experience documents / certificates along with their 01 satisfactory performance issued by CREDA/State Govt. /Central Govt./ State PSU/ Central PSU/SEB/Power Utility/

02	>10kW to 100kW	The bidder should have experience of successful execution of work for design, supply, installation, testing & Commissioning of Grid Connected Rooftop Photo Voltaic Solar Systems as indicated below along with their minimum 01 year satisfactory performance from COD:- (a) At least 10 KW capacity plant in each year during last three Financial Years (i.e. FY 2016-17, 2017-18 and 2018-19) and, (b) At least one plant having capacity 50 kW or above during the period of last three Financial Years(i.e. FY 2016-17, 2017-18 and 2018-19) and, (c) At least 500 KW cumulative capacities plants above during the period of last three Financial Years (i.e. FY 2016-17, 2017-18 and 2018-19).	/any other Govt./Semi Govt. organization while submitting techno-commercial bid for respective capacity range categories (Note: All such copies must be self attested by authorized signatory)
03	>100kW to 500kW	The bidder should have experience of successful execution of work for design, supply, installation, testing & Commissioning of Grid Connected Rooftop Photo Voltaic Solar Systems as indicated below along with their minimum 01 year satisfactory performance from COD:- (a) At least 50 KW capacity plant in each year during last three Financial Years (i.e. FY 2016-17, 2017-18 and 2018-19) and, (b) At least one plant having capacity 100 kW or above during the period of last three Financial Years(i.e. FY 2016-17, 2017-18 and 2018-19) and, (c) At least 1000 KW cumulative capacities plants above during the period of last three Financial Years (i.e. FY 2016-17, 2017-18 and 2018-19).	

Since this tender is invited with aim to promote only commercially established and operational technologies to minimize the technology risk and to achieve timely commissioning of the installed Rooftop Solar Photo-Voltaic system, hence, bidder may indicate regarding the Selection of technology and its details at the time of submission of bids in the prescribed format-vi.

PART-B: FINANCIAL ELIGIBILITY CRITERIA:

(i) Minimum average annual turnover (MAAT):

Sr. No.	Capacity range Category of RTS.	Minimum average annual turnover in last three Financial Years (FY 2016- 17, FY 2017-18, FY 2018-19)
1.	1kW to 10kW	Rs.50 Lac
2.	1kW to 10kW & >10kW to 100kW	Rs.70 Lac
3.	1kW to 10kW, >10kW to 100kW & >100kW to 500kW	Rs.100 Lac

(ii) Net Worth for each of the last three Financial Years (FY 2016- 17, FY 2017-18, FY 2018-19) should be positive. Net worth means the sum total of the paid up capital and free reserves (excluding reserves created out of revaluation) reduced by aggregate value of accumulated loses (including debit balance in profit and loss account for current year) and intangible assets.

Important Note:

The bidder should have above financial capability to take up the proposed work to be supported by Audited balance sheet for three years from 2016- 17, 2017-18, 2018-19 (copies of balance sheet along with CA certificate shall be self attested by authorized signatory should be submitted with bid).

In case a bid is submitted by a Joint venture of two firms/agencies/companies, all the partners of the JV shall meet, individually, the qualification set forth at part-B (ii) whereas only lead partner shall have to fulfil the financial eligibility criteria qualification set forth for part-B (i) above. However, both partners of JV jointly shall

have to fulfil the qualification set forth at part-A and other required technical conditions and specification as mentioned under this tender.

The bidder will be required to submit the detailed information in respect of PART-B: FINANCIAL ELIGIBILITY CRITERIA above through an affidavit as per the format-vii.

The Blacklisted and debarred individual/firm/agencies/organisation/Company/Joint venture and anyone or both partners of two firms/agencies/companies by CSPDCL/ CREDA/State Govt. / Central Govt./State PSU/Central PSU/SEB/Power Utility/State Nodal Agency/any other Govt./Semi Govt. organization shall not be eligible for participation in the tender.

7. FORCE MAJEURE

Not withstanding the provisions of Clauses contained in this tender, the empanelled vendors shall not be liable to award punishment

(a) If he is unable to fulfil his obligation under this tender due to force majeure conditions:

For purpose of this Clause, "Force Majeure" means an event beyond the control of the contractor and not involving the contractor's fault or negligence and not foreseeable, either in its sovereign or contractual capacity. Such events may include but are not restricted to Acts of god, wars or revolutions, fires, floods, epidemics, quarantine restrictions and fright embargoes etc, Whether a "Force majeure" situation exists or not, shall be decided by CREDA and its decision shall be final and binding on the contractor and all other Concerned.

(b) In the event that the empanelled vendor is not able to perform his obligations under this tender on account of force majeure, he will be relieved of his obligations during the force majeure period. In the event that such force majeure extends beyond six months, CSPDCL/CREDA has the right to terminate the awarded work by Prosumer in which case, the Security deposit shall be refunded to him.

(c) If a force majeure situation arises, then empanelled vender shall notify CREDA in writing promptly, not later than 14 days from the date of such situation arises. After examining he cases, CREDA shall decide and grant suitable additional time for the completion of the work, if required.

8. COMMISSIONING / COMPLETION

Completion

When the empanelled vendor has successfully execute the work for design, supply, installation, testing of Grid Connected Rooftop Photo Voltaic Solar System (Project) in all respect as per all tender conditions and specifications including their performance test and complied the provisions stipulated in relevant regulations and applicable different code, he shall be eligible to apply for commissioning of such plant.

a) **DOCUMENT SUBMISSION FOR ISSUE COMMISSINONING/COMPLETION CERTIFICATE:**

For the purpose of above the following documents will be deemed to form the completion documents:

b) Checklist for inspection of Grid Connected Roof top Solar Photovoltaic system as per MNRE guidelines/relevant regulations/Tender.

c) Satisfaction Certificate given online from concern prosumer regarding Project completion.

d) Online declaration to follow the operational guidelines for 05 years CMC given in format-III.

BID EVALUATION AND SELECTION OF PROJECTS

SECTION – IV

BID EVALUATION AND SELECTION OF PROJECTS

1. BID EVALUATION:

Bid evaluation will be carried out considering the information furnished by Bidders as per provisions specified in Section-II, Instructions to Bidders (ITB) of this tender. The detailed evaluation procedure and Selection of bidders are described in subsequent Clauses in this Section.

2. TECHNO-COMMERCIAL EVALUATION OF BIDDERS:

The techno-commercial evaluation of submitted bid by the bidders will be carried out in following manner:-

(i) Firstly the envelope Superscribed as "Bidding Envelope of only those bidders will be opened by CREDA whose Techno-commercial bid received on or before due date of submission.

(ii) Techno-commercial Bid (as mentioned in the previous Clause) received after due date of submission shall be rejected.

(iii) On opening of Bidding Envelope, following examination will be carried out:-

Checking of separate envelope containing Original Integrity Pact in two sets If found OK, otherwise bid shall be rejected, then

Original instruments towards necessary Bidding Document fee as per detail mentioned in section -II. If found OK, otherwise bid shall be rejected, then

Checking of EMD in desired form as per detail mentioned in section-II. If found OK, otherwise bid shall be rejected, then

Envelope Superscribed as "Covering Envelope will be opened to check the documents related to GSTIN, Covering Letter as per Format-I & other formats and necessary documents to examine eligibility criteria.

(IV) CREDA will examine all the documents submitted by the Bidders and ascertain meeting of eligibility conditions prescribed in the Tender. During the examination of the bids, CREDA may seek clarifications/ additional documents to the documents submitted etc. from the Bidders if required to satisfy themselves for meeting the eligibility conditions by the Bidders. Bidders shall be required to respond to any clarifications/ additional documents sought by CREDA within 07 (Seven) days from the date of such intimation from CREDA. All correspondence in this regard shall be made through email/ e-tender portal only. It shall be the responsibility of the Bidder to ensure that the email id of the authorized signatory of the Bidder is functional. The Bidder may provide an additional email id of the authorized signatory in the covering letter. No reminders in this case shall be sent. It shall be the sole responsibility of the Bidders to remove all the discrepancies and furnish additional documents as requested. CREDA shall not be responsible for rejection of any bid on account of the above. Finally, the bid submitted by the Bidder along with additional clarifications/ additional documents, if required shall be scrutinized to establish techno- Commercial eligibility as per Tender.

(v) Those bidders who meet the qualifying criteria for respective capacity range shall be eligible to open their submitted online price bids in that capacity range.

(vi) After above step, L1 bidder for each capacity range will be declared and shall be invited for the negotiations, if seems reasonable.

(vii) The rate has to be quote up to two places of decimal only. If it is quote with more than two digits after decimal, it shall be ignored after first two decimal places. (For e.g. if the quoted rate is INR 40.337, then it shall be considered as INR 40.33).

(viii) On completion of Techno-Commercial bid evaluation, if it is found that only one or two Bidder(s) is/are eligible for particular capacity range, opening of the financial bid of the bidder will be at the discretion of CREDA. Thereafter, CREDA will take appropriate action as deemed fit.

(ix) If the quoted rate is same for two or more Bidders for particular capacity range, then all the Bidders with same (L1) lowest rate shall be eligible for negotiations.

3. SELECTION OF SUCCESSFUL BIDDER:

a) The lowest rate (i.e. L-1) for each capacity range received (and in turn approved by the competent authority) would be considered as "Lowest Rate" for that capacity range. If required, CREDA reserves the right to negotiate with Lowest Rate (L-1) bidder before finalization the “Approved rate” for each capacity range category.

b) "Approved Rate" for each capacity range would be offered to other bidders (i.e. L-2, L-3 and so on) whose rates are within L1+20% (i.e. 20% above the approved lowest rates) to get empanelled and work on lowest approved rates. Further, if total number of empanelled bidders are found to be less than 5 in a capacity range, then CREDA may also include those agencies who fall in L1+25% (i.e. 25% above the firms/bidders/falling outside the above specified range i.e. 20% or 25% as the case may be, of the L1 rates will be considered.

c) All successful bidder(s) can get work directly from prosumers as per their allocation.

d) The successful bidder(s) will provide training to the prosumers.

e) CREDA reserves the right to accept any bid and to reject any or all of the bids without assigning reasons thereof.

TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS

The Grid connected Solar Rooftop Photo Voltaic (RTS) system shall be completed/commissioned as per the technical specifications given below.

Competent Authority's decision will be final and binding on the bidder.

DEFINITION:

A Grid connected Solar Rooftop Photo Voltaic (RTS) power plant consists of RTS array, Module Mounting Structure, Power Conditioning Unit (PCU) consisting of Maximum Power Point Tracker (MPPT), Inverter, and Controls & Protections, interconnect cables, Junction boxes, Distribution boxes and switches. Photo Voltaic Array is mounted on a suitable structure. Grid connected RTS system is without battery and should be designed with necessary features to supplement the grid power during day time. Components and parts used in the RTS power plants including the Photo Voltaic modules, metallic structures, cables, junction box, switches, PCUs etc., should conform to the BIS or IEC or international specifications, wherever such specifications are available and applicable. Solar Photo Voltaic system shall consist of following equipment/components.

Solar PHOTO VOLTAIC modules consisting of required number of Crystalline Photo Voltaic Cells. Grid interactive Power Conditioning Unit with Remote Monitoring System Mounting structures, Junction Boxes, Earthling and lightening protections, IR/UV protected PVC Cables, pipes and accessories

1. INTENT OF SPECIFICATION

Intent of the specification is to describe the requirement of the employer for procurement and installation of equipment, civil works and other auxiliary and support facilities and to provide inputs to Bidder to enable them to prepare and submit their techno-commercial proposal to meet this requirement. The specification intends to cover the design, engineering, supply, transportation, un-loading, storage, in-plant transportation to site from stores, erection, testing & commissioning and performance guarantee and enabling work as encountered during execution of work.

Relevant details necessary for preparation and submission of best offers are included in the Subsequent Sections of the specifications. However, the successful bidder(s) are free to suggest any superior technology/ practises where ever required, with full details, as an alternative

The specification shall be read in totality and the bid shall be prepared accordingly.

2. SCOPE OF WORKS AND SERVICES

Scope of Supply & Work includes Design, Engineering, Procurement & Supply of equipment and materials; testing at manufacturers works, inspection, packing and forwarding, unloading at site, associated civil works, services, permits, installation and incidentals, erection, testing and commissioning of 1kWp – 500KwP Grid connected Solar photovoltaic system with associated equipment and materials under Net-metering Scheme, on turnkey basis For all the willing consumers except Government connections in Chhattisgarh State. The equipment and materials for 1-500kWp Grid connected Solar PHOTO VOLTAIC Power Plants with associated system shall include but not be limited to the Design, Supply, Erection, and Testing & Commissioning of the following equipment and sub-systems:

a. Solar PHOTO VOLTAIC modules including mounting frames, Mounting structures, foundation bolts and nuts for holding structures and module inter connection, Array Junction boxes / String combiner Box with surge protection and monitoring system.

b. Power Control Unit/s including MPPT (Maximum Power Point Tracking) charge controller and Synchronizing facility at 415V,50Hz.

c. AC Distribution Board/s.

d. Auxiliary AC & DC power system for control and protection system for the total plant complex Including Battery and Battery charger for inverter and other such accessories that require a power Backup.

e. Plant Monitoring Desk.

f. Monitoring system for all electrical parameters of the solar PHOTO VOLTAIC plant.

g. Solar Observatory/Weather Monitoring system to check solar irradiation, Wind Speed & Ambient Temperature.

h. Protection and Metering system for the complete installation including Meters, Relays and other associated devises.

i. Earthing and Lightning Protection system for the complete installation.

j. AC/DC Power and Control Cables and accessories.

k. Communication system with existing plant installations and control rooms.

l. Nomenclature, Danger Plates, Name Plate, Instructions etc.

m. Civil works including, foundations, structures for safety of the plant and inverters as may be required.

n. Prosumer should obtain necessary permissions and approvals from the CSPDCL for installation of the Grid connected Solar Rooftop Photo Voltaic (RTS) system.

o. The contractor/Successful bidder has to prepare total project (design) documents related to this work as per MNRE formats on behalf of prosumer dept. officials will sign on application forms, if any.

Scope of Prosumer:

p. Cleaning and clearing the roof-top of any unwanted things and making it suitable for erection of the solar roof top power plant.

q. Drinking water services in the power plant complex and suitable water supply for periodic cleaning of solar PHOTO VOLTAIC modules.

Scope of the Successful Bidder shall also include:

r. Site Survey, Measurement of solar isolation and other relevant parameters required for design of each system.

s. Complete Design, engineering, preparation and submission of drawings Equipment and material specification preparation.

t. Procurement and expediting of all supplies and Delivery of equipment and material to each job site.

u. Pre-commissioning & Commissioning of all supplied Equipment and Test running of Grid Connect Rooftop Solar Photovoltaic system.

v. Any other items not specifically mentioned in the specification but which are required for erection, testing and commissioning and satisfactory operation of the solar power plant are deemed to be included in the scope of the specification unless specifically excluded on turnkey basis.

w. Provision of Safety items like hand gloves, shock treatment charts, rubber mats, danger/caution boards.

x. Supply of all commissioning spares and Supply of special tools and tackles.

y. Project management including project administration, project coordination, scheduling, progress reporting to employer and adhering to safety practises during erection, commissioning and subsequent operation and maintenance of the system including fire prevention.

z. Operation and Maintenance Manual:

An Operation, Instruction and Maintenance Manual in English/Hindi languages should be provided with the Solar PHOTO VOLTAIC projects. The following minimum details must be provided in the Manual: -

(i) Basic principles of Photovoltaic.

(ii) A small write-up (with a block diagram) on the Solar PHOTO VOLTAIC project - its components, PHOTO VOLTAIC module, inverter, junction boxes and expected performance shall be provided.

(iii) Type, Model number, Voltage & capacity of inverter, used in the system.

(iv) The make, model number, country of origin and technical characteristics of the entire component are required to be provided.

(v) Clear instructions on regular maintenance and troubleshooting of the Solar PHOTO VOLTAIC Projects.

(vi) DO's and DONT's.

(vii) Name, address and Mobile No. of the contact person for repair and maintenance in case of non-functionality of the RTS Projects.

3. SOLAR PHOTO VOLTAIC MODULES

RTS CRYSTALLINE MODULES

3.1. All the modules should contain the following clear and indelible marking laminated Inside the glass as per IS/ IEC 61730-1, clause 11.

I. Name, monogram or symbol of manufacturer;
II. Model number
III. Unique serial number
IV. Nominal wattage +-2%
V. Year and country of origin
VI. Brand name if applicable

Other details as per IS/IEC 61730-1 clause 11 should be provided at appropriate place. The actual Power Output Pmax shall be mentioned on the label pasted on the back side of PV Module. In case of thin film modules information need not be provided laminated inside the glass, however, it should be provided as per IS/IEC 61730-1 clause 11 at an appropriate place with clear and indelible marking.

In addition to the above, the following information should also be provided

- Polarity of terminals or leads (colour coding is permissible) on junction Box housing near cable entry or cable and connector.
- The Maximum system voltage for which the module is suitable to be provided on the back sheet of the module.

3.2 The PHOTO VOLTAIC modules used must qualify to the latest edition of IEC PHOTO VOLTAIC module qualification test or equivalent BIS standards Crystalline Silicon Solar Cell Modules IEC 61215/IS14286. In addition, the modules must conform to IEC 61730 Part -2- requirements for construction & Part 2 – requirements for testing, for safety qualification or equivalent IS.

a) For the PHOTO VOLTAIC modules to be used in a highly corrosive atmosphere throughout their lifetime, they must qualify to IEC 61701/IS 61701.

b) The total solar PHOTO VOLTAIC array capacity should not be less than allocated capacity (kWp) and should comprised of solar crystalline modules of minimum 300Wp and above wattage. Module capacity less than minimum 300Wp should not be accepted.

c) Protective devises against surges at the PHOTO VOLTAIC module shall be provided. Low voltage drop bypass diodes shall be provided.

d) PHOTO VOLTAIC modules must be tested and approved by one of the IEC authorized test centres.

e) The module frame shall be made of corrosion resistant materials, preferably having anodized aluminium.

f) The bidder shall carefully design & accommodate requisite numbers of the modules to achieve the rated power in his bid. CSPDCL/prosumers shall allow only minor changes at the time of execution.

g) Other general requirement for the PHOTO VOLTAIC modules and subsystems shall be the Following:

i. The rated output power of any supplied module shall have tolerance of +/- 3%.

ii. The peak-power point voltage and the peak-power point current of any supplied module and/or any module string (Series connected modules) shall not vary by more than 2 (two) percent from the respective arithmetic means for all modules and/or for all module strings, as the case may be.

iii. The module shall be provided with a junction box with either provision of external screw terminal connection or sealed type and with arrangement for provision of by -pass diode. The box shall have hinged, weather proof lid with captive screws and cable gland entry points or may be of sealed type and IP-65 rated.

iv. IV curves at STC should be provided by bidder.

WARRANTIE:

a) Material Warranty:

i. Material Warranty is defined as: The manufacturer should warrant the Solar PV Module(s) to be free from the defects and/or failures specified below for a period not less than twenty five (25) years from the date of sale to the original Prosumer/customer ("Customer"). However, excluding Solar PV Module(s) comprehensive warranty for installed plant shall be 05 years from commissioning of plant.

ii. Defects and/or failures due to manufacturing.

iii. Defects and/or failures due to quality of materials.

iv. Non conformity to specifications due to faulty manufacturing and/or inspection processes. If the solar Module(s) fails to conform to this warranty, the manufacturer will repair or replace the solar module(s), at the Owners sole option.

b) Performance Warranty:

The predicted electrical degradation of power generated not exceeding 20% of the minimum rated power over the 25-year period and not more than 10% after ten years period of the full rated original output.

4. MODULE MOUNTING STRUCTURE:

a. The module alignment and tilt angle shall be calculated to provide the maximum annual energy output. This shall be decided based on the location of array installation.

b. The structure shall be designed to allow easy replacement of any module and shall be in line with site requirement.

c. The structures shall be fixed to the foundation in such a manner that, in future is required they can be easily relocated to a different foundation.

d. The mounting structure shall be designed for simple mechanical and electrical installation. It shall support RTS modules at a given orientation, absorb and transfer the mechanical loads to the base properly.

e. The mounting steel structure shall be as per latest BIS 2062 (amended up to date) and galvanization of mounting structure shall be in compliance of BIS 4759 (amended up to date).

f. The array structure shall be so designed that it will occupy minimum sparse without sacrificing the output from RTS panels at the same time.

g. The bidder shall be designed Module Mounting Structure as per MNRE norms for normal / plain RCC roofs.

h. If required the bidder shall be designed High Raised Module Mounting Structure with minimum 10Ft height towards south direction and it is to be with stand 150KMPh wind speed and also maintain the alignment and tilt angle as per MNRE norms. The structure designs are to be approved by Govt. approved / empanelled structural Engineer for specific/ required locations.

i. Nut & bolts, supporting structures including Module Mounting Structures shall have to be adequately protected from atmosphere and weather prevailing in the area.

j. All fasteners shall be of stainless steel of grade SS 304.

k. The Mounting structure shall be grounded properly using GI strips and maintenance free earthing kit.

l. The Mounting structure shall be so designed to withstand the speed for the wind zone of the location where a PHOTO VOLTAIC system is proposed to be installed (wind speed of 150 kM/ hour). It may be ensured that the design has been certified by a recognized Lab/ Institution in this regard and submit wind loading calculation sheet to CREDA. Suitable fastening arrangement such as grouting and calming should be provided to secure the installation against the specific wind speed.

m. IS 800-2007 shall be followed for structural design.

n. RTS module mounting structure shall be fixed type with provision of manual correction in tilt angle which shall be made after every 3 months to get maximum output. Azimuth shall be 0-degree True south.

o. Hot dipped Galvanized Steel Structural with minimum 80 microns of galvanization must be considered for all type of structural steel proposed for the power plant

p. Design drawings with material Selected shall be submitted for prior approval of the employer.

q. The Bidder shall specify installation details of the PHOTO VOLTAIC modules and the support structures with appropriate diagram and drawings.

5. STRING COMBINER BOX OR ARRAY JUNCTION BOXES

a. The junction Boxes shall have suitable arrangement for the followings: -

- Combine groups of modules into independent charging sub-arrays that will be wired into the controller.
- Provide arrangement for disconnection for each of the groups.
- Provide a test point for each sub-group for quick fault location.
- To provide group array isolation.

b. The string combiner box/ junction box shall be dust proof, vermin proof, and waterproof and made of Polycarbonate Plastic.

c. The terminal will be connected to copper bus -bar arrangement of proper size to be provided. The junction boxes shall have suitable cable entry points fitted with cable glands of appropriate sizes for both incoming and outgoing cables.

d. Suitable markings shall be provided on the bus -bars for easy identification and cable ferrules will be fitted at the cable termination points for identification.

e. The string combiner box/ junction box shall be with protection class IP 65 for mounting outside in Open weather condition.

f. Each string combiner box/ junction box will have suitable Reverses Blocking Diodes of maximum DC blocking voltage of 600V / 1000V, whichever cause's less power loss, with suitable arrangement for its connecting.

g. The string combiner box/ Array junction Box will also have suitable surge protection devise.

h. The current carrying ratings of the string combiner box/ junction box shall be suitable with adequate safety factor, to inter connect the Solar PHOTO VOLTAIC system corresponding to the project capacity, as designed by the Bidder.

i. Necessary sensors and transducers shall be provided in the string combiner boxes to facilitate monitoring of all string parameters in the data acquisition system.

j. String level remote monitoring facility shall be incorporated to monitor generation and faults at string level.

6. INVERTERS / POWER CONDITIONING UNIT (PCU)

a. The PCU / Grid Connected Inverter shall carry a warranty of minimum 05 years.

b. Inverter/PCU shall be non-transformer string inverters, grid connected in nature, shall consist of MPPT controller. Inverters shall be decided based on array design/suitable rating in case of string design, associated control and protection devises etc all integrated into PCU. It shall provide necessary protections for Grid Synchronization. The Inverters should convert DC power produced by RTS modules in to AC power and must synchronize automatically its AC output to the exact AC Voltage and frequency of Grid.

c. The DC energy produced has to be utilized to maximum and supplied to the bus for inverting to AC voltage to extract maximum energy from solar array and provides 3-ph, 400V AC shall have to comply the relevant CEA regulations.

d. The Inverters shall be of very high quality having efficiency not less than 97% and shall be capable of running in integrated mode.

e. Degree of protection of the indoor Inverters shall be at least IP -42 and that of outdoor at least IP-65.

f. Built in with data logging to remotely monitor plant performance through external PC shall be provided (PC shall be provided along with RTS Plant).

g. The Inverters should be designed to be completely compatible with the RTS array voltage and Grid supply voltage.

h. The dimension, weight, foundation details etc. of the PCU shall be clearly indicated in the detailed technical specification.

i. The PCU shall be capable of complete automatic operation, including wake-up, synchronization & shut down independently& automatically.

j. Both AC &DC lines shall have suitable fuses & surge arrestors and Bidder to allow safe start up and shut down of the system. Fuses used in the DC circuit should be DC rated.

k. Inverters/PCU shall operate in sleeping mode when there will no power connected.

l. **Protections:**

- Over voltage both at input & output
- Over current both at input & output
- Over/under grid frequency
- Heat sink over temperature
- Short circuit
- Protection against lightning
- Surge arrestors to protect against Surge voltage induced at output due to external sources
- Anti- Islanding Protection
- And other required protections
- It should have user friendly LED/LCD or touch display for programming and view on line parameters such as:
- Inverter per phase Voltage, current, kW, kVA and frequency,
- Grid Voltage and frequency,
- Inverter (Grid) on Line status,
- PHOTO VOLTAIC panel voltage,
- Solar charge current
- Individual power stage heat sink and cabinet temperature,
- Inverter Import export kWh summation
- Solar kWh summation
- Inverter on
- Grid on
- Inverter under voltage/over voltage
- Inverter over load
- Inverter over temperature

m. PCU shall be capable to synchronize independently & automatically with grid power line frequency to attain synchronization and export power generated by solar plant to grid.

n. The PCU shall be capable of operating in parallel with the grid utility series and shall be capable of interrupting line fault currents and line to ground fault currents.

o. The PCU shall be able to withstand an unbalanced load conforming to IEC standard (+/-5% voltage) and relevant Indian electricity condition. The PCU shall include appropriate self-protective and self-diagnostic features to protect itself and the PHOTO VOLTAIC array from damage in the event of PCU component failure or from parameters – beyond the PCU's safe operating range due to internal or external cause's. The self-protective features shall not allow signals from the PCU front panel to cause the PCU to be operated in a manner which may be unsafe or damaging. Faults due to malfunctioning within the PCU, including commutation feature, shall be cleared by the PCU protective devises and not by the existing site utility grid services circuit breaker.

p. The Inverter shall go to shutdown/standby mode, with its contacts open, under the following conditions before attempting an automatic restart after an appropriate time delay.

- When the power available from the PHOTO VOLTAIC array is insufficient to supply the loses of the PCU, the PCU shall go to standby/shutdown mode.

- The PCU control shall prevent excessive cycling of shut down during insufficient solar radians.

q. Operation outside the limits of power quality as described in the technical data sheet should cause the power conditioner to disconnect the grid. Additional parameters requiring automatic disconnection are

- Over current
- Earth fault
- And revere power
- In each of the above caches, tripping time should be less than a few Second's

r. Detailed technical description of the complete unit of offered Inverter should be furnished with bid document Following Technical documents of Inverter shall be supplied for approval after placement of order

- Detailed technical description of the complete unit
- Instructions for installation and operation
- Electrical diagrams of all internal cabling necessary for installation, maintenance and fault finding.
- Description of electrical and mechanical characteristics of units
- Maintenance and fault-finding procedure's.
- Safety precautions
- Software for data monitoring with detailed description.
- Details of data acquisition
- Factory test reports in details on various parameters.
- Trouble shooting procedure's
- All maintenance requirements and their schedules, including detailed instructions on how to perform each task.
- Detailed schematics of all power instrumentation and control equipment and subsystems along with their interconnection diagrams. Schematics shall indicate wiring diagrams, their numbers and quantities, type and ratings of alt components and subsystems.
- A detailed bill of materials which shall list components model numbers, quantities and manufacturer of each supplied item.
- All documents and write ups shall be in English. They shall be clean and legible, and must be checked, signed, approved and dated by a competent representative of the Bidder.

s. The Bidder should note that Inverters/PCU is going to be installed in an area which is prone to hot air of 48 to 50-degreeCentigrade. Thus, the room shelters and air blower/ fan (auto operated as per requirement), if required, for Inverter will be in scope of supply. Integrated solutions into prefabricated structures or in standard metallic container may be accepted. The Bidder shall provide data sheet for Inverter/ Power Conditioning Unit along with their offer.

t. The PCU/ inverters should be tested from the MNRE approved test Centres / NABL /BIS /IEC accredited testing- calibration laboratories. In case of imported power conditioning units, these should be approved by international test houses.

u. MNRE latest additional guidelines for Inverters:

1. The inverters should be tested as per IEC standards. The following criteria should be followed:

i. The benchmarking efficiency criteria for Grid Connected (string inverters) inverter

- At nominal voltage and full load is ≥ 95%.
- For load ≥ 25% is ≥ 92%.

ii. In case of standalone / grid interactive inverter the bench marking efficiency criteria

- At full load is 85%
- For the load ≥ 25% is 80%

iii. No load loses should not be more than 5%.

2. The following tests are to be conducted on the inverters:

a) Efficiency measurement as per IS/IEC 61683 (for system with no MPPT)

b) Overall efficiency for Grid Connected inverter as per EN50530

c) Islanding Prevention test as per IS 16169/IEC 62116

d) PHOTO VOLTAIC system chrematistics of utility interphase as per IEC 61727 (the system should meet all the Clauses as per the slandered except the Clause 5.2.2 of IEC 61727. In case of Clause 5.2.2 it should with stand the over /under frequency in the range of 47 to 52Hz)

e) Overall charge controller efficiency should be ≥85% at ≥10% load and ≥92% at full load.

f) System should have IP 65 Certification for outdoor used IP 21 & 22 for indoor used.

g) Environmental testing as per IEC 60068-2-(1,2,14 & 30).

7. All the test laboratories should provide a clear-cut verdict in the end of the test report regarding conformity / non conformity of the system against the standard / specifications for which it has been tested. Any discrepancy in the specifications of sample submitted, the test labs should specify the same in the report.

8. ENERGY METERING:

(i) **At interface point: Applicable for those prosumer's connections not having bidirectional facility on already installed meters at interface points before execution of project and prosumer wishes to procure the meter itself**

Digital Communicable Energy Meters shall be provided for measuring power consumption by grid side loads on continuous basis and register the cumulative energy on interval basis (Programmable / adjustable), daily, monthly and annually the energy generated. The Energy Meter shall have default display of Cumulative kWh. The following parameters to be displayed on-demand:

a. The Energy Meter shall have 4-quadrant measurement method and shall be suitable for 1ph 2wire, 3ph, 3wire as well as 3ph, 4wire connection.

b. The meter shall also record Maximum Demand at set interval. TOD (Time of Day) measurement shall also be possible in KWH/KVAH.

c. The energy meter shall communicate with the Data Acquisition System / other plant network over DLMS protocol-15959 and having Bluetooth facility.

d. Meters shall comply with the requirements of CEA Regulations, 2006 on Installation & Operation of Meters.

The functional Specification of the energy meters shall be as follows.

- Applicable IS: IS 13779 for 1ph 2wire/3ph, 4wire whole current meters and IS 14679 for 3ph, 4wire / HT meters depending upon accuracy of meters.
- Accuracy Class Index: 1.0 for 1ph 2wire.

- 0.5 s for 3ph, 4wire of capacity 10-60 Amp and LTCT operated meters
- Power factor range: Zero lag–unity-zero lead
- Display parameters: LCD test, KWH import, KWH export, MD in KW import, MD in KW export, Date & Time, AC(phase wise and line wise) current and voltages and power factor and frequency (Cumulative KWH will be indicated continuously by default & other parameters through push-button) . History-12 Months memory, Display-03 Months.
- Power Consumption: Less than 2VA in Voltage circuit and 1 VA for Current circuit.
- Frequency: 50 Hz with + / -5% variation
- Test Output devise: Flashing LED visible from the front
- Optical port, Bluetooth port and micro USB port.
- Billing data: Meter serial number, Date and time, KWH import, KWH export, MD in KW (both export and import), History of KWH import and export, & MD (both export & import).
- All these data shall be accessible for reading, recording and spot billing by downloading through optical port on MRI, Blue tooth on mobile app and Micro USB port.

(ii) At Generation point**:** Separate Meter shall be provided by CSPDCL at one/summation point on rental basis

9. INTEGRATION OF PHOTO VOLTAIC POWER WITH GRID:

The output power from RTS would be fed to the inverters which converts DC produced by RTS array to AC and feeds it into the main electricity grid after synchronization. In case of grid failure, or low or high voltage, solar PHOTO VOLTAIC system shall be out of synchronization and shall be disconnected from the grid. Once the DG set comes into services PHOTO VOLTAIC system shall again be synchronized with DG supply and load requirement would be met to the extent of availability of power. 4 pole isolation of inverter output with respect to the grid/ DG power connection need to be provided.

10. DATA ACQUISITION AND LOGGING

i. Data Acquisition System shall be provided for each of the solar PHOTO VOLTAIC plant.

ii. Data Logging Provision for plant control and monitoring, time and date stamped system data logs for analysis with the high quality, suitable PC. Metering and Instrumentation for display of systems parameters and status indication to be provided.

iii. Solar Irradiances: An integrating Pyranometer / Solar Cell based irradiation sensor (along with calibration Certificate) provided, with the sensor mounted in the plane of the array. Readout integrated with data logging system.

iv. Temperature: Temperature probes for recording the Solar panel temperature and/or ambient temperature to be provided complete with readouts integrated with the data logging system

v. The following parameters are accessible via the operating inter phase display in real time separately for solar power plant:

a. AC Voltage.

b. AC Output current.

c. Output Power

d. Power factor.

e. DC Input Voltage.

f. DC Input Current.

g. Time Active.

h. Time disabled.

i. Time Idle.

j. Power produced

k. Protective function limits (Viz-AC Over voltage, AC Under voltage, Over frequency, Under frequency ground fault, PHOTO VOLTAIC starting voltage, PHOTO VOLTAIC stopping voltage.

vi. All major parameters available on the digital bus and logging facility for energy auditing through the internal microprocessor and read on the digital front panel at any time) and logging facility (the current values, previous values for up to a month and the average values) should be made available for energy auditing through the internal microprocessor and should be read on the digital front panel.

vii. PHOTO VOLTAIC array energy production: Digital Energy Meters to log the actual value of AC/ DC voltage, Current & Energy generated by the PHOTO VOLTAIC system provided. Separate Meter shall be provided by CSPDCL at one/summation point on rental basis for recording of total generation. Such energy meter along with CT/PT should be of 0.5S accuracy class wherever required.

viii. Computerized DC String/Array monitoring and AC output monitoring shall be provided as part of the inverter and/or string/array combiner box or separately.

ix. String and array DC Voltage, Current and Power, Inverter AC output voltage and current (All 3 phase's and lines), AC power (Active, Reactive and Apparent), Power Factor and AC energy (All 3 phase's and cumulative) and frequency shall be monitored.

x. Computerized AC energy monitoring shall be in addition to the digital AC energy meter.

xi. The data shall be recorded in a common work sheet chronologically date wise. The data file shall be MS Excel compatible. The data shall be represented in both tabular and graphical form.

xii. All instantaneous data shall be shown on the computer screen.

xiii. Software shall be provided for USB download and analysis of DC and AC parametric data for individual plant.

xiv. Provision for Internet monitoring and download of data shall be also incorporated.

xv. Remote server and Software for Centralized Internet monitoring system shall be also provided for download and analysis of cumulative data of all the plants and the data of the solar radiation and temperature monitoring system.

xvi. Ambient / Solar PHOTO VOLTAIC module back surface temperature shall be also monitored on continuous basis.

xvii. Simultaneous monitoring of DC and AC electrical voltage, current, power, energy and other data of the plant for correlation with solar and environment data shall be provided.

xviii. Remote Monitoring and data acquisition from ranging of 1kWp through Remote Monitoring System software at the Prosumer department/CSPDCL location with latest software/hardware configuration and Services connectivity for online / real time data monitoring/control complete to be supplied and operation and maintenance/control to be ensured by the supplier. Provision shall be kept for interfacing these data on CSPDCL Server and portal in future.

11. POWER & CONTROL CABLES

Cables of appropriate size to be used in the system shall have the following characteristics:

i. Shall meet IEC 60227/IS 694, IEC 60502/IS1554 standards

ii. Temp. Range: $-10^{o}C$ to $+80^{o}C$.

iii. Voltage rating 660/1100V

iv. Excellent resistance to heat, cold, water, oil, abrasion, UV radiation

v. Flexible

vi. Sizes of cables between array interconnections, array to junction boxes, junction boxes to Inverter etc. shall be so selected to keep the voltage drop (power loss) of the entire solar system to the minimum. The cables (as per IS) should be insulated with a special grade PVC compound formulated for outdoor use.

vii. Cable Routing/ Marking: All cable/wires are to be routed in a GI cable tray and suitably tagged and marked with proper manner by good quality ferule or by other means so that the cable easily identified.

viii. The Cable should be so selected that it should be compatible up to the life of the solar PHOTO VOLTAIC panels i.e. 25years.

ix. The ratings given are approximate. Bidder to indicate size and length as per system design requirement. All the cables required for the plant provided by the bidder. Any change in cabling sizes if desired by the bidder/approved after citing appropriate reasons. All cable schedules/layout drawings approved prior to installation.

Multi Strand, Annealed high conductivity copper conductor PVC type 'A' pressure extruded insulation or XLPE insulation. Overall PVC/XLPE insulation for UV protection Armoured cable for underground laying. All cable trays including covers to be provided. All cables conform to latest edition of IEC/ equivalent BIS Standards as specified below: BoS item / component Standard. Description Standard Number Cables General Test and Measuring Methods, PVC/XLPE insulated cables for working Voltage up to and including 1100 V ,UV resistant for outdoor installation IS / IEC 69947.

x. The size of each type of DC cable Selected shall be based on minimum voltage drop however; the maximum drop shall be limited to 1%.

xi. The size of each type of AC cable Selected shall be based on minimum voltage drop however; the maximum drop shall be limited to 2 %.

12. DC DISTRIBUTION BOARD:

12.1 DC Distribution panel to receive the DC output from the array field.

12.2 DC DPBs shall have sheet from enclosure of dust & vermin proof conform to IP 65 protection. The bus bars are made of copper of desired size. Suitable capacity MCBs/MCCB shall be provided for controlling the DC power output to the PCU along with necessary surge arrestors.

13. AC DISTRIBUTION PANEL BOARD:

a) AC Distribution Panel Board (DPB) shall control the AC power from PCU/ inverter, and should have necessary surge arrestors. Interconnection from ACDB to mains at LT Bus bar while in grid connected mode.

b) All switches and the circuit breakers, connectors should conform to IEC 60947, part I, II and III /IS60947 part I, II and III.

c) The changeover switches, cabling work should be undertaken by the bidder as part of the project.

d) All the Panel's shall be metal clad, totally enclosed, rigid, floor mounted, air - insulated, cubical type suitable for operation on three phase / single phase, 415 or 230 volts, 50 Hz

e) The panels shall be designed for minimum expected ambient temperature of 45 degree Celsius, 80 percent humidity and dusty weather.

f) All indoor panels will have protection of IP54 or better. All outdoor panels will have protection of IP65 or better.

g) Should conform to Indian Electricity Act and rules (till last amendment).

h) All the 415 AC or 230 volts devises / equipment like bus support insulators, circuit breakers, SUCCESSFUL BIDDERs, VTs etc., mounted inside the switchgear shall be suitable for continuous operation and satisfactory performance under the following supply conditions

Variation in supply voltage	+/- 10 %
Variation in supply frequency	+/- 3 Hz

14. PCU/ARRAY SIZE RATIO:

14.1 The combined wattage of all inverters should not be less than rated capacity of power plant under STC.

14.2 Maximum power point tracker shall be integrated in the PCU/inverter to maximize energy drawn from the array.

15. EARTHING AND LIGHTNING PROTECTION SYSTEM

The system should be provided with all necessary protections like earthing, Lightning, and grid islanding as follows:

15.1. LIGHTNING PROTECTION:

The Grid connected Rooftop solar photovoltaic system shall be provided with lightning & overvoltage protection. The main aim in this protection shall be to reduce the over voltage to a tolerable value before it reaches the PHOTO VOLTAIC or other sub system components. The source of over voltage can be lightning, atmosphere disturbances etc. The entire space occupying the Rooftop solar photovoltaic array shall be suitably protected against Lightning by deploying required number of Lightning Arrestors. Lightning protection should be provided as per IEC 62305standard. The protection against induced high-voltages shall be provided by the use of metal oxide varistors (MOVs) and suitable earthing such that induced transients find an alternate route to earth.

15.2. SURGE PROTECTION:

Internal surge protection shall consist of three MOV type surge arrestors connected from +ve and –ve terminals to earth (via Y arrangement).

15.3. EARTHING PROTECTION:

i. Each array structure of the PHOTO VOLTAIC yard should be grounded/ earthed properly as per IS:3043-1987. In addition, the lighting arrester/masts should also be earthed inside the array field. Earth Resistance shall be tested in presence of the representative of CSPDCL/CSPDCL as and when required after earthing by calibrated earth tester. PCU, ACDB and DCDB should also be earthed properly.

ii. Earth resistance shall not be more than 5 ohms. It shall be ensured that all the earthing points are bonded together to make them at the same potential.

15.4 GRID ISLANDING:

i. In the event of a power failure on the electric grid, it is required that any independent power-producing inverters attached to the grid turn off in a short period of time. This prevents the DC-to-AC inverters from continuing to feed power into small Sections of the grid, known as “islands.” Powered islands present a risk to workers who may expect the area to be unpowered, and they may also damage grid-connected equipment. The Rooftop PHOTO VOLTAIC system shall be equipped with islanding protection. In addition to disconnection from the grid (due to islanding protection) disconnection due to under and over voltage conditions shall also be provided.

ii. A manual disconnect 4pole isolation switch beside automatic disconnection to grid would have to be provided at utility end to isolate the grid connection by the utility personnel to carry out any maintenance. This switch shall be locked by the utility personnel.

16. POWER CONSUMPTION:

Regarding the generated power consumption, priority need to give for internal consumption first and thereafter any excess power can be exported to grid. Finalization of rate is not under the purview of CSPDCL. Decisions of appropriate authority like MNRE, CSERC will be followed.

17. CIVIL WORKS:

This Section of the specification covers entire civil engineering work for technological structures, new equipment and facilities for all production, auxiliary and ancillary units, foundation for all structures and main equipment described elsewhere in this specification on a Turnkey basis for installation of the Solar PHOTO VOLTAIC power plant.

The scope shall cover complete civil engineering work for the proposed plant within its battery limit, on turnkey basis including design, supply of all materials and execution.

18. PROJECT SCHEDULE & PROGRESS MONITORING

Bidder shall submit details regarding overall schedule, planned in weeks, covering components to concerned authority of CREDA, which shall broadly be as follows:

i. Basic engineering and approval

ii. Preparation and issue of ordering / technical specifications for sub vendors

iii. Placement of orders on sub-vendors

iv. Detailed design and engineering

v. Submission and approval of drawings for civil & structural works

vi. Manufacture and supply of all equipment/ piping/ cables, etc

vii. Fabrication and supply of building and technological structures

viii. Submission and approval of erection drawings and manuals

ix. Erection of building and technological structures

x. Erection of equipment, piping, cables, etc.

xi. Testing and commissioning

The major milestones for the project are to be highlighted in the schedule. The Bidder shall submit an overall erection plan for the plant and equipment under his scope of supply along with the tender.

The Successful Bidder shall have to submit the Level-II network schedule both in hard and editable soft copy (in MS Project/Primavera) covering further details of construction, fabrication and erection activities, area-wise, for approval and finalization of the Employer / Consultant. The format of progress report to be discussed and agreed.

The Successful Bidder has to complete the work as per terms and conditions/Specifications specified in this tender and provisions stipulated in relevant MNRE guidelines, CSERC, CEA regulations, Indian electricity Grid code.

19. DRAWINGS, DATA AND DOCUMENTS

The Bidder shall furnish following documents/ information along-with the offer.

- General description of equipment offered specifying the important features, make, technical parameters, materials of construction, etc. to enable the owner to have proper understanding of the equipment offered and its operation.
- Technical literature, catalogue and publications
- Layout of Complete Power Plant Installation showing location of all major sub-systems
- Single line diagrams of all systems and sub systems of the entire power plant including that of the MMS structures.

- Typical general arrangement and foundation details
- General lighting scheme
- Type tests Certificates of all major equipment's like switchgear, Inverters, Solar Modules
- Single line schematic diagram of electrical system for grid interfacing and grid interconnection from solar plant.
- General arrangement drawings and circuit diagrams of Module, Inverters, Transformers, and overall solar plant arrangement
- The Bidder shall submit a list of all drawings and documents proposed to be submitted. The list will be approved by employer/ consultant and may be modified if necessary
- Each drawing/ document in the list shall be identified with a Serial number, description and scheduled date of submission.
- Equipment layout plan
- Single line diagram with rating of all equipment, cable sizes and details of protection and metering
- Front view, general arrangement of equipment with plan and Sectional views; clearly showing the position of various components, and clearance between components. The make and type of components, together with vital technical parameters shall also be furnished along with GA drawings
- Control, alarm, indications, interlocking and other schematics
- Lighting layout drawings with illumination levels, type and make of fittings.
- Wiring terminal plan drawings with cable connections
- Earthing scheme and layout of earthing network with design calculations, for outdoor switch yard and other areas/premises, if applicable.
- Cable layout drawings, cable channels details
- Installation drawings of all equipment with layout of equipment, cables, lighting systems, (if applicable) and earthing network.
- Calculation for design of LT bus duct, sizing of bus bars, bus bar supports considering the temperature rise and fault current.
- Calculations for design of supporting structures for outdoor switchyard w.r.t. wind pressure, short circuit forces etc. (if applicable).

Instruction Manuals for 05 years CMC (Operation & Maintenance)

- Complete and comprehensive instruction manuals for operation and maintenance of the equipment with drawings. This shall include the following:
- Preventive maintenance schedule for each equipment
- Procedure for shut down and start-up of the entire power plant
- Safety procedures for safe operation of equipment and complete system
- Specification of equipment's installed.
- Test procedures for site tests

Upon installation and commissioning supplier shall incorporate revisions/ modifications if any in the reproducible and submit 'as built' drawings for employer's record as per general condition of this tender.

20. DELIVERY

The commission of the project is limited to 6 months from the date of application of Prosumer. No further extension shall be provided except under Force Majeure.

21. INSPECTION

Manufacturing progress review, inspection & testing of equipment covered under the technical specification shall be carried out by the Employer at the manufacturers' works/premises prior to dispatch, to ensure that their quality & workmanship are in conformity with the tender specifications and approved drawings.

The Bidder shall furnish the quality assurance plan for equipment separately with suggestive stages and hold points for undertaking inspection and testing by the Employer. Total list of plant & equipment of the order shall be submitted to the Employer prior to submission of quality assurance plan

The Employer reserves the right to visit at any stage of manufacture of plant and equipment and ask for additional inspection & tests beyond approved quality assurance plan, if it is found necessary after completion of detailed design & engineering and approval of drawings.

22. TESTS AND INSPECTION

Following tests shall be conducted on equipment after erection and before energizing from point of view of completeness in the presence of employer:

- Visual inspection of total system
- Checking of continuity of power and control cables.
- Checking of insulation resistance for inter-connected links or cables.
- Checking of protective schemes
- Setting of relays, and the checking of their operation with one lower and one higher Setting.
- Checking of control scheme of breakers, etc. as per approved drawings and as per actual requirement
- Checking of alarm scheme by simulation of faults.
- Checking of name plate data of complete system.
- Verification of earthing resistance.
- Checking of cable terminations and laying, dressing etc.
- Checking for safe accessibility of components.

23. INSTALLATION GUIDELINES

- All the electrical installations shall conform to the Indian Electricity Act, Indian Electricity Rules and regulations.
- The mechanical and civil installation shall conform to the applicable Acts and Rules of
- Corresponding Inspectorate and other relevant authorities, if any.
- Provision of cable glands, ferrules, cable lugs, tags, sealing kits shall be arranged.
- Supply and installation of first aid boxes, shock treatment charts, rubber mats, and key board etc.
- Erection, testing and commissioning of various equipment shall be done strictly as per manufacturer's instructions.
- Cables shall be laid in conduits as per the electrical installation procedure’s
- Interplant cable shall be laid to trenches, tunnel or overhead structure as per site condition. Digging and refilling of cable trenches, required erection accessories shall be in the scope of work of the Bidder.
- Cable shall be fixed to cable racks or cable trays or run on cleats or in conduits, which shall be fixed to concrete brick-work or steel structure as required for proper support of the cables, easy accessibility and neatness of appearance.
- Perforated trays shall be provided for control cables.
- Approved type of danger boards, boards inscribing 'ISOLATED', 'DO NOT CLOSE, MEN AT

- WORK' in English, Hindi and Local languages shall be provided in sufficient numbers.
- Special care shall be taken to make the enclosed equipment protected against entry of rats, lizard, and creeping reptiles which may create electrical short circuits.
- Approved cable markers of reinforced concrete shall be provided and fixed to mark each and every diversion of all buried cable routes. A marker shall also be placed every 50 meters along straight portions of each route. A concrete cable marker shall also be provided and fixed to mark the position of every buried joints.
- Distinguishing labels of non-corrodible material marked in accordance with the cable numbers of the cabling diagram shall be permanently attached to each end of every cable. The phase or polarity of each power cable core at the cable ends shall be identified.
- Mounting of Inverters, Electrical panels, Dc and Ac junction boxes, Monitoring systems shall be done with proper mounting procedures with neat look.

24. ERECTION, TESTING, COMMISSIONING

- The scope of project awarded to successful bidder by Prosumer shall be complete erection of the equipment, cables, auxiliary systems and sub systems under the project. The Bidder shall make all arrangements to deliver the equipment at site by wagons/ trucks/ trailers, build his own stores (covered, uncovered, air-conditioned, if necessary) for the proper storage of equipment, maintain the stores and all related documents and records, transport the equipment to site for erection purpose. The Bidder also shall make all Security arrangements.
- The successful bidder shall be responsible for proper, quick retrievable and neat storage and also undertake the conservation of all consignments including damaged boxes. During storage of equipment, the Bidder shall take into account deterioration and carry out the re-conservation of the complete equipment/parts/supplies as may be necessary as per the storage instructions of the Manufacturer of equipment/ components. The successful bidder shall also supply the consumables required for such re-conservation work and repair/ replace parts required thereof for the proper functioning of the equipment after erection and commissioning.
- The successful bidder shall retrieve the equipment/ materials from stores and transport the same to erection site.
- The successful bidder shall unpack and do visual checking against physical damages to the equipment/ cases, clean equipment before start of erection. Damage/ shortage, if any, shall be reported to the CREDA and shall be rectified/replaced expeditiously, so as not to upset the erection and commissioning schedule.
- The successful Bidder shall provide all necessary erection equipment and tools & tackles including material handling equipment, cranes, compressors and other equipment and instruments and consumables, all commissioning equipment and instruments, welding equipment, winches, alignment tools, precision levels, etc., which may be required for carrying out the erection and commissioning work efficiently.
- All instruments shall be properly calibrated before use. Unless otherwise specified, the above erection equipment/ materials shall be the property of the successful Bidder. However, CREDA prior permission shall be required for removal of these erection equipment/ materials from the site.
- The successful bidder shall ensure that proper procedures and documentation is maintained at entry gate of Prosumer's premises for such items as might be carried back by the successful bidder after completion of work.
- The successful bidder shall provide erection consumables like oxygen and acetylene gas, welding rods, solder lugs, oil, grease, kerosene, cotton waste, etc. required for erection of equipment and steel structures.
- The successful bidder shall construct and maintain his own site offices and stores as required for the work and arrange for maintaining in the area placed at the successful bidder disposal in a neat manner.

- The successful bidder shall provide his scheme for mobilization with Bar Chart indicating clearly the resource's, manpower and machinery proposed to be deployed to ensure timely completion of work and quality of workmanship
- On request, Prosumer may help the successful bidder by providing any special handling/construction equipment needed in the interest of work subject to availability and on payment of hire charges and other conditions of Prosumer. The charges shall be recovered from any bill of the successful bidder due immediately thereafter.
- All safety, health and pollution control measures as required to be adopted as per the Statutory Regulations and the Safety conditions for successful bidder issued along with the tender or otherwise required or implied by statutory regulations or practises shall be strictly followed by the successful bidder during the execution of the project. The successful bidder shall set up a suitable safety organization of his own at site in this regard.
- Labour facilities such us shelter, food, drinking water shall be arranged by the successful bidder.
- Auxiliary power supply facility for system testing & commissioning, Inverter auxiliary, luminaries, control room, Inverter room, site office and other power consuming areas shall be provided by the Prosumer.
- The results of pre-commissioning test, applicable start-up tests shall be carried out by the successful bidder in presence of the prosumer. The cumulative report shall be duly submitted by the successful bidder/Prosumer to CREDA.
- CREDA & CSPDCL shall deploy authorized officer/personnel for commissioning of plant. The commissioning of the Rooftop Solar Photovoltaic System shall be carried out by the CREDA & CSPDCL after declaration of completion of the work by both successful bidder and prosumer in line with the provisions stipulated in CSERC (Grid Interactive Distributed Renewable Energy Sources) Regulations, 2019, CEA regulations,2006, prevailing CSERC's supply code and Indian Electricity grid code and its amendment issued time to time followed by successful testing and performance tests of installed system.
- The successful bidder shall rectify the defects observed during the commissioning period promptly.
- Successfully commissioning as be accepted if the complete system remains synchronized with the grid for a period of 48 hours without any disturbance or interruption. During this period, the system shall generate power during sunshine hours and export power to the grid and during dark hours shall remain synchronized with the grid. If there is outage isolation from the grid during this period due to defects in the system, then commissioning period shall start afresh after rectification of the said defect. However if the ambient or the grid parameter are beyond the specified limits if any shall not be considered as stop page.
- The Commissioning Certificate shall be issued by the CSPDCL subject to relevant conditions.

25. CONNECTIVITY

(i) The maximum capacity for interconnection of the project with the grid at a specific voltage level shall be governed by the prevailing CSERC's Supply Code and amended from time to time.

(ii) The maximum permissible capacity for Grid–connected Rooftop Solar Photo Voltaic system shall not exceed the sanctioned load or contract demand of the Prosumer.

(iii) If Prosumer may have voltage levels other than above, then CSPDCL may be consulted before finalization of the voltage level and specification be made accordingly.

(iv) For installation of large Grid–connected Rooftop Solar Photo Voltaic system of capacity above 100 kW, the solar power can be connected at low voltage levels and stepped up to 11 kV level through the step-up transformer.

(v) If the meter installed at interface point of prosumer's premises for recording of CSPDCL's consumption already having bidirectional facility then such meter need not to be replaced.

(vi) If condition stated at (v) above is not fulfilled and prosumer wishes to procure the meter itself from open market then such meter to be installed at interface point of prosumer's premises

must be procured from CSPDCL's approved meter manufacturers. In such case, installation of the meter is to be carried out by CSPDCL after successful testing of meter by CSPDCL's lab.

26. TOOLS & TACKLES AND SPARES:

i. After completion of installation & commissioning of the power plant, necessary tools & tackles are to be provided free of cost by the successful bidder for maintenance purpose. Such list of tools and tackles to be supplied by the successful bidder(s) shall be provided to prosumer.

ii. A list of requisite spares in case of PCU/inverter comprising of a Set of control logic cards, IGBT driver cards etc. Junction Boxes. Fuses, MOVs / arrestors, MCCBs etc., along with spare Set of PV modules be indicated, which shall be supplied along with the equipment. A minimum Set of spares shall be maintained in the plant itself for the entire period of warranty and Operation & Maintenance which upon its use shall be replenished.

27. DANGER BOARDS AND SIGNAGES:

Danger boards should be provided as and where necessary as per IE Act. /IE rules as amended up to date.Three signage shall be provided one each at battery–cum-control room, solar array area and main entry from concerned building/block. Text of the signage may be finalized in consultation with CREDA & CSPDCL.

28. FIRE EXTINGUISHERS:

The fire fighting system for the proposed power plant for fire protection shall be consisting of:

a) Portable fire extinguishers in the control room for fire caused by electrical short circuits

b) Sand buckets in the control room

c) The installation of Fire Extinguishers should confirm to TAC regulations and BIS standards. The fire extinguishers shall be provided in the control room housing PCUs as well as on the Roof or site where the PHOTO VOLTAIC arrays have been installed.

29. TECHNICAL SPECIFICATIONS:

1) The Solar panels to be used in this project should be from Indian manufacturers Certified by the Ministry of New & Renewable Energy (MNRE).

2) The Solar module(s) shall carry a warranty of minimum 25years.

3) The Solar panels panel must be warranted for their output peak watt capacity which shall not be less than 90% at the end of 10 years and 80% at the end of 25years.

4) In addition any components those are to be used in the project should have the Certification of MNRE.

30. PLANNING AND DESIGNING:

i. The successful bidder should carry out Shadow Analysis at the site and accordingly design strings & arrays layout considering optimal usage of sparse, material and labour. The successful bidder should submit the array layout drawings along with Shadow Analysis Report to CREDA for approval.

ii. CREDA reserves the right to modify the landscaping design, Layout and specification of sub-systems and components at any stage as per local site conditions/requirements.

iii. The successful bidder shall submit preliminary drawing for approval & based on any modification or recommendation, if any. The successful bidder submits three Sets and soft copy in CD of final drawing for formal approval to process with construction work.

31. TRANSFORMER & NECESSARY EQUIPMENTS "IF REQUIRED":

i. The required 11KV/415V, 50 Hz Step up transformer along with all protections, switchgears, Vacuum circuit breakers, cables etc. along with applicable civil work will be in accordance of CSPDCL's norms for same work. The installation of such transformers with all protections, switchgears, Vacuum circuit breakers, cables etc and execution of works of electrical lines shall be carried out by Prosumer only through CSPDCL's registered Class -I/II/III/IV electrical contractors as applicable for the works to be executed under supervision of CSPDCL. All the major materials required to execute such work shall be procured from CSPDCL's approved vendors for such materials.

ii. The prosumer must take approval/NOC from CSPDCL prior to execution of above works.

iii. Reverse power relay shall be provided by successful bidder (if necessary) as asked by CSPDCL according to field requirement.

32. CONFIRMATION TO MNRE TECHNICAL SPECIFICATIONS AND STANDARDS:

The Tender should ensure that all components and systems used under this scheme shall strictly adhere to the Technical Specifications and Guidelines issued by the MNRE, and as amended from time to time.

SAMPLE FORMS & FORMATS FOR BID SUBMISSION

Covering Letter
(The covering letter should be on the Letter Head of the Bidding Company)
BIDDERS UNDERTAKING COVERING LETTER
(Letter shall be submitted on Bidder(s) Letter Head)

Ref:..... **Date:.....**

TO,
The CE (Grid Connected Section, RE-II),
Chhattisgarh State Renewable Energy Development Agency (CREDA)
VIP (Airport) Road, Near Energy Education Park
P.O.Deopuri, Raipur-492015,Chhattisgarh, India

Dear Sir,

Sub: **Design, Supply, Installation, Testing & Commissioning Including 05 year Comprehensive Warranty for complete installed plant and further 20 years extended warranty for solar PV module and 05 years CMC of 1kwp to 500kwp Grid Connected Rooftop Solar System as per tender under reference for all the willing consumers excluding government connections in Chhattisgarh State through Rate Contract Programme under CAPEX Mode**

Tender Reference: No:-...../GCSRT_1-500kWp/CAPEX/2019-20/Raipur, Date----------

1. We have examined the Tender for Design, Supply, Installation, Testing Commissioning Including 05 year Comprehensive Warranty for complete installed plant and further 20 years extended warranty for solar PV module and Commissioning of Grid connected Solar Power plants as specified in the Tender. We undertake to meet the requirements and Service's as required and as Set out in the Tender document.
2. We attach our Techno-commercial Bid completed in all respect as required under reference Tender and submitting **"Price/Financial Bid" online** at required location on CSPDCL e-tendering portal both of which together constitute our proposal, in full conformity with the referred Tender.
3. We have read the provisions of Tender and confirm that these are acceptable to us. We further declare that additional conditions, variations, deviations, if any, found in our response shall not be given effect to.
4. We undertake, if our Bid is accepted, to adhere to the requirements as specified in the Tender or such modified plan as may subsequently be agreed.
5. We agree to unconditionally accept all the terms and conditions Set out in the Tender document and also agree to abide by this Bid response for a period as mentioned in the Tender from the date fixed for bid opening and it shall remain binding upon us with full force and virtue till assigned empanelment period on empanelled. This Bid response, together with your written acceptance thereof in your notification of empanelment, shall constitute a binding contract with CREDA.
6. We affirm that the information contained in the Technical Bid or any part thereof, including its schedules, and other documents, etc. delivered or to be delivered to CREDA is true, accurate, and complete. This proposal includes all information necessary to ensure that the statements therein do not in whole or in part mislead CREDA as to any material fact.
7. We also agree that you reserve the right in absolute Sense to reject all or any of the products/ Services specified in the bid response without assigning any reason whatsoever.
8. It is hereby confirmed that I/We are entitled to act on behalf of our company/ organization and empowered to sign this document as well as such other documents, which may be required in this connection.
9. We agree to use only indigenous photo-voltaic modules for completion of work of residential prosumer.
10. We also declare that our individual/firm/Agencies/Company/Organisation/Joint Venture, anyone or both partners is not blacklisted by any of the State or Central Government and organisations of the State or Central Government including PSUs/SEBs/Utilities.
11. We undertake to use the BOS components other than PHOTO VOLTAIC Modules and Solar grid tie Inverters as per the standards stipulated.

Signature of the authorised person:
Name of the authorised person:
Designation:
Name and Address of Bidder
Stamp of bidder

Format-II

CERTIFICATE AS TO AUTHORISED SIGNATORIES

I, Certify that I am (Name)..... (Designation).....,and

that (Name)…… who signed the above Bid has been duly authorized to sign the

same on behalf of our individual/firm/agencies/organisation/company/Joint venture.

Date:
Sealed &Signature (Authorized Signatory)

Format-II (a)

FORM OF UNDERTAKING BY THE JOINT VENTURE PARTNERS

THIS JOINT DEED OF UNDERTAKING executed on this ..... day of.....Two Thousand and ..... by ..... a company incorporated under the laws of..... and having its Registered Office at..... (herein after called the "Party No.1" which expression shall include its successors, executors and permitted assigns) and M/s ..... a company incorporated under the laws of .....and having its registered Office at ..... (herein after called the "Party No.2" which expression shall include its successors, executors and permitted assigns) which expression shall include its successors, executors and permitted assigns) for the purpose of making a bid against the Specification No..... for (insert name of the tender)……of …….. *(insert name of the Employer)* …….., a Company incorporated under the Companies Act of1956 /2013
(with amendment from time to time) having its registered office at ……*(insert registered address of the Employer)*…… (herein after called the "Employer").

WHEREAS the Party No.1, Party No.2 have entered into an Agreement dated.....

AND WHEREAS the Employer invited bids for empanelment of Vendors for Design, Supply, Installation, Testing & Commissioning Including 05 year Comprehensive Warranty for complete installed plant and further 20 years extended warranty for solar PV module and Comprehensive Maintenance/CMC for five years of 1kwp to 500kwp Grid Connected Rooftop Photo Voltaic Solar System for all the willing consumers excluding Government connections in Chhattisgarh State through rate contract programme under CAPEX Mode .

AND WHEREAS Section-II, ITB and Eligibility Criteria of Section-III forming part of the Bidding Documents, inter-alia stipulates that an Undertaking of two qualified firms/agencies/companies as partners, meeting the requirements of Eligibility Criteria, as applicable may bid, provided, the Joint Venture fulfils all other requirements of bid and in such a case, the Bid Forms shall be signed by all the partners so as to legally bind all the Partners of the Joint Venture, who will be jointly and severally liable for successful performance under this bid and all obligations hereunder.

The above clause further states that this Undertaking shall be attached to the bid will be as per the format enclosed with the Bidding Documents without any restrictions or liability for either party.

AND WHEREAS the bid is being submitted to the Employer vide proposal No……..dated ……..... by Party No.1 based
on this Undertaking between all the parties; under these presents and the bid in accordance with the requirements of Section-II, ITB and Eligibility Criteria of Section-III and all other requirements of bid forming part of the Bidding Documents, has been signed by all the parties.

NOW THIS UNDERTAKING WITNESSETH AS UNDER:

In consideration of the above premises and agreements all the parties of this Deed of Undertaking do hereby declare and undertake:

1. In requirement of the tender/bid issued by the Employer, we, the Parties of Joint Venture Partners do hereby Undertake that M/s…… the Party No.1, shall act as Lead Partner and further declare and confirm that we the parties to the Joint Venture shall jointly and severally be bound unto the Employer for the successful under this tender and shall be fully responsible Design, Supply, Installation, Testing & Commissioning Including 05 year Comprehensive Warranty for complete installed plant and further 20 years extended warranty for solar PV module and Comprehensive Maintenance/CMC for five years of 1kwp to 500kwp Grid Connected Rooftop Photo Voltaic Solar System for all the willing consumers in accordance of this tender:

2. In case of any breach or default of the any tender conditions by any of the parties to the Joint Venture, the party(s) do hereby undertake to be fully responsible for the successful performance of the Contract and to carry out all the obligations and responsibilities under the Contract in accordance with the requirements of the Contract.

3. Further, if the Employer suffers any loss or damage on account of or default of the any tender conditions or any shortfall in the performance of the plant in meeting the performances guaranteed as per the specification in terms of the tender, the Party(s) of these presents undertake to promptly make good such loss or damages caused to the Employer, on its demand without any demur. It shall not be necessary or obligatory for the Employer to proceed against Lead Partner to these presents before proceeding against or dealing with the other Party, the Employer can proceed against any of the parties who shall be jointly and severally liable f or the performance and all other liabilities/obligations under this tender to the Employer.

4. The financial liability of the Parties of this Deed of Undertaking to the Employer, with respect to any of the claims rising out of the performance or non-performance of the obligations set forth in this Deed of Undertaking, read in

conjunction with the relevant conditions of the Contract shall, however not be limited in any way so as to restrict or limit the liabilities or obligations of any of the Parties of this Deed of Undertaking.

5. It is expressly understood and agreed between the Parties to this Undertaking that the responsibilities and obligations of each of the Parties shall be as delineated to this Deed of Undertaking. It is further undertaken by the parties that the above sharing of responsibilities and obligations shall not in any way be a limitation of joint and several responsibilities of the Parties under the Contract.

6. It is also understood that this Undertaking is provided for the purpose s of undertaking joint and several liabilities of the partners to the Joint Venture for submission of the bid and performance as per tender condition and specification and that this Undertaking shall not be deemed to give rise to any additional liabilities or obligations, in any manner or any law, on any of the Parties to this Undertaking or on the Joint Venture, other than the express provisions of the tender.

7. This Undertaking shall be construed and interpreted in accordance with the provisions of the tender.

8. It is further agreed that this Deed of Undertaking shall be irrevocable and shall form an integral part of the bid and shall continue to be enforceable till the Employer discharges the same or upon the completion of the period of empanelment in accordance with its provisions, whichever is earlier. It shall be effective from the date first mentioned above for all purposes and intents.

IN WITNESS WHEREOF, the Parties to this Deed of Undertaking have through their authorised representatives executed these presents and affixed Common Seals of their companies, on the day, month and year first mentioned above.

Common Seal of …….
has been affixed in my/ our presence
pursuant to Board of Director's
Resolution dated …….

Name ……..

Designation …….

Signature …….

WITNESS :
I. ……

II. ……

For Lead Partner (Party No.-1)
For and on behalf of M/s
……..

(Signature of the authorized
Representative)

Common Seal of …….
has been affixed in my/ our presence
pursuant to Board of Director's
Resolution dated …….

Name ……..

Designation …….

Signature …….

WITNESS :
I. ……

II. ……

For Party No.-2
For and on behalf of M/s……..

(Signature of the authorized
Representative)

Note:

1. For the purpose of executing the Joint Deed of Undertaking, the non -judicial stamp papers of appropriate value shall be purchased in the name of Joint Venture.

2. The Undertaking shall be signed on all the pages by the authorised representatives of each of the partners and should invariably be witnessed.

Format-II (b)

FORM OF POWER OF ATTORNEY FOR JOINT VENTURE

KNOW ALL MEN BY THESES PRESENTS THAT WE, the Partners whose details are given here under..... have formed a Joint Venture Under the laws of ..... and having our Registered Office(S)/Head Office(s) at..... .....

(herein after called the 'Joint Venture' which expression shall unless repugnant to the context or meaning thereof, include it s

successors, administrators and assigns) acting through M/s .... being the

Partner in-charge do hereby constitute, nominate and appoint M/s..... a Company incorporated under the laws of .....…..... and having it s Registered / Head Office at .....

as our duly constituted lawful Attorney (hereinafter called "Attorney" or "Authorized Representative" or "Partner In-charge") to exercise all or any of the powers for and on behalf of the Joint Venture in regard to Specification No.....

Package ..... the bids for which have been invited by Chief Engineer (RE-II), CREDA, Raipur (herein after called the 'Employer') to undertake the following acts :

i) To submit proposal and participate in the aforesaid Bid Specification of the Employer on behalf of the "Joint Venture".

ii) To negotiate with the Employer the terms and conditions for award of the Contract pursuant to the aforesaid Bid and to sign the Contract with the Employer for and on behalf of the "Joint Venture".

iii) To do any other act or submit any document related to the above.

iv) To receive, accept and execute the Contract for and on behalf of the "Joint Venture".

It is clearly understood that the Partner In-charge (Lead Partner) shall ensure performance as per tender provisions and if one or both partner fail to perform their respective portions as per tender provisions, the same shall be deemed to be a default by all the partners.

It is expressly understood that this Power of Attorney shall remain valid binding and irrevocable till completion of the Defect Liability Period towards executed project.

The Joint Venture hereby agrees and undertakes to ratify and confirm all the whatsoever the said Attorney/Authorised Representatives/Partner in-charge quotes in the bid, negotiates and signs the Contract with the Employer and/or proposes to act on behalf of the Joint Venture of this power of Attorney and the same shall bind the Joint Venture as id done by itself.

IN WITNESS THEREOF the Partners Constituting the Joint Venture as aforesaid have executed these presents on this.....day of ……..... under the Common Seal(s) of their Companies.

For and on behalf of the Partners of Joint Venture

.....

.....

.....

The Common Seal of the above Partners of the Joint Venture:

The Common Seal has been affixed there unto in the presence of:

WITNESS

1. Signature.....

   Name .....

   Designation .....

   Occupation .....

2. Signature.....

   Name .....

   Designation .....

   Occupation .....

Note:

1. For the purpose of executing the Agreement, the non -judicial stamp papers of appropriate value shall be purchased in the name of Joint Venture.
2. The Agreement shall be signed on all the pages by the authorised representatives of each of the partners and should invariably be witnessed.

CMC/ OPERATION AND MAINTENANCE GUIDELINES OF GRID CONNECTED PHOTO VOLTAIC SYSTEM/PLANTS

1. Periodic cleaning of solar modules, preferably once every fortnight.
2. O&M of Solar Power Plant shall be compliant with grid requirements to achieve committed energy generation.
3. Periodic checks of the Modules, PCUs and BoS shall be carried out as a part of routine preventive and breakdown maintenance.
4. Immediate replacement of defective Modules, Invertors/PCUs and other equipment as and when required.
5. Supply of all spares, consumables and fixtures as required. Such stock shall be maintained for all associated equipment's and materials as per manufacturer/ supplier's recommendations.
6. All the equipment testing instrument required for Testing, Commissioning and O& M for the healthy operation of the Plant shall be maintained by the Bidder. The testing equipment's must be calibrated ones every 2 years from NABL accredited labs and the Certificate of calibration must be kept for reference as required.
7. If negligence/ mal-operation on part of the Bidder's operator results in failure of equipment, such equipment should be repaired/ replaced by the Bidder free of cost.
8. If any jobs covered in O&M Scope as per tender are not carried out by the contractor/ Bidders during the O&M period, the Engineer-In-Charge shall take appropriate action as deemed fit.
9. CREDA & CSPDCL reserves the right to make surprise checks/ inspection visits at its own or through authorized representative to verify the O&M activities being carried out by the Bidder. Failure to adhere to above guidelines will result in penal action including debarring from participation in next tender.

Format-IV

Quality Certification, Standards and Testing for Grid-connected Rooftop Solar PHOTO VOLTAIC Systems/Power Plants

Quality Certification and standards for grid-connected rooftop solar PHOTO VOLTAIC systems are essential for the Successful mass-scale implementation of this technology. It is also imperative to put in

place an efficient and rigorous monitoring mechanism, adherence to these standards. Hence, all components of grid-connected rooftop solar PHOTO VOLTAIC system/ plant must conform to the relevant standards and Certifications given below:

Solar PHOTO VOLTAIC Modules/Panels

IEC 61215/ IS	Design Qualification and Type Approval for Crystalline Silicon
14286	Terrestrial Photovoltaic (PV) Modules
IEC 61701	Salt Mist Corrosion Testing of Photovoltaic (PV) Modules
IEC 61853- Part 1/	Photovoltaic (PV) module performance testing and energy
	rating –: Irradiances and temperature performance measurements, and
IS 16170: Part 1	power rating
	Photovoltaic (PV) Modules – Ammonia (NH3) Corrosion Testing (As per the
IEC 62716	site condition like dairies, toilets)
	Photovoltaic (PV) Module Safety Qualification – Part 1: Requirements for
IEC 61730-1,2	Construction, Part 2: Requirements for Testing
	Photovoltaic (PV) modules - Test methods for the detection of potential-
	indused degradation. IEC TS 62804-1: Part 1: Crystalline silicon
	(mandatory for applications where the system voltage is >600 VDC and
IEC 62804	advisory for installations where the system voltage is < 600 VDC)
	Photovoltaic (PV) modules – Transportation testing, Part 1:
IEC 62759-1	Transportation and shipping of module package units

Solar PHOTO VOLTAIC Inverters

Safety of power converters for use in photovoltaic power systems – Part

1: General requirements, and Safety of power converters for use in IEC 62109-1, IEC 62109-2 photovoltaic power systems

	Part 2: Particular requirements for inverters. Safety compliance
	(Protection degree IP 65 for outdoor mounting, IP 54 for indoor mounting)
IEC/IS 61683 (as	Photovoltaic Systems – Power conditioners: Procedure for Measuring
applicable)	Efficiency (10%, 25%, 50%, 75% & 90-100% Loading Conditions)

BS EN 50530 (as applicable)	Overall efficiency of grid-connected photovoltaic inverters : This Europe an Standard provides a procedure for the measurement of the accuracy of the maximum power point tracking (MPPT) of inverters, which are used in grid-connected Photovoltaic systems. In that case the inverter energizes a low voltage grid of stable AC voltage and constant frequency. Both the static and dynamic MPPT efficiency is considered.
IEC 62116/ UL 1741/ IEEE 1547 (as applicable)	Utility-interconnected Photovoltaic Inverters - Test Procedure of Islanding Prevention Measures
IEC 60255-27	Measuring relays and protection equipment – Part 27: Product safety requirements
IEC 60068-2 (1, 2, 14, 27, 30 & 64)	Environmental Testing of PV System – Power Conditioners and Inverters a) IEC 60068-2-1: Environmental testing - Part 2-1: Tests - Test A: Cold b) IEC 60068-2-2: Environmental testing - Part 2-2: Tests - Test B: Dry heat c) IEC 60068-2-14: Environmental testing - Part 2-14: Tests -Test N: Change of temperature d) IEC 60068-2-27: Environmental testing - Part 2-27: Tests -Test Ea and guidance: Shock e) IEC 60068-2-30: Environmental testing - Part 2-30: Tests -Test Db: Damp heat, cyclic (12 h + 12 h cycle) f) IEC 60068-2-64: Environmental testing - Part 2-64: Tests-Test Fh: Vibration, broadband random and guidance
IEC 61000 – 2,3,5 (as applicable)	Electromagnetic Interference (EMI) and Electromagnetic Compatibility (EMC) testing of PHOTO VOLTAIC Inverters

Fuses

IS/IEC 60947 (Part 1,2&3),EN 50521	General safety requirements for connectors, switches, circuit breakers (AC/DC): a) Low-voltage Switchgear and Control-gear, Part 1: General Rules b) Low-Voltage Switchgear and Control-gear, Part 2: Circuit Breakers c) Low-voltage switchgear and Control-gear, Part 3: Switches, dis connectors, switch-dis connectors and fuse-combination units d) EN 50521: Connectors for photovoltaic systems – Safety requirements and tests
IEC 60269-6	Low-voltage fuses - Part 6: Supplementary requirements for fuse-links for the protection of solar photovoltaic energy systems
Surge Arrestors	
IEC 62305-4	Lightening Protection Standard
IEC 60364-5-53/ IS 15086-5 (SUCCESSFUL BIDDER)	Electrical installations of buildings - Part 5-53: Selection and erection of electrical equipment - Isolation, switching and control
IEC 61643- 11:2011	Low-voltage surge protective devises - Part 11: Surge protective devises connected to low-voltage power systems - Requirements and test methods
Cables	
IEC 60227/IS 694, IEC 60502/IS 1554 (Part 1 & 2)/IEC69947	General test and measuring method for PVC (Polyvinyl chloride) insulated cables (for working voltages up to and including 1100 V, and UV resistant for outdoor installation)
BS EN 50618	Electric cables for photovoltaic systems (BT(DE/NOT)258), mainly for DC Cables

Earthing /Lightning:

IEC 62561 Series (Chemical earthing)	IEC 62561-1 Lightning protection system components (LPSC) - Part 1: Requirements for connection components IEC 62561-2 Lightning protection system components (LPSC) - Part 2: Requirements for conductors and earth electrodes IEC 62561-7 Lightning protection system components (LPSC) - Part 7: Requirements for earthing enhancing compounds
Junction Boxes	
IEC 60529	Junction boxes and solar panel terminal boxes shall be of the thermo-plastic type with IP 65 protection for outdoor use, and IP 54 protection for indoor use
Energy Meter	At interface point : As per technical specification clause 8 At Generation point: Meter shall be provided by CSPDCL
Solar PHOTO VOLTAIC Roof Mounting	**Structure**
IS 2062/IS 4759	Material for the structure mounting

Note:-

- Equivalent standards may be used for different system components of the plants. In caseof clarification following person/agencies may be contacted.
- Ministry of New and Renewable Energy (Govt. of India) National Institute of Solar Energy
- The Energy Recourse's Institute TUV / Rhineland / UL

Format-V

PROJECT REPORT FORMAT

Format for Summary Project Report for
Grid Connected Rooftop and Small Solar Photovoltaic system

1. Name of Bidder
2. Tender no.
3. Project details (Site location & Address)
4. Brief about the Rooftop Solar Power Generation System
5. Details of the prosumer
6. Specifications of the Components and Bill of Material/ Quantities

Sl. no	Component	Specification	
		Quantity	Make
A	Solar PHOTO VOLTAIC module		
A.1	Aggregate Solar PHOTO VOLTAIC capacity (kWp)		
B	Grid connected inverter (Type and Capacity)		
B.1	Aggregate Inverter capacity (kVA)		
C	Module mounting structure (Certified by a Structural Engineer **(Mandatory for 101 kWp to 500 kWp)**		
D	Array Junction Box		
E	AC Distribution Board		
F	Cable (All type)		
G	Earthing Kit (maintenance free)		
I	Online monitoring system		
J	Any other component		
K	Transformer		

7. Unit cost of solar power generation
8. Cost benefit analysis, payback period
9. Expected output/annum.
10. Respective drawings for layout, electrical wiring connections, earthing, components etc.
11. Connectivity details with grid and metering arrangement (with sketch diagram)
12. Copy of electricity bill of the prosumer and consumer/BP number
13. Any other information
14. Documentary proof regarding prosumer type

Format-VI

BIDDER INFORMATION

1	Name of the individual/firm/agencies/organisation/ Company/Jointventure:	
2	Year of establishment	
3	Complete postal address	
4	Name & Designation of Authorized person	
5	Phone No.'s	
6	Fax No.	
7	Email	
8	Nature of the individual/firm/agencies/organisation/Company/Joint venture (Proprietary/partnership/etc)	
9	**Bank Details of the**	
	Agency: Bank	
	Name Bank Address	
	Bank Account Number	
	IFSC Code	
10	PAN No.	
11	TIN No.	
12	Services Tax Registration No.	
13	Total No. of branch offices in Chhattisgarh	
14	Bid Document Fee (Non-refundable)	Amount Rs. : DD No. : DD Date : Issuing Bank & Branch :
15	EMD	Amount Rs. : DD No. : DD Date : Issuing Bank &Branch:
16	Details of Certificates enclosed	
17	Technology Adopted with details:	

Format-VII

Turn over details of item/product – **FY 2016-17 to 2018-19**

S.No	Fin. Year	Amount (Rs in Lac)

List of Major Customers – 2016- 17 to 2018-19

S.No	Customer Full Address	Details of Supplies made	Turn Over (Rs. In Lac)

CHECK LIST

IMPORTANT:

The Bidder must ensure that the following details in the check list are furnished along with the bid document. The bidder must also carefully go through all the contents of the BID Document and any additional information/documents, required more than the items listed in the check list below, also shall have to be furnished. Non-furnishing of any required information/document as per the Tender Document will lead to rejection of the bid **(in the following order only)**.

SN	Particulars	Yes/No	Page No.
1	Bid Document Fee of Rs. 29500/-(including18% GST) in the form of Demand Draft		
2	EMD of Rs.200000/- (DD)		
3	Bidder Information Sheet		
4	Integrity Pact (Original in two sets)		
5	Enclosed Duly Filled Formats		
5	Techno-Commercial Bid duly Sealed & signed in each page in token of accepted all the terms and conditions of the tender schedule.		
6	Copy of PAN & GST		
7	The bidders are having the solar GCRT system experiences as per qualifying Eligibility Criteria (Documentary proof)		
8	The firms are having the Networth & Annual turnover in last three FYs as per qualifying Eligibility Criteria (Documentary proof)		
9	List of present clients with contact address & telephone numbers along with work orders & latest performance certificates of each capacity/orders.		
10	Solar PHOTO VOLTAIC Module efficiency has to be greater than 15% at STC (Proof to be submitted)		
11	Any other information /documents which are required in the tender.		

NOTE: All pages of the bid documents must be serially numbered and signed.

Format-VIII

Financial/Price Bid

(To be submitted by Bidder through online only at required location on CSPDCL e-tendering portal as per the format given below)

Name of the Bidder:.....

Design, Supply, Installation, Testing and Commissioning of Grid Connected Rooftop Solar Photovoltaic Power Plant and power evacuation system and other necessary infrastructures including 05 year Comprehensive Warranty for complete installed plant and further 20 years extended warranty for solar PV module and Maintenance/CMC of Grid Connected Rooftop Solar Photovoltaic Power Plants and Power Evacuation system in various districts in the state of Chhattisgarh as per technical specifications, Terms and Conditions of the tender documents: -

Sr. No.	Capacity range Category of RTS plant.	Quoted Rate per KWp for RTS Power plant including CMC for 5 years (in Rs.)
1	1 KWp to 10 KWp	
		(In Words)
2	Above 10 KWp to 100 KWp	
		(In Words)
3	Above 100 KWp to 500 KWp	
		In Words)

Notes:

1. Certified that quoted rates above are for the Rooftop Solar PHOTO VOLTAIC system as per MNRE guidelines/requirements/specifications, terms & condition mentions in this tender.
2. The rates are inclusive of all taxes & duties, storage, transportation up to site, insurance etc., and any other job required to properly execute the completion of work on the basis of such rate.
3. MNRE has issued the current year bench-mark cost for each capacity range mentioned above for completion of work of RTS plant on such basis. Therefore, the quoted rate should not be more than the benchmark cost for respective capacity range.
4. In the event that the discovered lowest price is higher than that the benchmark cost on MNRE, in such case the benchmark cost shall only be treated as lowest price, However, CREDA has right to reject/review very low or unrealistic rates.
5. **All Successful bidders have to deposit service charge @ Rs. 2.00 per Watt of capacity allocated by CREDA or offered by bidders prior to commencement of work to CREDA.**

Format-IX

Design, Supply, Installation, Testing & Commissioning including 05 years Comprehensive warranty for complete installed plant and further 20 years extended warranty for solar PV module and 05 years CMC of 1 kwp to 500 kwp Grid Connected Rooftop Solar System as per tender under reference for all the willing consumers excluding government connections in Chhattisgarh State through Rate Contract Programme under CAPEX Mode.

(PRE CONTRACT INTEGRITY PACT)

General

The pre-bid, pre-contract Agreement (hereinafter called the integrity Pact) is made on ……. days of the month of …… between on the hand the CREDA, Raipur acting through Shri …… C.E. (Grid Sanction RE-II), CREDA, Raipur (hereinafter called the "EMPLOYER" which Expression shall mean and include unless the context otherwise requires his successors in office and assigns) of the First Part and M/s. …… (Name of Bidder) represented by Shri …… (here in after called the 'BIDDER' which expression shall mean and include, unless the context otherwise requires, his successors and permitted assigns) of the Second Part.

WHEREAS the EMPLOYER proposes to procure the tendered facility and the BIDDER is willing to offer/has offered the same and

WHEREAS the BIDDER is a Bidder/Tenderer shall mean an individual/firm/agencies/ organization/Company/Joint venture of two firms/agencies/companies including its successor executors and permitted assigns jointly and severally as the context may require constituted in accordance with the relevant law in the matter and the EMPLOYER is a Utility performing its functions on behalf of the State Govt. of C.G.

NOW, THEREFORE

To avoid all forms of corruption by following a system that is fair, transparent and free from any influence/prejudiced dealing prior to during and subsequent to the currency of the contract to be entered into with a view to –

Enabling the EMPLOYER to obtain the desired rate contract for execution of plant at a competitive price in conformity with the defined specifications by avoiding the high cost and the distortionary impact of corruption, and

Enabling BIDDERs to abstain from bribing or indulging in any corrupt practice in order to secure the contract by providing assurance to them that their competition will be abstain from bribing and other corrupt practices and the EMPLOYER will commit to prevent corruption, in any form by its officials by following transparent procedures.

The parties hereto hereby agree to enter into the integrity Pact and agreed as follows –

Commitments of the EMPLOYER

1.1 The EMPLOYER undertakes that no official of the EMPLOYER connected directly or indirectly with a bid will demand take a promise for or accept directly or through intermediates any bribe consideration gift reward favour or any material or immaterial benefit or any other the BIDDER either for themselves or for any person organization or third party related to the contract in exchange for an advantage in the bidding process, bid evaluation contracting or implementation process related to the contract.

1.2 The EMPLOYER will, during the [pre-bidding stage treat at BIDDERs alike and will provide to all BIDDERs the same information and will not provide any such information to any particular BIDDER which could afford an advantage to that particular BIDDER in comparison in other BIDDERs.

1.3 All the officials of the EMPLOYER will report to the appropriate Govt. office any attempted or completed breaches of the above commitments as well as any substantial suspicion of such a breach.

2.0 In case any such preceding misconduct on the part of the such official(s) is reported by the BIDDER to the EMPLOYER with full and verifiable facts and the same is prime facie found to be correct by the EMPLOYER necessary disciplinary proceedings or any other action as deemed fit, including criminal proceedings may be initiated by the EMPLOYER and such a person shall be debarred from further dealings related to the contract Process in such a case while an enquiry is being conducted by the EMPLOYER the proceedings under the contract would not be stalled.

Commitments of BIDDERs

3.0 The BIDDER commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its bid or during any pre-contract or post-contract stage in order to secure the contract or in furtherance to secure it and in particular commit itself to the following.

3.1 The BIDDER will not offer directly or through intermediaries any bribe, gift, consideration, reward, favour any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the EMPLOYER connected directly or indirectly with the bidding process or to any person organization or third party related to the contract in exchange for any advantage in the bidding evaluation contracting and implementation of the contract.

3.2 The BIDDER further undertakes that it has not given, offered or promised to give, directly or indirectly any bribe gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the EMPLOYER or otherwise in procuring the Contract or forbearing to do or having done any act in relation to the obtaining or execution of the contract or any other contract with the Government for showing or for being to show favour or disfavour to any person in relation to the contract or any other contract with Government.

3.3 BIDDERs shall disclose the name and address of agent and representatives and Indian BIDDERs shall disclose their foreign principals or associates.

3.4 BIDDERs shall disclose the payments to be made by them to agents/brokers or any other intermediary in connection with the bid/contract.

3.5 The BIDDER further confirms and declares to the EMPLOYER that the BIDDER is the original manufacturer/integrator/authorized government sponsored entity required under this tender and has not engaged any individual or firm or company whether Indian or foreign to intercede, facilitate or in any way to recommend to the EMPLOYER or any of its functionaries, whether officially or unofficially to the award of the contract to the BIDDER, nor has any amount been paid promised or intended to be paid to any such individual firm or company in respect of any such intercession, facilitation or recommendation.

3.6 The BIDDER either while presenting the bid or during the negotiations before empanelment, shall disclose any payments he has made is committed to or intends to make to officials of the EMPLOYER or their family members agents, brokers or any other intermediaries in connection with the contract and the details of services agreed upon for such payments.

3.7 The BIDDER will not collude with other parties interested in the contract to impair the transparency fairness and progress of the bidding process, bid evaluation, empanelment and implementation of the plant as per the tender condition and specifications.

3.8 The BIDDER will not accept any advantage in exchange for any corrupt practice unfair means and illegal activities.

3.9 The BIDDER shall not use improperly for purposes of competition or personal gain, or pass on to other, any information provided by the EMPLOYER as part of the business relationship, regarding plans technical proposals and business details, including information contained in any electronic data carrier. The BIDDER also undertakes to exercise due and adequate care lest any such information is divulged.

3.10 The BIDDER commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.

3.11 The BIDDER shall not instigate or cause to instigate any third person to commit any of the actions mentioned above.

3.12 If the BIDDER or any employee of the BIDDER or any person acting on behalf of the BIDDER either directly or indirectly is a relative of any of the officers of the EMPLOYER, or alternatively, if any relative of an officer of the EMPLOYER has financial interest/stake in the BIDDER's firm, the same shall be disclosed by the BIDDER at the time of filing of bid/tender.

The term relative for this purpose would be as defined in Section 6 of Companies Act 1956/2018.

3.13 The BIDDER shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any employee of the EMPLOYER.

4. Previous Transgression

4.1 The BIDDER declares that no previous transgression occurred in the last three years immediately before signing of this integrity Pact, with any other company in any country in respect of any corrupt practices envisaged hereunder or with any Public Sector Enterprises in India or any Government Department in India that could justify BIDDER's exclusion from the tender process.

4.2 The BIDDER agrees that if it makes incorrect statement on this subject, BIDDER can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

5. Earnest Money Deposit

5.1 While submitting techno-commercial bid, the BIDDER shall deposit necessary amount – as specified in the Tender in which the bidder is participating, towards Earnest Money Deposit with the EMPLOYER through Demand Draft in favour of CREDA, Raipur.

5.2 The Earnest Money Deposit shall be valid up to a period as mentioned in the Tender Specification for the complete conclusion of the contractual obligations to the complete satisfaction of both the BIDDER and the EMPLOYER including warranty period, whichever is later.

5.3 In case of the successful BIDDER, a clause would also be incorporated in the Article pertaining to Performance Security/Bond in the tender that the provisions of Sanctions for Violation shall be applicable for forfeiture of Performance Security in case of a decision by the EMPLOYER to forfeit the same without assigning any reason for imposing sanction for violation of this Pact.

5.4 No interest shall be payable by the EMPLOYER to the BIDDER on EARNEST Money Deposit for the period of its currency.

6. Sanctions for violations

6.1 Any breach of the aforesaid provisions by the BIDDER or anyone employed by it or acting on Its behalf (whether with or without the knowledge of the BIDDER) shall entitle the EMPLOYER to take all or any one of the following actions, wherever required.

(i) To immediately call off the pre contract negotiations without assigning any reason or giving any compensation to the BIDDER. However the proceedings with the other BIDDER(s) would continue.

(ii) The Earnest Money Deposit (In pre-contract stage) and/ or Security.

Deposit/Performance Security (after the contract is signed) shall stand forfeited either fully or partially, as decided by the EMPLOYER and the EMPLOYER shall not be required to assign any reason therefore.

(iii) To immediately cancel the contract, if already signed without giving any compensation to the BIDDER.

(iv) To recover all sums already paid by this EMPLOYER and in case of an Indian BIDDER with interest thereon at 2% higher than the UBOR if any outstanding payment is due to the BIDDER from the EMPLOYER in connection with any other contract for any other stores, such outstanding payment could also be utilized to recover the aforesaid sum and interest.

(v) To en cash the advance performance security if furnished by the BIDDER in order to recover the payment is due to the BIDDER from the EMPLOYER in connection with any other contract for any other stores, such outstanding payment could also be utilized to recover the aforesaid sum and interest.

(vi) To cancel all or any other Contracts with the BIDDER the BIDDER shall be liable to pay compensation for any loss or damage to the EMPLOYER resulting from such cancellation/rescission and the EMPLOYER shall be entitled to deduct the amount so payable from the money(s) due to the BIDDER.

(vii) To debar the BIDDER from participating in future bidding processes of the Government of India for a minimum period of five years, which may be further extended at the discretion of the EMPLOYER.

(viii) To recover all sums paid in violation of the Pact by BIDDER(s) to any middle man or agent or broker with a view to securing the contract.

(ix) In cases where irrevocable Letter of Credit have been received in respect of any contract signed by the EMPLOYER with the BIDDER the same shall not be opened.

(x) Forfeiture of Performance Security/Bond in case of a decision by the Employer to forfeit the same without assigning any reason for imposing sanction for violation of this pact.

6.2 The EMPLOYER will be entitled to take all or any of the actions mentioned at para 6 1(i) to (x) of this Pact also on the Commission by the BIDDER or anyone employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER) of an offences as defined in Chapter (X) of the Indian Penal Code 1880 or Prevention of Corruption Act 1988 or any other statute enacted to prevention of corruption Act 1988 or any other statute enacted for prevention for corruption.

6.3 The decision of the EMPLOYER to the effect that a breach of the provisions of this Pact has been committed by the BIDDER shall be trial any conclusive on the BIDDER. However, the BIDDER can approach the independent.

7. Fall Clause

7.1 The BIDDER undertakes that it has not supplied/is not supplying similar product/system or subsystem at price lower than that offered in the present bid in respect to any other ministry/department of the Govt. of India or PSU and if it is found at any stage that similar product/system or subsystem was supplied by the BIDDER to any other Ministry/department of the Govt. of India or a PSU at a lower price than that very price with due allowance for elapsed time will be applicable to the present case and the offence in the cost would be refunded by the BIDDER to the EMPLOYER, if the contract has already been concluded.

8. Independent Monitors

8.1 The EMPLOYER has appointed independent Monitors (hereinafter referred to as Monitors For the Pact in consultation with the Centre Vigilance to as Monitors) for the Pact in Consultation with the Central Vigilance Commission (Names and Address of the Monitors to be given).

8.2 The task of the Monitors shall be to review independently and objectively, whether and to what extent the parties comply with the obligations under this Pact.

8.3 The Monitors shall not be subject to instructions by the representatives of the parties and perform their functions neutrally and independently.

8.4 Both the parties accept that the Monitors have the right to access all the documents relating to the project/procurement including Minutes of Meeting.

8.5 As soon as the Monitors notices or has reason to believe a violation of this Pact, he will so inform the Authority designated by the EMPLOYER.

8.6 The BIDDER(s) accepts that the Monitor has the right to access without restriction to all Project documentation of the EMPLOYER including that provided by the BIDDER. The BIDDER will also grant the Monitor, upon his request and demonstration of a valid interest unrestricted and unconditional access to this project documentation. The same is applicable to Subcontractors. The same is applicable to Subcontractors. The Monitor shall be under contractual obligation to treat the information and documents of the BIDDER/Subcontractor(s) with confidentiality.

8.7 The EMPLOYER will provide to the Monitor sufficient information about all meeting among the parties related to the Project provided such meeting could have an impact on the contractual relations between parties. The parties will offer to the Monitor the option to participate in such meetings.

8.8 The Monitor will submit a written report to the designated Authority of EMPLOYER/Secretary in the Department/with 8 to 10 weeks from the date of reference or intimation to him by the EMPLOYER/BIDDER and should the occasion arise submit proposals for correcting problematic situations.

9. Facilitation of Investigation

In case of any allegation of violation of any provisions of the Pact or payment of commission, the EMPLOYER or its agencies shall be entitled to examine all the documents including the Books of Accounts of the BIDDER and the BIDDER shall provide necessary information and documents in English and shall extend all possible help for the purpose of such examination.

10. Law and Place of Jurisdiction

The Pact is subject to Indian Law. The place of performance and jurisdiction is the seat of the EMPLOYER.

11. Other Legal Actions

The actions stipulated in this integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.

12. Validity

12.1 The validity of this integrity Pact shall be from date of its signing and extend till warranty period as applicable for executing several plants to the satisfaction of both the EMPLOYER and the BIDDER. In case BIDDER is unsuccessful this Integrity Pact shall expiry after six months from the date of the opening of techno-commercial bid.

12.2 Should one or several provisions of this Pact turn out to be invalid, the reminder of this Pact shall remain valid. In the case the parties will strive to come to an agreement to their original intentions.

13. The parties hereby sign this Integrity Pact at …….. on ……..

EMPLOYER	BIDDER
Name of the Officer	CHIEF EXECUTIVE OFFICER
Designation	
Deptt/PSU	

Witness –

1 ……..... 1……..…

2 ...……..... 2……

*Provisions of these clauses would need to be amended/deleted in line with the policy of the EMPLOYER in regard to involvement of Indian agent of foreign suppliers.