



Chhattisgarh State Renewable Energy Development Agency (CREDA)

(Dept. of Energy, Govt. of Chhattisgarh)

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BID DOCUMENT No. 79770/CREDA/HOR/RE-V/HSM Solar PCU/2021-22 DT. 30-07-2021

“TENDER FOR STANDARDIZATION OF RATES FOR SUPPLY OF SOLAR OFF-GRID INVERTER, SOLAR STRING INVERTER, SOLAR HYBRID INVERTER/PCU OF VARIOUS CAPACITY WITH 05 YEARS ONSITE WARRANTY CONFORMING TO THE IEC/BIS AND MNRE STANDARDS ANYWHERE IN THE STATE OF CHHATTISGARH”

UNIQUE TENDER ID – 79770

Particulars	From Date & Time	To Date & Time	Place
Date of issue of notice inviting bid	30-07-2021 05:00 pm	----	-----
Period of availability of bidding document at website	30-07-2021 05:00 pm	----	www.creda.co.in/Tenders
Pre Bid Submission of queries in writing	10-08-2021 11:00 am	10-08-2021 05:00 pm	At CREDA Conference Hall, CREDA HO, Raipur
Inspection of Samples by Bid Committee as per Valid Test Report and Submission of Summary of Test Report and M.A.F.	16-08-2021 11:00 am	16-08-2021 05:00 pm	At CREDA Conference Hall, HO Raipur
Submission of Online Bid (Technical + e Price Bid)	30-07-2021 05:00 pm	25-08-2021 05:00 pm	https://eproc.cgstate.gov.in
Opening of Technical Bid	26-08-2021 12:00 noon	26-08-2021 05:00 pm	At CREDA Conference Hall, CREDA HO, Raipur
Declaration of Eligible Bidders	After conclusion of Technical evaluation		At CREDA Conference Hall, CREDA HO, Raipur
Opening of e- Price Bid	After conclusion of Technical evaluation and declaration of eligible bidders		At CREDA Conference Hall, CREDA HO, Raipur

Bid Document Cost – Rs.5000.00 + 18% GST = Rs.5900.00/- (In words Rupees Five Thousand Nine Hundred Rupees Only) to be deposited in CREDA's account along with EMD via RTGS/NEFT as a single transaction.

Document can be downloaded from our website www.creda.co.in or from Chhattisgarh e-Procurement portal i.e. <https://eproc.cgstate.gov.in>.

CHATTISGARH STATE RENEWABLE ENERGY DEVELOPMENT AGENCY

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Ref. No./CREDA/HOR/RE-V/HSM Solar PCU/2021-22

Date:

NOTICE INVITING BID

CREDA invites online Bids from the manufactures (i.e. OEM) or their only one authorised dealer/distributor for **“standardization of rates for supply of solar off-grid inverter, solar string inverter, solar hybrid inverter/PCU of various capacity with 05 years onsite warranty conforming to the IEC/BIS and MNRE standards anywhere in the state of Chhattisgarh”** from registered vendors of CREDA having 3 years track record in solar Inverter/PCU manufacturing, as per following details -

Sl. No.	Item Description	Approximate value of purchase	Cost of Bid Document fees and EMD	Essentials
1	Supply of Solar Off- grid PCU of capacity ranging from 0.5KVA–100KVA Single/Three Phase with 05 years onsite warranty conforming to MNRE/BIS/IEC specification	Rs. 3.00 Crores	Rs 5,000 (+18% GST) +Rs.2,00,000 = Rs. 2,05,900 /-	As per clause no. 1A to 1G of Eligibility Criteria (Page no. 8-9)
2	Supply of Solar Hybrid Inverter/PCU of capacity ranging from 3KW – 150KW Single/Three Phase with 05 years onsite warranty conforming to MNRE/BIS/IEC specification			
3	Supply of Solar String Inverter of Capacity ranging from 1KW-60KW Single/Three Phase with 05 years onsite warranty conforming to MNRE/BIS/IEC specification			
TOTAL		Rs. 3.00 Crore	Rs. 2,05,900 /-	----

The quantity of Inverter/PCUs to be purchased is not fixed. The purchase quantity will depend on the demand received from various field offices of CREDA.

Important Events and time schedule for this Bid are as follows –

Particulars	From Date & Time	To Date & Time	Place
Date of issue of notice inviting bid	30-07-2021 05:00 pm	----	-----
Period of availability of bidding document at website	30-07-2021 05:00 pm	----	www.creda.co.in ; https://eproc.cgstate.gov.in
Pre Bid Meeting & submission of queries in writing	10-08-2021 11:00 am	10-08-2021 05:00 pm	At CREDA Conference Hall, CREDA HO, Raipur
Inspection of Samples by Bid Committee as per Valid Test Report and Submission of Summary of Test Report and M.A.F.	16-08-2021 11:00 am	16-08-2021 17:00 pm	At CREDA Conference Hall, CREDA HO, Raipur
Submission of Online Bid (Technical + e Price Bid)	30-07-2021 05:00 pm	25-08-2021 05:00 pm	https://eproc.cgstate.gov.in
Opening of Technical Bid	26-08-2021 12:00 noon	25-08-2021 17:00 pm	https://eproc.cgstate.gov.in
Declaration of Eligible Bidders	After conclusion of Technical evaluation		At CREDA Conference Hall, CREDA HO, Raipur
Opening of e- Price Bid	After conclusion of Technical evaluation and declaration of eligible bidders		At CREDA Conference Hall, CREDA HO, Raipur

Technical Bid and Price Bid shall be submitted online only at <https://www.eproc.cgstate.gov.in>. 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 <https://www.eproc.cgstate.gov.in>)

Details of this Bid are mentioned at Bid Documents which can be downloaded from our website www.creda.co.in. The Bidder should have to deposit Bid document cost along with EMD through NEFT/RTGS in the account of CREDA mentioned below.

Bidders are requested to submit Pre-Bid queries with their suggestions/objections/ reservations if any with details so as to avoid any confusion and to ensure clarity and transparency regarding the Bid.

CREDA reserves all rights to accept/reject any or all Bids in full/part without assigning any reasons. Any Amendments in the tender documents shall only be notified through the website of CREDA i.e. www.creda.co.in

**Chief Engineer
RE-V, H.O. CREDA
Raipur (CG)**

Details of bank account for RTGS/ NEFT:

Name of Account	CREDA
Bank & Branch Name	ICICI Bank, Panchpedi Naka, Raipur
Account Number	134601000400
IFS Code	ICIC0001346

CHECK LIST OF DOCUMENTS TO BE UPLOADED IN THE E-BIDDING PORTAL

To ensure that your Bid uploaded on the Chhattisgarh e-Procurement portal i.e. <https://eproc.cgstate.gov.in> is complete in all respects, please go through the following checklist & tick mark for the enclosures attached with your Bid –

Sl. No.	Envelope	Description of documents to be uploaded in the e-bidding portal	Complied (For Office Use only)
1	A. Pre-Qualification	EMD + Tender Document Fee submission form of the bidder confirmed by CREDA (as on page – 6)	
2		Self-Attested Undertaking of the Bidder as mentioned on Page – 7 of the tender document	
3		Copy of original tender document duly signed & with stamp on each page, as a confirmation of acceptance of the Terms & Conditions (T&C).	
4		PAN, GSTIN issued in the name of the bidder	
5		Self-certificate from Bidder on not being a debarred from Government contract or a blacklisted company.	
6		Declaration of conflict of interest - by bidder about any relatives working with CREDA and Affidavit as per Annexure - III	
7		Copy of Registration: Certificate (or Acknowledgment) as vendor of CREDA for Solar Inverter/PCUs valid for FY 2021-22.	
8	B. Technical and Financial Qualification	Copy of Approved Test Reports/Acknowledgements of submission of sample for testing in the name of bidder/manufacture as per eligibility criteria.	
9		Original Net Worth Certificate duly signed by Chartered Accountant	
10		Copy of certificate for last three years turnover of works done regarding Solar Inverter/PCUs supply.	
11		Copy of ITRs for last three Financial Years of the Bidder	
12		Completion and Performance Certificates of Supply of Inverter/PCU by the Bidder in Govt. Scheme of any state or Market Mode Scheme of CREDA.	
13		Proof of being Eligible Manufacturer of Solar Inverter/PCUs in the name of manufacturer.	
14		Manufacture Authorization certificates of Solar Inverter/PCUs (mandatory in case of authorised dealer/distributor)	
15		Undertaking on indigenouness of components	
16		Undertaking for the remaining test reports (for which acknowledgements have been submitted) submission within 90 days from the date of agreement.	
17		Schedule – I Part-A	
18		Schedule – II Part-B	
19		Schedule – III Part-C	
20		Technical Data Sheet for each category of inverter/PCU showing full technical details	
21		Details of Service centres in Chhattisgarh	

Details of EMD and Tender Document Fee

A scanned copy of the EMD and Bid Document fee transaction shall have to be uploaded in the format below on the Chhattisgarh e-Procurement portal. Details uploaded in incorrect format shall be rejected.

Tender No. and Date	
Name of the Bidder	
Bidder's Bank Account Details	
(i) Name of the bank	
(ii) Branch	
(iii) IFS Code	
(iv) Account No.	
(v) Transaction reference number	
(vi) Date of transaction	
(vii) EMD + Bid Document Fee	Rs. 2,05,900/- (Rs. 2,00,000 + Rs. 5,900)

Name of A/c	CREDA
Bank & Branch Name	ICICI Bank, Panchpedi Naka, Raipur
Bank Account Number	134601000400
Branch IFSC Code	ICIC0001346

(Sign & Seal of the bidder)

***NOTE –**

1. The EMD and the Tender Document Fee shall have to be deposited as a single NEFT/RTGS transaction in CREDA's bank account (amount mentioned above).
2. Bidder's those who have valid MSME Competency Certificate are exempted from submitting the EMD amount mentioned above. They have to only pay the bid document fees

UNDERTAKING OF THE BIDDER

I/We have read carefully and examined the notice inviting Bid, schedule, General Rules and terms and conditions of the contract, special conditions, Schedule of Rates and other documents and Rules referred to in the Bid document for the supply.

I/We hereby Bid my rates for the execution of the work for CREDA as specified within the time stipulated in the schedule in accordance with all aspects with the specifications, designs, drawings and instructions with such conditions so far as applicable.

I/We agree to keep the Bid valid for **One Hundred Eighty (180) days** from the due date of submission thereof and not to make any modifications in its terms and conditions.

A sum of **Rs** is hereby forwarded as **Earnest Money** in the form of RTGS / NEFT payable to CREDA at Raipur (C.G.). If I/We, fail to commence or complete the Work Ordered in specified time or fail to fulfil the any condition of Bid document, I/We agree that the CREDA shall, without prejudice to any other right or remedy, be at liberty to forfeit the said Earnest Money absolutely. The said Earnest Money shall be retained by CREDA towards security deposit to execute all the works referred to in the Bid documents upon the terms and conditions contained or referred to therein and to carry out such deviations as may be required by CREDA.

I/We hereby declare that I/We shall treat the Bid documents, specifications and other records connected with the work as secret/confidential and shall not communicate information derived there from to any person other than a person to whom I/We have authorized to communicate the same or use the information in any manner prejudicial to the safety of CREDA/Government.

I/We shall abide to all the laws and shall be responsible for making payments of all the taxes, duties, levies and other Govt. dues etc. to the appropriate Govt. departments.

Our GST Registration No. The PAN No. under the Income Tax Act is

I/We shall be responsible for the payment of the respective taxes to the appropriate authorities and should I/we fail to do so, I/we hereby authorize CREDA to recover the taxes due from us and deposit the same with the appropriate authorities on their demand.

I/We hereby state that we have provided information of our near relatives as stated in the affidavit attached at “Annexure – III”

Dated:

Signature

Place:

Name of Bidder with seal.....

Witness:

Signature:

Name:

Postal Address:

.....

SECTION - 1

INSTRUCTIONS FOR BIDDERS

1. ELIGIBILITY CRITERIA :

A. TEST REPORTS OF SOLAR INVERTER/PCUS

Bidder must have valid test reports of solar Off-grid, hybrid, String Inverters for all category separately in the name of bidder/manufacture for which Bidder must make offer for supply. They will have to provide copy of such test report of their Inverter/PCUs from any test centre approved by Ministry of New & Renewable Energy (MNRE)/ NABL. **Bidder will be debarred from price bidding for all other categories for which they have not submitted valid test report / acknowledgement.**

Bidders may submit Acknowledgement of submission of samples **fee receipt from MNRE/NABL approved test centres** for offered Inverter/PCUs for testing (**in case they don't have approved test certificates of offered Inverter/PCUs at the time of bid**). Bidders shall be required to submit the approved test certificates before raising claim for payment else payment shall not be made to them.

Bidders shall have to submit the Test certificate against Acknowledgement within 90 days of execution of agreement otherwise EMD may be forfeited and bidder may be blacklisted / debarred by CREDA. However this time limit may be further extended / reduced by CREDA if required. Bidder has to submit an undertaking in this regard at the time of bid submission.

The bidder also shall have to submit a self-declaration that the Inverter/PCUs for which bidder is quoting offers are conforming to the latest guidelines and specification of MNRE issued for testing and BIS compliance.

B. MINIMUM EXPERIENCE

Bidders must have minimum experience in last three financial years i.e. 2018-19, 2019-20 & 2020-21 as per the details mentioned below –

S N	Details of Solar Inverter/PC Us	Category	for Bidders of Chhattisgarh state	for Bidders of Other States
1	Supply of Offgrid solar inverter, solar hybrid Inverter/PCU, Solar String Inverter/PCU	Off- grid Inverter	1. Minimum 03 years' experience in PCU/Inverter/Charge Controller manufacturing/supply. 2. Bidder must have supplied Min 500 KW aggregate capacity Solar PCUs/Inverters in Chhattisgarh either directly to CREDA or its System Integrators or any government agency in any other state	1. Minimum 03 years' experience in PCU/Inverter/Charge Controller manufacturing/supply. 2. Bidder must have supplied Min 1000 KW aggregate capacity Solar PCUs/Inverters in any government agency/organisation/undertakings of any other state.
2		Solar Hybrid Inverter	1. Minimum 03 years' experience in PCU/Inverter/Charge Controller manufacturing/supply. 2. Bidder must have supplied Min 300 KW aggregate capacity Solar PCUs/Inverters in Chhattisgarh either directly to CREDA or its System Integrators or any government agency in any other state	1. Minimum 03 years' experience in PCU/Inverter/Charge Controller manufacturing/supply. 2. Bidder must have supplied Min 500 KW aggregate capacity Solar PCUs/Inverters in any government agency/organisation/undertakings of any other state. Inverter supplied to private parties (Private Business) will also be considered subjected to the submission of performance report.
3		Solar String Inverter	1. Minimum 03 years' experience in PCU/Inverter/Charge Controller manufacturing/supply. 2. Bidder must have supplied Min 300 KW aggregate capacity Solar string PCUs/Inverters in Chhattisgarh either directly to CREDA or its System Integrators or any government agency in any other state	1. Minimum 03 years' experience in PCU/Inverter/Charge Controller manufacturing/supply. 2. Bidder must have supplied Min 500 KW aggregate capacity Solar string PCUs/Inverters in any government agency/organisation/undertakings of any other state.

.Bidders will have to submit satisfactory commissioning/functioning report containing complete details from the concerned state/central agencies /department along with bid document. All these Solar Inverter/PCUs should in successful operation as on date. (Experience in terms of supply done for other private / non Govt. companies/ firms etc. shall not be considered except in case hybrid inverter). **Bidder registered as a Pvt. Ltd. / Ltd. / Partnership / Proprietorship firm incorporated / registered in the State of Chhattisgarh shall be treated as Bidder of Chhattisgarh.**

- C. Experience Certificates submitted should be in attached format (as per Annexure-II) **or Other Format containing similar information as in attached format (Annexure-II) shall be considered only in case of submitted in Hindi / English Language only.** Work order, L.O.I. / L.O.A etc., will not be acceptable. In case of inverters supplied to system integrators; a certificate with summary must be enclosed regarding the same duly certified by concerned government department.
- D. Bidders must have a Positive Net worth of **Rs. 25 Lacs as on 31st March 2020 (which is defined as “Net value of the Assets minus (-) Net value of liabilities”)**. They shall have to submit a certified copy of certificate duly signed by a qualified and registered Chartered Accountant having UDI number as a proof. Produced certificate must tally with the audited balance sheet.
- E. Bidders should have an aggregate turnover of minimum Rs. **3 Crores** in last three years i.e. 2018-19, 2019-20 & 2020-21 in SPV Projects. Certified copies of the annual returns and audited balance sheet submitted to the Registrar of Companies/ Income Tax Authorities should be enclosed. For the preceding years a **Certified Summary Sheet** of turnover certified by registered CA must be enclosed.
- F. Bidders who are debarred from business by Govt. /Govt. Agency in any state would not be eligible to participate in this bid. A self-declaration should be submitted by the bidder to this effect, failing which bid shall be rejected.
- G. **Additional Eligibility Criteria-** Even though the bidders meet the above qualifying criteria, they are subject to be disqualified if they have:
 - a. Made misleading or false representations in the forms, statements, affidavits and attachments submitted in proof of the qualification requirements; and/or
 - b. Record of poor performance such as abandoning the works, not properly completing the contract, inordinate delays in completion litigation history, or financial failures etc.; and/or
 - c. Participated in the previous bidding for the same work and had quoted unreasonably high or low bid prices and could not furnish rational justification for it to CREDA.

2. **CONSORTIUM:** Consortium of bidders shall not be allowed in this tender.

3. **START-UP/NEW ENTREPRENEUR:** Start-up/New Entrepreneur shall not be allowed in this tender.

4. BIDDING PROCESS -

For ease of accessing the e-bidding website and registration the following is to be done by bidder -

- A. Visit <https://eproc.cgstate.gov.in>
- B. **Prospective bidders are requested to download, read and understand the Manuals present on the website so as to clearly understand the bid submission process.**
- C. The user will be directed to e-bidding page where all information regarding registration is available along with helpline details.
- D. Technical bid and Price Bid shall be submitted online only at <https://eproc.cgstate.gov.in> latest by **05.00 PM on 25-08-2021**. Bids submitted after scheduled time and date shall not be considered.

5. EMD AND TENDER DOCUMENT FEE-

The EMD and tender Document Fee shall have to be paid via RTGS/NEFT to CREDA's Account mentioned below as a single transaction.

Name of the A/c	CREDA
Bank & Branch Name	ICICI Bank, Panchpedi Naka, Raipur
Bank Account Number	134601000400
Branch IFSC Code	ICIC0001346

The receipt of RTGS/NEFT against EMD and document fee deposited must be certified from the finance section of CREDA and should be uploaded as part of Envelope-A (Pre-Qualification requirement) on <https://eproc.cgstate.gov.in>.

6. SUBMISSION OF DOCUMENTS -

All the documents including technical and financial Bid should be submitted online on Chhattisgarh e-Procurement portal <https://www.eproc.cgstate.gov.in> as per the items mentioned in the checklist on page no. 5 in this bid.

7. SPECIFICATION AMENDMENTS -

The Specifications of Solar Inverter/PCUs should be as per as Specified in the Bid. If any amendments are issued by CREDA in due course of time, in this context, then those shall be applicable under this Bid.

8. GST & PAN -

Bidder shall have to submit copies of GST registration number and PAN numbers issued by the appropriate authority.

9. RMS /DATA LOGGER -

Login ID & Password of RMS/Data Logger shall be mentioned in each JCC/Invoice and all data will have to be shared at suitable platform provided by CREDA as and when required.

10. THE BID -

The Pre-Qualification, Technical-Financial Qualification Documents and Price Bid, other related documents must be uploaded in the portal i.e. <https://www.eproc.cgstate.gov.in> **from 05:00 PM 30-07-2021 to 05:00 PM dated 25-08-2021**. Nobody is authorized to receive or grant receipt for Bid delivered on behalf of CREDA. **Bid received through any other means shall not be considered and shall be rejected.**

11. ANALYSIS OF RATE -

- A. Bidder should quote their rates considering variation of site conditions and all other factors in price of different components and keeping the quantum and quality of work in mind. Benchmark cost is attached here with **Annexure-IV**.
- B. Bidder shall have to ensure that the rates quoted are not lower than 90% of the benchmark cost as attached in this bid in **Annexure IV**, rate(s) quoted below 90% of the benchmark cost shall be considered as unbalanced rate.
- C. If the successful bid is unbalanced in relation to the benchmark cost as stated in **Annexure-IV** by more than **10%**, then the successful bidder shall have to provide Additional Performance Security (APS) to the extent of difference of the threshold cost (mentioned in point 'B') above and rates quoted by the successful bidder for total allocable quantity in such categories in which he has submitted unbalanced bid, in the form of RTGS/NEFT issued by approved scheduled bank in favour of CREDA.
- D. The Additional Performance Security (APS) shall be retained by CREDA and the same shall be returned after successful Completion of allocated work. Those other bidders, who accept the L1 Rates, are also required to submit Additional Performance Security for allocated work.
- E. Selection of L-1 Rates: - The Successful bidder who found to be L1 (as manner described in this tender document, Clause no. – 33 of Section-2), shall be offered allocated quantity of inverters/PCUs (as described in this tender document, Clause no.-33 of Section-2). L1 bidder shall have to accept the offer of CREDA within 10 days along with laid down "ADDITIONAL PERFORMANCE SECURITY", this APS amount of complete allocated quantity shall be submitted at the time of Agreement. The amount of APS will be communicated to L1 bidder along with acceptance letter. **Highly unbalanced rate shall not be considered while deciding final approved rates.**
- F. If L1 bidder refuses to accept the offer and to deposit intended APS within the prescribed time, then his bid will be rejected by sanctioning authority and earnest money shall be forfeited and blacklisted for 2 years and debarred to participate in any tender and any activity of CREDA till further orders.
- G. In case L1 bidder accept the offer and deposit the APS, L1 rates of the inverters/PCUs will be fixed for rest of the successful bidders. Now other bidder shall be offered rest quantity of batteries (as prescribed in this tender document, Clause No. – 33 of Section-2).
- H. In case, L1 bidder refuses to accept the offer and doesn't deposit the prescribed APS, offer letter shall be sent to the L2 bidder on L2 rates. Same process shall be repeated till the final rates are fixed.

- I. By the process mentioned above the final rates will be fixed and shall be offered to other successful bidders.
- J. The APS shall be submitted by other successful bidder before sanction of allocated Inverters'/PCUs' supply work.
- K. If the bidder fails to complete the work or left the work incomplete, this Additional Performance Security (APS), S.D. and EMD shall be forfeited by the CREDA, the agreement shall be terminated and bidder shall be blacklisted and debarred to participate in any tender and any activity of CREDA till further orders.

12. REGISTRATION OF BIDDER –

Bidders should have a valid registration certificate as Vendor for Solar Inverter/PCUs in CREDA in SPV programme for FY 2021-22. The acknowledgement of application submitted for the registration or renewable of registration for FY 2021-22 will also be accepted. Only one authorised dealer/distributor of a manufacturer on behalf of manufacturer itself shall be allowed to participate in the tender. In case of multiple distributor/dealer of a manufacturer participates in the tender then the tender of all dealers/distributors including manufacturer shall summarily be rejected.

13. VALIDITY -

Full descriptive particulars and complete specifications should accompany the offer. Offers should be kept open for acceptance for at least **180 days** from the date of opening. After finalization of this Bid the approved rates shall be valid till one year from the date of award; however CREDA shall have liberty to increase or decrease this validity if needed.

14. TERMS & CONDITIONS -

- A. The terms, conditions and specifications mentioned in Bid document shall be binding on the Bidders and no condition or stipulation contrary to the conditions shall be acceptable. It may please be noted that the Bidders who do not accept terms and conditions stipulated in this Bid documents, their offers shall be liable to be rejected out-rightly without assigning any reason whatsoever.
- B. Each page of Bid document & enclosures shall be signed by the Bidder and seal affixed. All the pages of the documents issued must be uploaded along with the price bid. In case of any corrections / alterations in the Bid, the Bidder should attest the same; **otherwise bids will get rejected.**
- C. Bidders are also instructed to check each and every items and upload the documents as applicable and required to be uploaded on the bidding portal. Incomplete bid submission may result in rejection of the entire bid.

15. CREDA RESERVES THE RIGHT -

- (i) To reject or accept any or all Bids fully or partly without assigning any reason on the grounds considered advantageous to CREDA, whether it is the lowest Bid or not.
- (ii) To split the quantities against the Bid further for the same items/work. No reason will be assigned by CREDA for this and will be binding on the Bidders.
- (iii) To increase or decrease of aggregate quantities up to 100 % as per discretion or circumstances.
- (iv) Due to large quantum of supply & limitation of the time period for completion of the supply CREDA may take consent from other Bidders if they agree to work on rates standardized by CREDA.
- (v) CREDA may undergo agreement with those eligible Bidders who give consent to work on rates standardized by CREDA and may allocate work to them. Rates approved through this Bid may be standardized for all eligible Bids to work in **year 2021-22 and year 2022-23** and shall be valid till **30-03-2023**. However CREDA reserves right to curtail or extend this period.

16. COMMUNICATIONS -

- A. All the communication between Bidder and CREDA shall be in writing. Notice sent by Fax or other Electronic means shall be effective on confirmation of the transmission. Notice sent by registered post or speed post shall be effective of delivery or at expiry of normal delivery period as under taken by Postal Service.
- B. Offers through Telegraph/Fax/Emails/Post/Courier or open offers etc. received shall be summarily rejected.

17. BID DOCUMENT FEE AND EARNEST MONEY-

- A. Each Bidder must pay the Bid Document Fee and the EMD in the form of RTGS/NEFT as a single transaction only as mentioned in the NIT vide 6171/CREDA/HOR/RE-V/HSM SOLAR PCU/2021-22 dated: 29-07-2021 and in this bid. Bid Document Fee & EMD submitted in any other form e.g.

Cash/Bank Guarantee/FDR /TDR etc. shall not be accepted.

- B.** MSME unit registered for manufacturing or service of solar Inverter/PCU or its components in Chhattisgarh state and public sectors of government are exempted from EMD subjected to submission of valid document i.e. competency certificate and the same must be uploaded on the portal failing which the tender shall not be accepted and the MSME unit will have to deposit the tender document fee Rs. 5,900/- through NEFT/RTGS in CREDA's account mentioned in the NIT.

18. SUBMISSION / DISPLAY OF SAMPLES -

Bidders will have to provide samples of their inverter/PCU as per point 24. All items should be submitted for examination before **05:00 PM dated 16-08-2021** at H.O. CREDA, VIP Airport Road, Raipur. These samples shall be examined by Technical Committee of CREDA.

19. PRE-BID SUBMISSION OF QUERIES -

- A.** All suggestions, doubts, confusion, request, queries etc., shall have to be submitted to CREDA in writing before **10.08.2021 till 5:00 PM**. After that any representation in this regard shall not be considered. The purpose of the pre-bid queries is to clarify issues regarding this tender that can be raised at that stage
- B.** Amendments/clarifications, if any arising during pre-bid meet, shall be uploaded on www.creda.co.in and on the Chhattisgarh e-Procurement portal. It is advisable for all Bidders to attend this Pre Bid Meeting.

20. TECHNICAL CRITERIA -

Bidder must have valid test reports of solar off-grid inverter, solar hybrid, String, Inverters for all category separately in the name of bidder/manufacture for which Bidder must make offer for supply. They will have to provide copy of such test report of their Solar Inverter/PCUs from any test centre approved by Ministry of New & Renewable Energy (MNRE)/NABL. **Bidders will be debarred from price bidding for all other categories for which they have not submitted valid test report / acknowledgement.**

Bidders may submit Acknowledgement of submission of samples **fee receipt from MNRE/NABL approved test centres** for offered Solar Inverter/PCUs for testing (**in case they don't have approved test certificates of offered Solar Inverter/PCUs at the time of bid**). Bidders shall be required to submit the approved test certificates before raising claim for payment else payment shall not be made to them.

Bidders shall have to submit the Test certificate against Acknowledgement within 90 days of execution of agreement otherwise EMD may be forfeited and bidder may be blacklisted / debarred by CREDA. However this time limit may be further extended / reduced by CREDA if required. Bidder has to submit an undertaking in this regard at the time of bid submission.

The bidder also shall have to submit a self-declaration that the Solar Inverter/PCUs for which bidder is quoting offers are conforming to the latest guidelines and specification of MNRE issued for testing and BIS compliance.

21. FORFEITURE OF EARNEST MONEY DEPOSIT -

It should be clearly understood that in the event of Bidder failing to enter into the agreement in the prescribed format on their quoted rates and also fails to execute assigned works under any Scheme of CREDA, within stipulated time, if he is so communicated within the validity period of the offer, the full amount of earnest money will be forfeited and Bidder shall be debarred from future business with CREDA. CREDA's decision in this regard will be final and binding on the Bidders.

22. PRICE OF SUPPLY OF INVERTER/PCU -

- I.** The Price quoted for all Inverter/PCU with 5 years' onsite warranty. The GST shall be paid extra as per prevailing rate. The prices shall be filled exactly as per **e-Price Bid enclosed**.
- II.** Any change in GST shall be become applicable during the period of contract.

23. ENGINEERING DOCUMENT -

Bidders will have to submit Engineering Documents with technical details, Specifications of components and make etc. to CREDA for approval, as and when asked by CREDA. Supply may only be started out only after approval of the Engineering Document/Drawing and their samples.

24. SAMPLES -

Samples of the Solar Inverter/PCUs shall have to be submitted to the CREDA in prescribed manner on scheduled date.

S no	Details	Capacity of Inverter/PCU	Nos of sample
1	Solar Off-grid Inverter	04KW/96V	01 Nos
2	Solar Hybrid Inverter/PCU	03 KW/48V	01 Nos
3	Solar String Inverter/PCU	05 KW	01 Nos

Samples of eligible bidder shall be the property of CREDA. CREDA may use them for testing at any site. The samples of parties who are not found eligible in the tender will be returned back to them after the finalisation of tender and receipt of letter from concerned bidder.

25. INSPECTIONS -

CREDA reserves right to inspect the material at Godowns / Temporary Stores before dispatch and also at works sites.

26. TAX OBLIGATIONS -

CREDA shall deduct TDS for Income Tax, applicable cess on Civil Work etc. under various acts and deposited with the appropriate authority. Costs and taxes before execution of agreement with CREDA so as to ensure tax deposition as per Government Rules accordingly.

27. JURISDICTION OF THE COURT -

Any dispute arising out of the contract shall be subject to the jurisdiction of Hon'ble High Court of Chhattisgarh.

28. CORRUPT OR FRAUDULENT PRACTICES -

1. CREDA requires the bidder to strictly observe the laws against fraud and corruption in force in India, namely, Prevention of Corruption Act, 1988.
2. It is required that each bidder (including their respective officers, employees and sub-contractors) adhere to the highest ethical standards, and report to the Government/ Department all suspected acts of fraud or corruption or coercion or collusion of which it has knowledge or become aware, during the tendering process and throughout the negotiation or award of contract.

SECTION - 2

GENERAL CONDITIONS OF CONTRACT

1. DEFINITIONS -

In writing General Conditions of Contract, the specifications and bill of quantity, the following words shall have the meanings hereby indicated, unless there is something in the subject matter or content inconsistent with the subject.

- CREDA shall mean the Chhattisgarh State Renewable Energy Development Agency represented through the Chief Engineer.
- Work shall mean any work entrusted to the Bidder as mentioned in the scope of work and Work Order.
- The "Engineer in charge" shall mean the Engineer or Engineers authorized by CREDA for the purpose of this contract. Inspecting Authority shall mean any Engineering person or personnel authorized by CREDA to supervise and inspect the Technical Specification of the Inverter/PCU.
- "The Eligible SI/Bidder" shall mean the Bidder awarded with the contract or their successors and permitted assigns. Contract Price shall mean the sum named in or calculated in accordance with the provisions of the contract as the contract price. General Conditions shall mean the General conditions of Contract.
- "Specifications" shall mean the specifications annexed to these General Conditions of contract and shall include the schedules and drawings attached thereto or issued to the eligible bidder from time to time, as well as all samples and pattern, if any,
- "Month" shall mean calendar month. "Writing" shall include any manuscript, typewritten, printed or other statement reproduced in any visible form whether under seal or written by hand.

2. PROOF OF MANUFACTURER -

Those bidders who are also manufacturers of an important component of Inverters/PCU shall have to submit proof of their factory, SSI Registration and list of Machineries and Equipment.

3. CONTRACT DOCUMENT -

The term "Contract" shall mean and include the General conditions, specifications, schedules, drawings and Work Orders etc., issued against the contract schedule of price or their final general conditions, any special conditions applying to the particular contract specification and drawings and agreement to be entered into. Terms and conditions not herein defined shall have the same meaning as are assigned to them in the Indian contract Act or any other Act in vogue or by any person of common knowledge and prudence.

4. MANNER OF EXECUTION -

Execution of work shall be carried out under Government Mode Scheme of CREDA in an approved manner as outlined in the technical specifications or where not outlined, in accordance with desired Specifications laid down by CREDA, to the reasonable satisfaction of the Engineer.

5. VARIATIONS, ADDITIONS & OMISSIONS -

CREDA shall have the right to alter, amend, omit, split or otherwise vary the quantum of supply, by notice in writing to the Bidder. The eligible Bidder shall carry out such variation in accordance with the rates specified in the contract so far as they may apply and where such rates are not available; those will be mutually agreed between CREDA and the eligible Bidder.

6. INSPECTION -

- A. The Engineer-in-Charge or his authorized representative(s) shall be entitled at all reasonable times to inspect and supervise and test during supply and commissioning. Such inspection will not relieve the eligible bidder from their obligations under this contract.
- B. Material can be inspected before dispatch or in transit by the authorized representatives of CREDA at the factory / Godowns at the cost of the eligible bidder, if desired by CREDA.
- C. CREDA will undertake real time performance and quality test of randomly selected Solar Inverter/PCUs and its components during the course of execution as per the specifications and guidelines laid by CREDA to ensure quality and performance of Inverter/PCU and components.

7. COMPLETION OF WORK -

Time being the essence of contract, the supply of the Solar Inverter/PCUs shall be completed within the time schedule prescribed in the Work Order.

8. ELIGIBLE BIDDER'S DEFAULT LIABILITY -

CREDA may by written notice of default to the eligible bidder, terminate the contract in circumstances detailed hereunder -

- (a) If in the opinion of the CREDA, the eligible bidder fails to complete the supply within the time specified in the supply Order or within the period for which extension has been granted by CREDA to the eligible bidder.
- (b) If in the opinion of CREDA, the eligible bidder fails to comply with any of the provisions of this contract.
- (c) In the event of CREDA terminating the contract in whole or in part as provided in paragraph (a) above, CREDA reserves the right to engage another eligible bidder or agency upon such terms and in such a manner as it may deem appropriate and the eligible bidder shall be liable to CREDA for any additional costs or any losses caused to CREDA as may be required for the supply of the Solar Inverter/PCUs and or for penalty as defined under this Bid document until such reasonable time as may be required for the final completion of the work.
- (d) In the event CREDA does not terminate the contract as provided in paragraph (a) the eligible bidder shall continue performance of the contract, in which case he shall be liable to CREDA for penalty for delay as set out in this Bid document until the work is completed.

9. FORCE MAJEURE -

The eligible bidder shall not be liable for any penalty for delay or for failure to perform the contract for reasons of FORCE MAJEURE such as of God, acts of public, enemy, LWE problems, acts of government, cyclone, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes provided that if bidder shall submit delay notice with appropriate cause of delay to the CREDA in writing within **15 days** of force majeure. CREDA shall verify the facts and may grant such extension as facts justify. Delay in supply of any accessories of Inverter/PCU etc. by the related vendors, to whom the Bidder has placed order, shall also not be treated as force majeure.

10. REJECTION OF WORKS -

In the event of any of the material supplied/work done by the eligible bidder is found defective in material or workman ship or otherwise not in conformity with the requirements of this contract specifications, CREDA shall either reject the material and/or work and advise the eligible bidder to rectify the same. **CREDA may impose penalty for such rejection up to the 200% cost of the entire system. Habitual/repeated offenders shall be black listed/debarred to participate in the any Bid/ Activity of CREDA till further orders.** The eligible bidder on receipt of such notices shall rectify or replace the defective material and rectify the work free of cost. If the eligible bidder fails to do so CREDA may -

- a) At its option replace or rectify such defective materials and/or work and recover the extra cost so involved from the eligible bidder plus **15%** service charges of the cost of such rectification, from the eligible bidder and/ or terminate the contract for balance work/ supplies with enforcement of penalty **as stated above.**
- b) Defective materials/workmanship will not be accepted under any conditions and shall be rejected outright without compensation. The eligible bidder shall be liable for any loss/damage sustained by CREDA due to defective work **with enforcement of penalty as stated above.**

11. EXTENSION OF THE TIME -

If the completion of installation is delayed due to any reason beyond the control of the eligible bidder, the eligible bidder shall without delay give notice to the CREDA in writing of his claim for an extension of time. CREDA on receipt of such notice may or may not agree to extend the contract/delivery date of the inverter/PCU as may be reasonable but without prejudice to other terms and conditions of the contract.

12. MAKES OF EQUIPMENTS TO BE USED IN THE WORK -

- (I) The Solar Inverter/PCUs, Charge Controller & Other BOS shall be made in India except in case of string inverters subjected to the availability of service centre in INDIA.

- (II) The eligible bidder has to ensure that equipment's as per Technical Requirements of guidelines of CREDA as complied with. The material/works for which CREDA/MNRE or BSI or ISI specification is not available, engineer-in-charge of the works will examine and approve the material/works, preferably of all makes on which CREDA has report of satisfactory performance. Test certificates for inverters/PCU should be submitted to the engineer-in-charge of the works before installation of the same.
- (III) Successful bidder upon issue of LOI must submit Manufacture Authorization Form (MAF) From manufacture of Solar Inverter/PCU ,Charge Controller which it is intending to use during supply guarantee at least five year warrantee of Inverter/PCU before supply of Inverter/PCU, **no payment shall be made if he fails to do so.**
- (IV) Eligible bidder should submit warrantee Agreement of **at least 5 years** for Solar Inverter/PCUs with manufacturer or distributors certified by the manufacturer before supply of Solar Inverter/PCUs, for any manufacturing defects or bad workmanship.

13. WARRANTEE PERIOD AND POST SUPPLY SERVICES -

- A. The work done/material supplied by the eligible bidder should be warranted for satisfactory operation and against any defect in material and workmanship including Solar Inverter/PCUs ,charge controllers and other balance of equipment's, at least for a period of **5 (five) years**, from the date of supply of the inverters.
- B. The above warrantee certificates shall be furnished to the CREDA for approval. Any defect noticed during this period should be rectified by the supplier free of cost upon written notice from CREDA provided such defects may be due to bad workmanship or bad materials used.
- C. The warrantee period shall be extended by the period during which the Inverter/PCU remains non-operative due to reasons within control of the eligible bidders.
- D. This warrantee must be an unconditional onsite warrantee and the eligible bidder will have to replace the defective material within **7 days** positively from the date of information given to him.
- E. Care should necessarily be taken to make the Solar Inverter/PCUs operational, once the reporting of the fault/non-operational status is done, within a week. If the Inverter/PCU is not made operational within **7 days** CREDA may rectify the same at the cost of bidder and the warrantee period shall be extended for a month for the same.
- F. Eligible Bidder shall have to establish their service stations in headquarter and shall have to keep sufficient quantity of spares and man power to ensure proper service network for taking care of smooth functioning of Inverter/PCU supplied by them. Eligible bidder shall have to give a toll free number to register complaints.

14. TERMS OF PAYMENT -

The following terms of payment shall apply for the Bid -

- A. **97%** of the eligible payment as per the supply Order after satisfactory supply, performance test of the Inverter/PCU at site with proper handing over.
- B. Balance **3%** of the eligible payment (Without GST) shall be retained by CREDA as Performance Security for a period of **60 months from the date of supply or commissioning of inverters whichever is earlier.**

15. PENALTY FOR DELAY IN COMPLETION OF CONTRACT -

If the eligible SI fails to complete the assigned work within the schedule time specified in the sanction order or any extension granted there to, CREDA will recover from the bidder as penalty a sum of half percent (0.5%) of the system price excluding GST/Tax for every delayed system per week. For this purpose, the date of taking over shall be reckoned as the date of completion. The total penalty shall not exceed 5% (Five Percent) of the cost.

However, imposition of such penalty shall be discretion of CREDA. This penalty may be decrease, increase or waived off due to various justified reasons on ground with recommendations of field staff on record. Period declared as lockdown or local quarantine /containment zones due to Covid-19 pandemic shall be waived off for the purpose of penalty.

Review of the progress of supply of Inverter(s)/PCU(s) bank allocated to bidders shall be done time to time by CREDA and if the progress of supply of Inverter(s)/PCU(s) is found unsatisfactory, the allocation of entire remaining supply or their part of can be re-allocated to other bidders as per discretion of CREDA.

16. SECURITY DEPOSIT (SD) -

- A.** The Earnest Money shall be retained by CREDA for a period up to which the tender/RC is live after agreement is done to execute all the supply works referred to in the Bid documents upon the terms and conditions contained or referred to therein and to carry out such deviations as may be required by CREDA.
- B.** Beside this, 3% of the cost shall also be retained as SD during the five years of warrantee period. No interest shall be payable on the Security Deposit.
- C.** Period for which EMD and SD are to be retained may be extended in case the warrantee period is extended due to non-performance of the system.

17. INSURANCE -

- A.** The eligible bidder shall arrange insurance coverage for the materials at his/ beneficiary's custody for the work under execution and successful commissioning and subsequent handover to the beneficiary. The eligible bidder shall take up insurance or such other measures for the manpower so as to cover the claim for damage / accident under workmen's compensation Act and other applicable State/Central laws. CREDA shall not bear any responsibility on this account.
- B.** Eligible bidder shall arrange for insurance coverage for complete material supplied during warrantee period i.e. for **05 years** from the date of supply. Insurance should cover for damage and theft. In case of such incidence, bidder must replace the lost/damaged part within **7 days** from the date of intimation.

18. PENALTY DUE FROM THE ELIGIBLE BIDDER -

All costs of damages and delays for which the eligible bidder is liable to the CREDA will be deducted from any money due to the eligible bidder including the security deposit of any project under CREDA.

19. ELIGIBLE BIDDER'S RESPONSIBILITY -

Notwithstanding anything mentioned in the specifications of subsequent approval or acceptance of the Solar Inverter/PCUs by CREDA, if any, the ultimate responsibility for satisfactory performance of the entrusted work shall rest with the eligible bidders. If in any case the eligible bidder does not complete the Supply as per the supply Orders issued to them then CREDA may take over the task & complete the project at the risk and cost of eligible bidder.

20. RESPONSIBILITY TO RECTIFY THE LOSS AND DAMAGE -

If any loss or damage occurs to the work or any part thereof or materials/plant/equipment's for incorporation therein the period for which the eligible bidder is responsible for the cause thereof or from any cause whatsoever, the eligible bidder shall at his own cost rectify/replace such loss or damage, so that the permanent work confirms in every respect with the provision of the contract to the satisfaction of the Engineer. The eligible bidder shall also be liable for any loss or damage to the work/equipment's occasioned by him in course of any operation carried out to him during performing the contract.

21. RESPONSIBILITY TOWARDS THE WORKMAN OR OUTSIDERS –

- A.** The eligible bidder shall have to take insurance coverage from any authorized Insurance Company against Workmen compensation due under Workmen Compensation Act and submit copy of the insurance document before issuance of Work Order.
- B.** The eligible bidder shall ensure all safety measures during execution and repairs of the work. CREDA, will, in no case be responsible for any accident fatal or non-fatal, caused to any workman or outsider in course of transport or execution or repairs of work.
- C.** All the expenditure including treatment or compensation will be entirely borne by the eligible bidders. The eligible bidder shall also be responsible for any claims of the workers including, labour payments PF, Accidental Insurance, Gratuity, ESI & other legal obligations.
- D.** CREDA shall have all rights to deduct such claims of payments from bidder in case of complaints of such violations.

22. NON-ASSIGNMENTS -

The eligible bidder shall not assign or transfer the supply Orders issued as per this contract or any part thereof without the prior approval of CREDA. If eligible bidder transfer/assigned/sublet full or any part of work allocated to him without prior permission from CREDA in writing to any third party shall be liable to debar/black listed from any Bid/Activity of CREDA till further orders.

23. CERTIFICATES NOT TO AFFECT RIGHTS OF CREDA -

The issuance of any certificate by CREDA or any extension of time granted by CREDA shall not prejudice the rights of CREDA in terms of the contract nor shall they relieve the eligible bidder of his obligations for due performance of the contract.

24. SETTLEMENT OF DISPUTES THROUGH ARBITRATION -

- A.** Except as otherwise specifically provided in the contract, all disputes concerning questions of fact arising under the contract shall be decided by the Chief Executive Officer (CEO), CREDA provided a written appeal by the eligible bidder is made to CREDA. The decision of the CEO, CREDA shall be final and binding to the all concerns.
- B.** Any dispute or difference including those considered as such by only of the parties arising out of or in connection with the contract shall be to the extent possible be settled amicably between the parties. If amicable settlement cannot be reached then all disputed issues shall be settled by arbitration.

25. LAWS GOVERNING CONTRACT -

The contract shall be constituted according to and subject to the Laws of India and jurisdiction of the High Court of Bilaspur, Chhattisgarh.

26. LANGUAGE AND MEASURES -

All documents pertaining to the Contract including specifications, schedules, notice correspondences, operating and maintenance instructions, drawings or any other writings shall be written in English / Hindi language. The metric system of measurement shall be used in this contract.

27. CORRESPONDENCE -

- A.** Any notice to the eligible bidder under the terms of the contract shall be served by registered mail to the registered office of the eligible bidder or by hand to the authorized local representative of the eligible bidder and copy by post to the eligible bidder's principal place of business.
- B.** Any notice to CREDA shall be served to the Chief Engineer (RE-V), CREDA Raipur in the same manner.

28. SECRECY -

The eligible bidder shall treat the details of the specifications and other documents as private and confidential and they shall not be reproduced without written authorization from CREDA.

29. AGREEMENT -

The successful eligible bidder shall have to enter into an agreement with the CREDA in the approved contract agreement form within **10 days** of the receipt of call from CREDA.

30. DECLARATION OF CONFLICT OF INTEREST –

- A.** The bidder shall not be permitted to Bid for the work if the section of HO CREDA (responsible for implementation of work) in which his near relative is posted. Furthermore, the successful bidder shall not be given work in the district in which his near relative is posted. The bidder shall also intimate the names of his near relatives working in the CREDA. Bidder shall also intimate the name of persons who are working with him in any capacity and who are near relatives to any employee in CREDA. Any breach of this condition by SI would render himself liable to be blacklisted for three years and removed from approved list of SI.
Note: - By the term near relatives are meant Wife, Husband, Parents and son, Brother, Sister, Brother-in-law, Father-in-law, and Mother-in-law etc.
- B.** Bidder must produce an affidavit (Annexure-III) stating the names of retired/removed employee of CREDA (if any) in his employment who retired /removed within last two years, if in case there is no such person in his employment, his affidavit should clearly state this fact. This affidavit is mandatory, if it is not produced along with the bid, the bid shall be rejected.

31. BID EVALUATION CRITERIA -

- A.** Offers of only those parties, who are found qualified based on Eligibility Criteria and Techno-commercial Bid, will be taken into further consideration and financial bid of only those parties who are

qualifying the criteria of Techno-commercial Bid will be opened.

- B.** Other things being equal, the lowest rates shall normally be preferred, but CREDA shall have rights and liberty to amend/lower the rates.
- C. Conditional Bids shall not be accepted.**
- D.** However CREDA shall have rights and liberty to call any /other parties to work on approved rates as and when required in accordance with quantum of work and scheduled time limits for completion of targets.

32. EVALUTION OF PRICE BID -

Price bid shall be evaluated on the basis of Quoted rates. Lowest rates of each category of Solar Inverter/PCUs shall be considered however CREDA shall have discretionary power to amend/lower the rates.

33. ALLOCATION OF TARGETS AND AREA OF WORK -

The supply shall preferably allotted to the bidder on L-1 rates subjected to rate reasonability however the CREDA has sole discretionary power to award work to any other eligible bidder, based on their performance, on L-1 rates.

34. BID REJECTION -

If financial bid of a bidder has been opened on the basis of technical bid of a bidder which has been determined to be substantially responsive to the bidding document and in latter stage it is found that bidder does not meet the eligibility criteria or the technical bid is found substantially non-responsive, CREDA reserves rights to reject such bid of a bidder any time.

We (on behalf of Eligible Bidder) have read all the above stated details & accept to comply with it in total

(Name, Signature & Seal of the Bidder)

SECTION-3

SCOPE OF WORK AND TECHNICAL SPECIFICATION OF SOLAR INVERTER/PCU

Supply of Solar off grid, solar hybrid Inverter/PCU and String Inverter/PCU for Solar Application for solar power plant anywhere in the State of Chhattisgarh as per these tender norms.

1. SPECIFICATION OF SOLAR OFFGRID INVERTER/PCU

GENERAL FEATURES:

The PCU for Solar Application should be capable of running both stand alone as well as hybrid (online mode) mode in an unattended SPV Power Plant unit PCU should be of very high quality having high efficiency and microprocessor controlled type. It shall be capable of monitoring its own parameters. The inverter should be completely compatible with the charge controller and distribution panel and may be of integral design. If CREDA finds the rates as per the demand of the project, then the rates may be standardized capacity wise, if required. The inverters should have following features:

- For DC to AC energy conversion, reliable and efficient solid-state inverters shall be used.
- The inverter shall be designed for continuous, reliable and prime power supply as specified.
- The inverter shall have high conversion efficiency from 25% load to the full rated load. The conversion efficiency at 25% load shall not be less than 90% of that at full rated load. The efficiency of the inverter shall be more than 90% at full load. The supplier shall specify the conversion efficiency in the offer.
- The inverter shall have high overload capability. The overload capability of the inverter shall be a minimum of 200% at rated full load for minimum period of 30 sec. The supplier should specify the overload capacity in the bid.
- The output power factor of the inverter should be of suitable range to supply or sink reactive power.
- The PCU shall have strong short circuit protection. The PCU shall have automatic restart facility after overload-triggered shutdown.
- The output voltage of the inverter should be sinusoidal with harmonic distortion less than 3% THD.
- The dimension, weight, foundation details etc. of the inverter shall be clearly indicated in the detailed technical specification and the same should be submitted along with the bid.
- Inverter should have digital LCD display mounted on it for displaying:-
 - ☐ Charging current
 - ☐ Charging voltage
 - ☐ Output current
 - ☐ Voltage of battery bank
 - ☐ Output voltage
 - ☐ Voltage of SPV Panels
 - ☐ Grid Voltage (for online mode)
 - ☐ Inverter loading in watt
 - ☐ Frequency of output power
- There should be a compulsory protection from lightening & short circuit installed in the circuit.

PROTECTION & SAFETY:

Specifically the inverter should be a single phase static solid state type Power Conditioning Unit both AC & DC lines shall have suitable fuses and contractors to allow safe start up and shut down of the system. Fuses used in the DC circuit should be DC rated. Inverter should have overload, surge current protection, High Temperature, over/ under voltage and over/ under frequency.

The inverter shall have provision for input & output isolation (automatic & manual). One set of important and necessary spare parts, control cards recommended by the manufacturer are to be supplied with the inverters for any immediate requirement (Optional). Each solid-state electronic device shall have to be protected to ensure long life of the inverter as well as smooth functioning of the inverter. Protection from Lightening has to be provided. Protection from reverse current due to any faults should be provided. Replacement of all types of cards installed in the PCU must be very easy & trouble free.

PCU Specification 500VA to 10KVA
Salient features of the Inverters shall be as follows:

Nominal Capacity	(1) 500 VA (12V), 1KVA (24V & 48 V), 2/ 3 KVA (48 V) Single Phase PCU LCD/LED Display. (2) 4/5/6/8 (96 V) Single Phase PCU LCD Display (3) 8/10KVA (120V) PCU Single Phase with Single LCD Display
Type of Charger	1 KVA to 3 KVA (charger MPPT, IGBT/MOSFET based & 4KVA to 10 KVA with charger based on IGBT Only)
input Voltage	12/24/48/96/120 VDC Nominal, The voltage variation shall be as per change in array output.
Output Voltage	230 V +/- 5% for single phase.
Regulation	From minimum to maximum voltage 1-2 %
Output	1-Phase, 0.9 PF
No load Power consumption	<2% of total output rating
DC reverse polarity protection	Should be provided in the inverter.
Output Frequency	50 Hz+ 0.5 Hz Pure sine wave.
Overload Capacity	200% for 30 Second
Efficiency	80% at 50% of load and More than 87% at full load 0.9 PF
Short Circuit Protection	Circuit Breaker and Electronics protection against sustained fault. Protection against the lightening fault.
Low Battery Voltage	Automatic Shut Down
Total Harmonic Distortion	Less than 3%
Over Voltage	Automatic Shut Down
AC over Current/Load	Automatic Shut Down
Protection	Over Voltage both at input & output. Over Current both at input & output. Over Frequency. Surge voltage induced at output due to external source.
Instrumentation & Indication	Input & Output voltage, Frequency, Power output, efficiency of the inverter & charge controller, different status of inverter, kind of fault by LED & audio signal(Buzzer).

Remark:- The capacity of 8KVA & 10 KVA/120 Volt Single phase PCU should have following features.

- Continuous battery life and state of health monitoring.
- It should have Integrated data and fault logging
- It should have Communication with external SCADA/network/PC
- It should All parameters are software configurable
- It should have facilities like Remote diagnostics, monitoring and reporting via Internet and GSM.
- The PCU should be equipped with a data logger for collecting & recording the hourly data of grid status particular voltage & frequency.
- PCU should have provision for PCU by-pass arrangement so as to cater load directly through grid, in case of PCU failure.
- There should be emergency stop switch on the front panel of PCU.

Power Conditioning Unit (PCU) for Solar Application: 10KVA to 100KVA Three Phase
Main Features of the PCU:

PCU should be a combined unit comprising of inverter, charge controller, visual display and necessary protections.

- It should be Industrial grade bi-directional Inverter
- It should have Integrated P V Charger Controller.
- It should be rated for continuous operation at full load.
- It should have Programmable battery management parameters.

- It should have Temperature compensated battery charging.
- It should have solar priority grid charging.
- It should Automatic re-start after over load triggered shutdown.
- It should have Continuous battery life and state of health monitoring.
- It should have Integrated data and fault logging
- It should have Communication with external SCADA/network/PC
- It should All parameters are software configurable
- It should have facilities like Remote diagnostics, monitoring and reporting via Internet and GSM.
- The PCU should be equipped with a data logger for collecting & recording the hourly data of grid status particular voltage & frequency.
- PCU should have provision for PCU by-pass arrangement so as to cater load directly through grid, in case of PCU failure.
- There should be emergency stop switch on the front panel of PCU.

SPECIFICATION:

Switching elements	IGBT/MOSFET
Type of Charger	MPPT- PI specify the range of Voltage with each capacity of system
Nominal Inverter Capacity	10KVA to 100 KVA
Nominal Array Capacity	10KW to 100 KW
MPPT Range	AS APPLICABLE
Battery nominal Volt	120V to 240V
Inverter Surge Rating @ 40 deg C	105 % > 60 sec
	150 % > 30 sec
	200 % > 5 sec
Inverter Output Voltage	415V+/- 2% for three phase
Inverter Output Frequency	50 +/- 0.5% Hz Pure sine wave.
Grid Voltage	415V+/- 2% for three phase
Grid Frequency	50 Hz (Range 48 to 51 Hz)
Overload Capacity	200% for 30 Second
Efficiency	80% at 50% of load and More than 87% at full load 0.9 PF
Inverter THD	<3%
DC Ripple	<3%
Dielectric strength	1.1 KV between input/output and ground with EMI protections removed.
Inverter Efficiency @ 40 deg C, nominal load	>90%
Operating Ambient Temp.	0 to 50 deg C
Humidity	95% max. Non condensing
Enclosure	Free standing, IP 21 , Epoxy powder coated
Cooling	Temperature controlled fan forced
Protections	<ol style="list-style-type: none"> 1. Short Circuit 2. Overload 3. Over Temperature 4. Over Voltage 5. Lightning 6. Phase imbalance (in case of three phase output) 7. Reverse polarity 8. DC input Reverse Polarity 9. DC input Under voltage & over voltage

NOTE: INVERTERS WITH NET OUTPUT SIMILAR TO ORDERED CAPACITY WILL ONLY BE ACCEPTED.

2. SPECIFICATIONS OF SOLAR HYBRID INVERTER/PCU

The power conditioning unit should be Hybrid type such that Inverter/PCU should have facility to synchronize with grid, export excess PV power into grid as well as work in standalone mode when grid is not available. The unit should be an integrated unit comprising MPPT solar charger and bidirectional Inverter/PCU. The details of solar charge controller & bidirectional Inverter/PCU should be as under:

3. SOLAR CHARGE CONTROLLER:

Solar Charge controller should be an MPPT type only such that it tracks the maximum power point of PV panels all the time to maximize PV generation. MPPT charger should include below minimum features:

- 3.1 Solar charger should be enclosed in a single unit along with bidirectional Inverter/PCU.
- 3.2 All the parameters of solar charger should be displayed on a common display on the front panel.
- 3.3 Three stage battery charging (float, boost & equalize stages) for long life of the battery should be ensured in the Solar Charger topology.
- 3.4 Battery current limiting feature should be provided so as to avoid overcharging of batteries and charger should limit the current going in the batteries in such a situation.
- 3.5 Battery & PV reverse polarity protection to be provided
- 3.6 Rated MCCB/ MCB on all PV inputs & battery inputs.
- 3.7 For rating above 50 KW, 3 MPPT chargers should be provided of equal capacity for better generation. Similarly for systems above 200KW minimum 4 channels of MPPT chargers should be provided. For systems below 50KW, single channel MPPT chargers are acceptable.

4. BIDIRECTIONAL INVERTER/PCU:

It should be a bidirectional Inverter/PCU unit such that the same circuit elements are used for performing inverting and battery charging (through mains) operation. It should be an IGBT/ MOSFET based; microprocessor controlled Inverter/PCU with all the desired safety features/ protections for reliable running of PCU. High frequency designs shall not be allowed and isolation transformer is must between the DC and AC side.

The below minimum features should be ensured in the Inverter/PCU unit:

- 4.1 The Inverter/PCU output should synchronize with the grid supply as long as the grid is available and is within the range. The power requirement should be met by PV power and grid power together such as in case PV power is partial Grid should take care of the deficit. The battery bank should remain in float condition (fully charged) during this time. In case PV power is excess and there battery charged, PV power should not be exported beyond the grid terminals. However there should be a possibility to change this mode and allow export of excess PV power to grid once the net metering is permitted. This feature should be settable from the front panel of the PCU.
- 4.2 As soon as the grid supply goes out of range or is absent, PCU should get disconnected from the grid and start operating in standalone mode with no interruption at the load end.
- 4.3 Operation without any derating from 0 to 50 degrees of ambient temperature
- 4.4 Overloads of 110% for 60 sec, 125% for 30 sec and 150% for 5 sec.
- 4.5 No break changeover at the load terminals between Inverter/PCU and mains (and vice versa)
- 4.6 Automatic reset of all non-critical faults such as overloads, AC over voltage/ under voltage etc. once the fault has been cleared.

5. THREE PHASE GRID CHARGER:

The same bidirectional Inverter/PCU should act as a battery charger incase solar PV power is not available and battery is discharged below a predefined level. The mains based battery charger should incorporate below minimum features:

- 5.1 Facility to bypass grid to loads and charge batteries at the same time
- 5.2 Should be IGBT/ MOSFET based for rugged operation.
- 5.3 Should have a peak efficiency of at least 85% for AC to DC conversion.
- 5.4 3 stage battery charging for long life of the battery.
- 5.5 Facility to enable/ disable charging of battery through mains by controlling the import power from mains.

6. TECHNICAL SPECIFICATIONS OF SOLAR HYBRID INVERTER/PCU

Sl. No.	PARAMETERS	SPECIFICATIONS
4.1	Output Voltage	230V for single phase and 230/415Volts \pm 1% three phase, 4 wire output for three phase.
4.2	Output Frequency	50Hz \pm 0.5% during standalone Inverter/PCU operation. Inverter/PCU to follow generator frequency up to \pm 3 Hz of the nominal output frequency during synchronized operation
4.3	Rating	as stated below from 03KW -150KW
4.4	Surge Rating	Up to 150% of the continuous rating for a minimum of 5 seconds
4.5	Waveform	Sine wave output
4.6	THD	Less than 4%
4.7	Efficiency	>90% peak efficiency for single phase units. >92% peak efficiency for three phase units.
4.8	Regulation	Better than 2%
4.9	Phase Load imbalance	100% between phases for 3 phase units.
4.10	Internal Protection System	<ul style="list-style-type: none"> • Inverter/PCU overload • Short circuit protection • Over/under AC voltage protection • Over/under frequency protection • Over/under battery voltage protection
4.11	Front Panel Display (Inverter/PCU)	<ul style="list-style-type: none"> • PV Volts, Amps, Power. • Inverter/PCU O/P Voltage, Current, Frequency • Mains Voltage, Current, Frequency • Battery Voltage, Current • Mode of Operation, Active Faults • Mimic diagram
4.12	Circuit Breakers	<ul style="list-style-type: none"> • PV (each Channel) • Battery • Mains • Load
4.13	Environmental	
4.14	Operating Temperature Range	0-50 degrees ambient

4.15	Humidity	0-90% non-condensing
4.16	Enclosure	IP-20 minimum
4.17	Data Logging	All the relevant parameters should be stored periodically in a USB stick/ pen drive/ flash drive to analyze the present and past data
4.18	Event Scheduling	It should be possible to set events on a 24 hour scale. The events shall include: Sleep Mode. Grid Charge. Grid Disconnect. Grid Export. Shut Down. If configured, these events will force the PCU to enter that particular mode.

7. REMOTE MONITORING

All the relevant parameters of PCU should be available for remote monitoring/ controlling over internet using GPRS based monitoring solution. The list of parameters should include:

5.1	Solar Charge Controller	PV Voltage, PV Current, PV power, Daily Generation, Total Generation. (all above parameters to be included for all MPPT channels individually)
5.2	Inverter/PCU/ Mains Charger	<ul style="list-style-type: none"> • Inverter/PCU Voltage, Current, Frequency • Mains Voltage, Current, Frequency • Battery Voltage, Current • Active Faults

There should be facility to turn on/ off the unit remotely using GPRS based monitoring solution. All the data should be downloadable in form of excel sheets from the portal. The portal should be accessible from anywhere through a URL, user ID and password.

Other important Features:

- (a) Three phase hybrid PCU shall be used with each power plant system.
- (b) PCU shall be capable of complete automatic operation including wake-up, synchronization & shutdown. (c) Inverter/PCU should have internal protection arrangement against any sustainable fault in feeder line and against the lightning on feeder.
- (d) Built-in meter and data logger to monitor plant performance through external computer shall be provided.
- (e) Anti-islanding (Protection against Islanding of grid): The PCU shall have anti islanding protection in conformity to IEEE 1547/UL 1741/ IEC 62116 or equivalent BIS standard.
- (f) In PCU/Inverter/PCU, there shall be a direct current isolation provided at the output by means of a suitable isolating transformer. If Isolation Transformer is not incorporated with PCU/Inverter/PCU, there shall be a separate Isolation Transformer of suitable rating provided at the output side of PCU/PCU units for capacity more than 100 kW.
- (g) The PCU/ Inverter/PCU generated harmonics, flicker, DC injection limits, Voltage Range, Frequency Range and Anti-Islanding measures at the point of connection to the utility services should follow the latest CEA (Technical Standards for Connectivity Distribution Generation Resources) Guidelines. 244 Compendium of Policies, Regulations, Technical Standards & Financing Norms for Solar Power Projects
- (h) The PCU / Solar Inverter/PCUs should comply with applicable IEC/ equivalent BIS standard for efficiency measurements and environmental tests as per standard codes IEC 61683/IS 61683 and IEC 60068-2 (1,2,14,30)/ Equivalent BIS Std.

(i) The MPPT units environmental testing should qualify IEC 60068-2 (1, 2, 14, 30)/ Equivalent BIS std. The junction boxes/ enclosures should be IP 65 (for outdoor)/ IP 54 (indoor) and as per IEC 529 specifications.

(j) The PCU/ Solar Inverter/PCUs 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.

(k) Inverter/PCU shall be applicable to operate in the both offline and online mode so that if export facility is required then it can be converted in to grid export mode.

8. Technical Details of Single Phase Hybrid Inverter/PCU

A. SOLAR CHARGE CONTROLLER (SCC)					
S no	Specification	Unit	Required Technical Specification		
Capacity of Inverter/PCU			3KW,4KW,5KW/48V	5KW,6KW,8KW/96V	10KW,15KW,20KW/120V
1	Charge Controller Type		MPPT		
2	Charger Topology		Buck Type		
3	PV Nominal Capacity (Total)	KWp	3KW,4KW,5KW RESPECTIVELY	5KW,6KW,8KW RESPECTIVELY	10KW,15KW,20KW RESPECTIVELY
4	No of MPPT Channels		1	1	1
5	Per Channel PV Capacity	KWp	3KW,4KW,5KW	5KW,6KW,8KW	10KW,15KW,20KW
6	Max. Open Circuit PV Volts (Voc)	Volts	165	360	360
7	MPPT Voltage Range	Volts	66-137	132-299	165-299
8	Battery type Supported		LMLA, VRLA, Tub-Gel VRLA, Lithium Ion		
9	Peak Charging Efficiency	%	94		
B.SOLAR INVERTER/PCU					
1	No of Phases/Connection Type		1-phase/2 wire		
2	Nominal Battery Voltage	Volts	48	96	120
3	Nominal Output Voltage/ Frequency	Volts/ Hz	230 / 50		
4	Voltage Regulation (in Standalone Mode)	%	+/- 2		
5	Freq. Regulation (in Standalone Mode)	Hz	+/- 0.5		
6	THD	%	< than 5		
7	Efficiency: Peak/ 100% Load/20% Load	%	>88 />85/ >80		
8	Load Power Factor		0.8 lag to unity		
9	Over Loads: 60 sec/ 30 sec/ 5 sec*1	%	110/ 125/ 150		
10	Auto Bypass Feature*2		Must be Provided		
11	Parallel Operation with Grid/ DG				
12	Power Export to Grid Facility				
13	Anti Islanding from Grid				
C.GRID CHARGER					
1	Grid Voltage Range (Voltage Sync. Range)	VAC	+10 % & -20 %		
2	Grid Frequency range (Freq. Sync Range)	Hz	+5% & -5%		

3	Max Grid Import Power	KW	3KW,4KW,5KW RESPECTIVELY	5KW,6KW,8KW RESPECTIVELY	10KW,15KW,20KW RESPECTIVELY
4	Peak Charging Efficiency	%	80		
D. PROTECTIONS					
PV Side: Reverse Polarity, Surge Protection (Class D)					
Battery Side: Reverse Polarity, Over/ Under Voltage, Current Limit					
Grid Side: Over/ under Voltage, Over/ Under Frequency, Surge Protection (Class D)					
Load Side: Overloads, Short circuit					
System Protection: Over Temperature					
E. USER INTERFACE					
1. DISPLAYED PARAMETERS					
Battery Side: Voltage, Current, Import kWh					
PV Side: Voltage, MPPT Charger O/P Amps, MPPT Charger O/P Energy,					
Grid Side: Phase Voltage, Frequency, Power, Power Factor					
Load Side: Phase Voltage, Phase Current, Frequency, Power, Power Factor, Export kWh, CO ₂ Graph					
System level: Mode of Operation, Active Faults, Heat Sink/ IGBT temperature, System Mimic					
2. INDICATIONS/ AUXILIARY					
Indications: Mains On, Alarm, Buzzer Mute.					
User Keypad for Settings Change.					
Breakers at all Inputs					
Local Data Storage (Provision of Micro SD card upto 32GB)*					
Remote monitoring: MUST BE PROVIDED*					
Cooling Method:-TEMPERATURE CONTROLLED FORCED COOLING					

9. Technical specification of Three Phase Solar Hybrid Inverter/PCU

A. SOLAR CHARGE CONTROLLER (SCC)							
S n o	Specification	Unit	Required Technical specification				
	Capacity of Inverter/PCU		10KW,15KW/48V	10KW,15KW,20KW/120V	10KW,15KW,20KW,25KW,30KW,40KW,50KW,60KW/240V	80KW,100kw/240V	125KW,150KW/360V
1	Charge Controller Type		MPPT				
2	Charger Topology		Buck Type				
3	PV Nominal Capacity (Total)	KWp	10KW, 15KW	10KW,15KW,20KW	10KW,15KW,20KW,25KW,30KW,40KW,50KW	80KW,100 KW	125KW,150KW
4	No of MPPT Channels		1	1	1	3	3
5	Per Channel PV Capacity	KWp	10KW, 15KW	10KW,15KW,20KW	10KW,15KW,20KW,25KW,30KW,40KW,50KW60--KW	80KW,100 KW	125KW,150KW

6	Max. Open Circuit PV Volts (Voc)	Volts	165	360	720	820
7	MPPT Voltage Range	Volts	66-137	165-299	330-598	495-681
8	Battery type Supported		LMLA, VRLA, Tub Gel VRLA, Lithium Ion			
9	Peak Charging Efficiency	%	94			
B.SOLAR INVERTER/PCU						
1	No of Phases/Conne ction Type		3-phase/4 wire			
2	Nominal Battery Voltage	Volts	48	120	240	360
3	Nominal Output Voltage/ Frequency	Volts/ Hz	415 / 50			
4	Voltage Regulation (in Standalone Mode)	%	+/- 2			
5	Freq. Regulation (in Standalone Mode)	Hz	+/- 0.5			
6	THD	%	< than 5			
7	Efficiency: Peak/ 100% Load/20% Load	%	>88 />85/ >80			
8	Load Power Factor		0.8 lag to unity			
9	Over Loads: 60 sec/ 30 sec/ 5 sec*1	%	110/ 125/ 150			
10	Auto Bypass Feature*2		Must be Provided			
11	Parallel Operation with Grid/ DG					
12	Power Export to Grid Facility					
13	Anti Islanding from Grid					
C.GRID CHARGER						

1	Grid Voltage Range (Voltage Sync. Range)	VAC	+10 % & -20 %				
2	Grid Frequency range (Freq. Sync Range)	Hz	+5% & -5%				
3	Max Grid Import Power	KW	10KW,15KW,20KW	10KW,15KW,20KW,25KW,30KW,40KW,50KW,60KW	80KW,100KW	125KW,150KW	
4	Peak Charging Efficiency	%	80				

D. PROTECTIONS

PV Side: Reverse Polarity, Surge Protection (Class D)

Battery Side: Reverse Polarity, Over/ Under Voltage, Current Limit

Grid Side: Over/ under Voltage, Over/ Under Frequency, Surge Protection (Class D)

Load Side: Overloads, Short circuit

System Protection: Over Temperature

E. USER INTERFACE

1. DISPLAYED PARAMETERS

Battery Side: Voltage, Current, Import kWh

PV Side: Voltage, MPPT Charger O/P Amps, MPPT Charger O/P Energy,

Grid Side: Phase Voltage, Frequency, Power, Power Factor

Load Side: Phase Voltage, Phase Current, Frequency, Power, Power Factor, Export kWh, CO₂ Graph

System level: Mode of Operation, Active Faults, Heat Sink/ IGBT temperature, System Mimic

2. INDICATIONS/ AUXILIARY

Indications: Mains On, Alarm, Buzzer Mute.

User Keypad for Settings Change.

Breakers at all Inputs

Local Data Storage (Provision of Micro SD card upto 32GB)*

Remote monitoring: MUST BE PROVIDED*

Cooling Method:-TEMPERATURE CONTROLLED FORCED COOLING

10. STANDARD SPECIFICATIONS FOR A GRID-TIED PV STRING INVERTER FOR SOLAR APPLICATION

Parameters	Explanation	Standards
Constructions and Safety test	Safety of power converters for use in photovoltaic power systems –Part 1: General requirements	IEC 62109-1 (Standalone Inverter/PCU& MPPT/Charge controller)
Constructions and Safety test	Safety of power converters for use in photovoltaic power systems – Part 2: Particular requirements for Inverter/PCUs - Edition 1.0	IEC 62109-2 (Central Inverter/PCU)

Anti-Islanding test		Test procedure of islanding prevention measures for utility-interconnected photovoltaic Inverter/PCUs	IEC 62116
Test related to utility		Photovoltaic (PV) systems – Characteristics of the utility interface	IEC 61727
Paralleling of Inverter/PCU		Verify that a synchronization control function will cause the paralleling device to close only when key synchronization parameters are within allowable limits.	CI 5.4 IEEE 1547.1
Paralleling of Inverter/PCU		Determine the magnitude of the synchronization start-up current.	CI 5.4 IEEE 1547.1
Technical Specifications			
S. No	Parameters	Explanation	Standard
1	Harmonics	Harmonic current injections should not exceed the limits specified in IEEE 519 (recommendation by CEA)	IEEE 519
2	Flicker	Flicker should not go beyond the limits specified in IEC 61000 (recommendation by CEA)	IEC 61000
3	DC Injection	DC injection into the grid should not be greater than 0.5% of the full rated output at the interconnection point	CEA (Technical Standards for connectivity of the Distributed Generation Resources) Regulations, 2013
4	Power factor	It should be within the limits of 0.95 lagging and 0.95 leading	CEA (Technical Standards to for Connectivity to the grid) Amendment Regulations, 2013
5	Reactive power	Inverter/PCU should be capable of supplying dynamically varying reactive power support to maintain the power factor of 0.95 lagging to 0.95 leading	CEA (Technical Standards to for Connectivity to the grid) Amendment Regulations, 2013
General Specifications			
S. no	Parameters	Explanation	Standard
1	Parameters Display	<ul style="list-style-type: none">• DC Voltage (V)• DC current (A)• DC power (W)• AC voltage (V)• AC current (A)• Apparent AC power (W)• Power Factor (Cosφ)• Active AC power (W)• Reactive AC power (W)• Daily energy generation (kWh)• Cumulative generation (kWh)• Cumulative run time (hours)	
2	Efficiency	Max. eff. >95%	Efficiency measurement procedure as per IS/IEC 61683
3	Weighted Efficiency	>94%	
4	Operating Temperature	-150C to +600C	
5	Operating humidity	0% to 98% Rh	
6	Communication Interfaces	GPRS based RMS shall be provided portals, SIM card, Data charges shall be in bidders scope for 60 months	

7	Maximum power point tracking	Should be provided	
8	Warranty	Minimum of 5 years and extendable warranty up to 10/15/20/25 years should be provided by the manufacturer	
<u>Safety Compliances</u>			
S.no	Parameters	Explanation	Standard
1	Protective systems	<ul style="list-style-type: none"> Over and under voltage trip functions if voltage reaches above 110% or below 80% respectively with a clearing time up to 2 seconds Over and under frequency trip functions, if frequency reaches 50.5 Hz and below 47.5 Hz with a clearing time up to 0.2 seconds Inverter/PCU should cease to energize the circuit to which it is connected in case of any fault in the circuit A voltage and frequency sensing and time-delay function to prevent Inverter/PCU from energizing a de-energized circuit, and preventing Inverter/PCU to reconnect to the electricity system unless voltage and frequency reached prescribed limit and are stable for 60 seconds A function to prevent the Inverter/PCU from contributing to the formation of an unintended island, and cease to energize the electricity system within two seconds of the formation of an unintended island Every time the Inverter/PCU is synchronized to the electricity system, it shall not cause voltage fluctuation greater than $\pm 5\%$ at the point of connection 	CEA (Technical Standards for connectivity of the Distributed Generation Resources) Regulations, 2013
2	Main Surge protection	Should be provided	
3	Lightning protection	Should be provided	
4	Electronics degree of protection	Protection of electronics against dust, accidental contact, and water by mechanical casings and electrical enclosures	IEC 60529 (IP 20, 54,65)
5	Degree of protection	Degree of protection for stationary use at non-weather protected locations	IEC 60721-3-4

11. Factory Test

The eligible bidder shall develop and submit a comprehensive factory acceptance test (FAT) plan to CREDA for its review and approval. FAT shall be carried out at a subsystem or module level and shall consist of all the components of inverters/PCU to the extent possible. FAT shall be demonstrated to CREDA's representative for compliance of specification, inclusive but not limited to following:

1. Visual inspection of equipment including dimensions and overall design
2. Verifications of sensors, metering and alarms
3. Verification of all control functions including remote control, monitoring and Communication interfaces
4. Verification of inverter/PCU performance at full/ partial Energy/ Power ratings
5. Verification of maintenance and replacement features for units and other components

During the FAT, Inverter/PCU shall be operated as specified & designed in all the operating states, use cases and duty cycles. It shall meet power/ energy requirements and shall be demonstrated to meet the safety requirements. Operation of all control, protective relaying and instrumentation circuits shall be demonstrated by direct tests, if feasible, or by simulating operating states for all parameters that cannot be directly tested. Automatic, local and remote operation of the controls shall be demonstrated.

Inverter/PCU shall be verified for operation at temperature extremes defined in specification. For this, if it is not possible for the full set, then independent laboratory certification of operation of critical components and subsystems shall be submitted at the time of FAT.

During FAT, if something mal-operates then FAT shall be suspended and resumed after rectification of the problem. It is the sole discretion of CREDA whether to conduct FAT test or not.

12. Transportation and Storage at Site

The bidder shall be responsible to survey, select and verify the route, mode of transportation and make all necessary arrangement with the appropriate authorities for the transportation of the inverter/PCU. The dimension of the inverter/PCU shall be such that when packed for transportation, it will comply with the requirements of loading and clearance restrictions for the selected route. It shall be the responsibility of the eligible bidder to coordinate the arrangement for transportation of the inverter/PCU for all the stages from the manufacturer's work to site.

The Eligible bidder shall dispatch the inverter/PCU in such way to avoid any accident either due to road conditions, environmental conditions and any other conditions which may be arise during transportation.

Eligible bidder shall follow all the rules, regulations and guidelines applicable for transportation of batteries in India as well as in country of origin.

13. Mandatory Spares

Bidder shall provide a list of mandatory spares for the offered system. It shall not be binding on CREDA to procure all of these mandatory spares. No mandatory spares shall be used during the commissioning of the equipment or warranty period. Any spares required for commissioning / warranty shall be arranged by the eligible bidder. The unutilized spares if any brought for such purposes shall be taken back by the eligible bidder after the specified warranty period.

14. Training

Eligible Bidder shall provide training in Chhattisgarh state to manpower identified by CREDA. Training shall cover all aspects of solar power plant and battery, specific inverter details and its operation needed for proper operation & maintenance of the system. The eligible bidder shall be responsible for determination of content & duration of for training sessions. All training materials shall be submitted to CREDA for approval. Training course requirements are described below in terms of the contents of each course. Training shall cover orientation, operation and maintenance.

☐ Orientation Course

☐ Operation & Maintenance Course

☐ Application Software Course

☐ Operator Training Course

15. Test Standards for Solar Inverter/PCU of all category

Sl. No.	Product	Indian Standard Number	Title of India Standard
1	Power Inverter/PCUs for use in Photovoltaic Power System	IS 16221 (Part-2)	Safety of Power Converters for use in Photovoltaic Power Systems Part-2 – Particular Requirements for Inverter/PCUs
2	Utility – Interconnected Photovoltaic Inverter/PCUs	IS-16169	Test Procedures of Islanding Prevention Measures for Utility-Interconnected Photovoltaic Inverter/PCUs

Section-04

1.e-Price Bid

1. e-Price Bid (For supply of Solar Offgrid, Hybrid, String)

Schedule of Rates for Offgrid, Hybrid, Solar String Inverter/PCUs

(E-bidding as per Specifications & Scope of Work of Tender No. 79770/CREDA/HOR/RE-V/HSM SOLAR PCU/2021-22 Dated: 30.07.2021)

“Rates for supply of Solar Off-grid PCU, String Inverter/PCU, Solar Hybrid Inverter/PCU of various capacity with 05 years onsite warranty conforming to the IEC/BIS and MNRE standards anywhere in the state of Chhattisgarh are”:-

S. No.	Item Description	Unit	Rate of system (Excluding GST, In Rs.)
Solar Off Grid PCU(Single Phase)			
1	500W/12V	Nos	
2	500W/24V	Nos	
3	1KW/24V	Nos	
4	1 KW / 48V	Nos	
5	2 KW /48V	Nos	
6	3 KW / 48V	Nos	
7	4 KW/ 96V	Nos	
8	5 KW / 96V	Nos	
9	6 KW / 96V	Nos	
10	8 KW/ 96V	Nos	
11	8 KW / 120V	Nos	
12	10 KW/ 120V	Nos	
Solar Off Grid PCU(Three Phase)			
13	10 KW/ 120V	Nos	
14	10 KW / 240V	Nos	
15	15KW / 240V	Nos	
16	20 KW / 240V	Nos	
17	25 KW / 240V	Nos	
18	30 KW/ 240V	Nos	
19	40 KW / 240V	Nos	
20	50 KW / 240V	Nos	
21	60 KW / 240V	Nos	
22	80 KW / 240V	Nos	
23	100 KW/ 240V	Nos	
Solar Hybrid Inverter/PCU(Single Phase)			
1	3KW/48V	Nos	
2	4KW/48V	Nos	
3	4KW/96V	Nos	
4	5KW/48V	Nos	
5	5KW/96V	Nos	
6	6KW/96V	Nos	
7	8KW/96V	Nos	
8	8KW/120V	Nos	
9	10KW/120V	Nos	
10	15KW/240V	Nos	
11	20KW/240V	Nos	
Solar Hybrid Inverter/PCU (Three Phase)			
12	10KW/48V	Nos	
13	10KW/120V	Nos	

14	15KW/120V	Nos	
15	15KW/240V		
16	20KW/240V	Nos	
17	25 KW/240V	Nos	
18	30 KW/240V	Nos	
19	40 KW/240V	Nos	
20	50 KW/240V	Nos	
21	60KW/240V	Nos	
22	80 KW/240V	Nos	
23	100 KW/240V	Nos	
24	100 KW/360V	Nos	
25	150 KW/360V	Nos	
Solar String Inverter(Single Phase)			
1	01 KW	Nos	
2	02KW	Nos	
3	03KW	Nos	
4	05 KW	Nos	
Solar String Inverter(Three Phase)			
5	5 KW	Nos	
6	6KW	Nos	
7	8KW	Nos	
8	10KW	Nos	
9	12KW	Nos	
10	15KW	Nos	
11	20KW	Nos	
12	30 KW	Nos	
13	50 KW	Nos	
14	60KW	Nos	

Certified that rates quoted above are as per the requirement, specifications, and terms & condition mentioned in the tender document. Above rates are FOR anywhere in the State of Chhattisgarh inclusive of roadworthy packing, loading, unloading, all types of incidental expenses, insurance, duties and any other job required to properly execute the work. The GST payable on the bill produced for payment to CREDA shall be paid in addition to above quoted price as per rate of GST applicable at the time of billing.

The bidder must have to attach technical data sheet for each category of inverter/PCU showing full technical details of Inverter/PCU failing which the quoted rate shall not be consider by CREDA. The technical data sheet should be uploaded on <https://eproc.cgstate.gov.in> along with tender documents.

The bidders, on the online bidding portal, will have the option to select Y/N under 'Regret' column against each item. Bidders must select Y for the items against which they do not want to quote the rates. There is no option to leave the rate field blank and hence the bidders must quotes the rates carefully.

Current rate of GST:-

(No other cost will be claimed above the price quoted)

Signature of Bidder
Name _____
Seal _____
Signature _____

ANNEXURE – I

2. DRAFT AGREEMENT

CONTRACT AGREEMENT BETWEEN Chief Engineer Chhattisgarh State Renewable Energy Development Agency (CREDA) Raipur AND M/s..... Represented by THIS CONTRACT AGREEMENT against Bid No. 79770/CREDA/HOR/RE-V/HSM SOLAR PCU /2021-22 Dated: 30.07.2021 (also referred to as "Service Contract") is made on the ____th day of _____ 2021.

BETWEEN

- (1) Chief Engineer Chhattisgarh State Renewable Energy Development Agency (CREDA) Raipur a society incorporated under the laws Society Registration Act 1973 , (1973 Sr. No. 44) (with amendment from time to time) and having its Registered Office at VIP Road Near Energy Education Park, Village- Fundhar, Raipur and (hereinafter called "The Employer" and also referred to as "CREDA")

And

- (2) Represented by a company incorporated under the laws of Companies Act 1956/2013/ Partnership firm/ Proprietorship firm/Consortium (as applicable, with amendment from time to time) and having its Principal place of business at and Registered Office at hereinafter called "The Contractor" and also referred to as "....."

Whereas the contractor has offered to enter into contract with the said CREDA for the "Standardization of Rates for Supply of Solar off grid PCU, Solar hybrid Inverter/PCU, Solar String Inverter/PCU anywhere in the state of Chhattisgarh".

Wide Bid No. 79770/CREDA/HOR/RE-V/HSM SOLAR PCU /2021-22 Dated: 30.07.2021 on the terms and conditions herein contained and the rates approved by the CREDA (Letter No. Dated annexed here to) have been duly accepted and whereas the necessary security deposit shall be furnished in accordance with the provisions of the Bid document and whereas no interest will be claimed on the security deposits.

Now these presents witness and it is hereby agreed and declared by and between parties to these presents as follows -

- 1) The Contractor shall, during the period of this contract, that is to say from to or completion thereof, until this Contract shall be determined by such notice as is hereinafter mentioned, safely carryout, by means of labours employed at his own expenses and by means of tools, implements and equipment etc. to be supplied by him to his labour at his own expenses, for supply of **"Solar Off Grid PCU, Solar hybrid Inverter/PCU, Solar String Inverter/PCU"** as described in Bid documents. (Annexed to the agreement).
- 2) The NIT (Notice Inviting Bid), Corrigendum to NIT, Notices, Bid documents (Qualifying, Technical and Financial), approved rates annexed hereto and such other additional particulars, undertaking, instructions, general conditions of contract, Scope of work, Technical specifications of Solar inverters and Annexures therein, engineering documents, detailed specifications of BOS , so far they relate to the Bid 79770/CREDA/HOR/RE-V/HSM SOLAR PCU /2021-22 Dated: 30.07.2021 as may be found requisite to be given during execution of the work shall be deemed and taken to be an integral part of the contract and shall also be deemed to be included in the expression "The Agreement or "The Contract "wherever herein used.
- 3) The contractor shall also supply the requisite number of workmen with means & materials as well as tools, appliances, machines, implements, vehicles for transportation, cartage etc. required for the proper execution of work within the time prescribed in the work orders and /or as per the Bid conditions.
- 4) The Engineer in Charge or his authorized representative (s) shall be entitled at all reasonable times to inspect and supervise and test during commissioning. Such inspection will not relieve the eligible bidder from their obligations under this contract.
- 5) Material can be inspected before dispatch or in transit by the authorized representatives of CREDA at

the factory at the cost of the eligible bidder, if desired by CREDA. CREDA reserves right to inspect the material at Godowns / Temporary Stores before dispatch and also at works sites.

- 6) CREDA shall deduct TDS for Income Tax, applicable cess on Civil Work etc. under various acts and deposited with the appropriate authority. Costs and taxes before execution of agreement with CREDA so as to ensure tax deposition as per Government Rules accordingly.

7) **ELIGIBLE SYSTEM INTEGRATOR'S DEFAULT LIABILITY -**

CREDA may by written notice of default to the eligible bidder, terminate the contract in circumstances detailed hereunder -

- (a) If in the opinion of the CREDA, the eligible bidder fails to complete the supply within the time specified in the supply Order or within the period for which extension has been granted by CREDA to the eligible bidder.
- (b) If in the opinion of CREDA, the eligible bidder fails to comply with any of the provisions of this contract.
- (c) In the event of CREDA terminating the contract in whole or in part as provided in paragraph (a) above, CREDA reserves the right to engage another eligible bidder or agency upon such terms and in such a manner as it may deem appropriate and the eligible bidder shall be liable to CREDA for any additional costs or any losses caused to CREDA as may be required for the supply of Solar Inverter/PCUs and or for penalty as defined under this Bid document until such reasonable time as may be required for the final completion of the work.
- (d) In the event CREDA does not terminate the contract as provided in paragraph (a) the eligible bidder shall continue performance of the contract, in which case he shall be liable to CREDA for penalty for delay as set out in this Bid document until the work is completed.

8) **FORCE MAJEURE -**

The eligible bidder shall not be liable for any penalty for delay or for failure to perform the contract for reasons of FORCE MAJEURE such as of God, acts of public, enemy, LWE problems, acts of government, cyclone, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes provided that if SI shall submit delay notice with appropriate cause of delay to the CREDA in writing within **15 days** of force majeure. CREDA shall verify the facts and may grant such extension as facts justify. Delay in supply of any accessories of Solar Inverter/PCUs etc. by the related vendors, to whom the Bidder has placed order, shall also not be treated as force majeure.

9) **REJECTION OF WORKS -**

In the event of any of the material supplied/work done by the eligible bidder is found defective in material or workman ship or otherwise not in conformity with the requirements of this contract specifications, CREDA shall either reject the material and/or work and advise the eligible bidder to rectify the same. CREDA may impose penalty for such rejection up to the 200% cost of the entire system. Habitual/repeated offenders shall be black listed/debarred to participate in the any Bid/ Activity of CREDA till further orders. The eligible bidder on receipt of such notices shall rectify or replace the defective material and rectify the work free of cost. If the eligible bidder fails to do so CREDA may -

- a) At its option replace or rectify such defective materials and/or work and recover the extra cost so involved from the eligible bidder plus **15%** service charges of the cost of such rectification, from the eligible bidder and/ or terminate the contract for balance work/ supplies with enforcement of penalty as stated above.
- b) Defective materials/workmanship will not be accepted under any conditions and shall be rejected outright without compensation. The eligible bidder shall be liable for any loss/damage sustained by CREDA due to defective work **with enforcement of penalty as stated above.**

10) **EXTENSION OF THE TIME -**

If the completion of installation is delayed due to any reason beyond the control of the eligible bidder, the eligible bidder shall without delay give notice to the CREDA in writing of his claim for an extension of time. CREDA on receipt of such notice may or may not agree to extend the contract/delivery date of the inverter/PCU as may be reasonable but without prejudice to other terms and conditions of the contract.

11) **PENALTY FOR DELAY IN COMPLETION OF CONTRACT -**

If the eligible SI fails to complete the assigned work within the schedule time specified in the

sanction order or any extension granted there to, CREDA will recover from the bidder as penalty a sum of half percent (0.5%) of the system price excluding GST/Tax for every delayed system per week. For this purpose, the date of taking over shall be reckoned as the date of completion. The total penalty shall not exceed 5% (Five Percent) of the cost.

However, imposition of such penalty shall be discretion of CREDA. This penalty may be decrease, increase or waived off due to various justified reasons on ground with recommendations of field staff on record. Period declared as lockdown or local quarantine /containment zones due to Covid-19 pandemic shall be waived off for the purpose of penalty.

Review of the progress of supply of Inverter(s)/PCU(s) bank allocated to bidders shall be done time to time by CREDA and if the progress of supply of Inverter(s)/PCU(s) is found unsatisfactory, the allocation of entire remaining supply or their part of can be re-allocated to other bidders as per discretion of CREDA.

12) PENALTY DUE FROM THE ELIGIBLE BIDDER-

All costs of damages and delays for which the eligible bidder is liable to the CREDA will be deducted from any money due to the eligible bidder including the security deposit of any project under CREDA.

13) ELIGIBLE SI'S RESPONSIBILITY -

Notwithstanding anything mentioned in the specifications of subsequent approval or acceptance of the Inverter/PCU by CREDA, if any, the ultimate responsibility for satisfactory performance of the entrusted work shall rest with the eligible bidder. If in any case the eligible bidder does not complete the work as per the Work Orders issued to them then CREDA may take over the task & complete the project at the risk and cost of eligible bidder.

14) RESPONSIBILITY TO RECTIFY THE LOSS AND DAMAGE -

If any loss or damage occurs to the work or any part thereof or materials/plant/equipment's for incorporation therein the period for which the eligible bidder is responsible for the cause thereof or from any cause whatsoever, the eligible bidder shall at his own cost rectify/replace such loss or damage, so that the permanent work confirms in every respect with the provision of the contract to the satisfaction of the Engineer. The eligible bidder shall also be liable for any loss or damage to the work/equipment's occasioned by him in course of any operation carried out to him during performing the contract.

15) RESPONSIBILITY TOWARDS THE WORKMAN OR OUTSIDERS -

- The eligible bidder shall have to take insurance coverage from any authorized Insurance Company against Workmen compensation due under Workmen Compensation Act and submit copy of the insurance document before issuance of Work Order.
- The eligible bidder shall ensure all safety measures during execution and repairs of the work. CREDA, will, in no case be responsible for any accident fatal or non-fatal, caused to any workman or outsider in course of transport or execution or repairs of work.
- All the expenditure including treatment or compensation will be entirely borne by the eligible bidders. The eligible bidder shall also be responsible for any claims of the workers including PF, Gratuity, ESI & other legal obligations.
- Bidder shall have to submit JCCs within **60 days** after supply of Solar Inverter/PCUs in District Office of CREDA.

16) Contractor shall provide 05 years' warranty in supplied solar Inverter/PCU from the date of supply as per the terms & conditions prescribed in the Bid No. 79770/CREDA/HOR/RE-V/HSM SOLAR PCU /2021-22 Dated: 30.07.2021

17) DECLARATION OF CONFLICT OF INTEREST -

- A.** The bidder shall not be permitted to Bid for the work if the section of HO CREDA (responsible for implementation of work) in which his near relative is posted. Furthermore, the successful bidder shall not be given work in the district in which his near relative is posted. The bidder shall also intimate the names of his near relatives working in the CREDA. Bidder shall also intimate the name of persons who are working with him in any capacity and who are near relatives to any employee in CREDA. Any breach of this condition by SI would render himself liable to be blacklisted for three years and removed from approved list of SI.
Note: - By the term near relatives is meant Wife, Husband, Parents and son, Brother, Sister, Brother-in-law, Father-in-law, and Mother-in-law etc.
- B.** Bidder must produce an affidavit (Annexure-III) stating the names of retired/removed employee of CREDA (if any) in his employment who retired /removed within last two years, if in case there is no such person in his employment, his affidavit should clearly state this fact. This affidavit is mandatory, if it is not produced along with the bid, the bid shall be rejected.

18) INSURANCE

- (a) The contractor shall arrange insurance coverage for the materials and Solar Inverter/PCUs at his/ for the supply under execution and successful commissioning and subsequent handover to the CREDA. The contractor shall take up insurance or such other measures for the manpower so as to cover the claim for damage arising under workmen's compensation Act and other applicable State/ Central laws. CREDA shall not bear any responsibility on this account.
- (b) Bidder shall arrange for insurance coverage for Solar Inverter/PCUs during COMC period i.e. for 05 years from the date of supply. Insurance should cover for damage and theft. In case of such incidence, bidder must replace the lost/damaged part within 7 days.
- 19)** The bidder shall abide by the terms and conditions, rules, guidelines, construction practices, safety precautions etc. stipulated in the Bid document including any correspondence between the bidder and the **CREDA** having bearing on execution of supply and payments of supply to be done under the contract.
- 20)** The Bidder shall be responsible to follow all the laws including Workmen Compensation Act and all other laws in force & shall be responsible for all the obligations towards labour including EPF, ESI, etc.
- 21)** All the taxes deductible at source as per Acts in vogue shall be recovered by **CREDA** and deposited with the appropriate authorities
- 22)** Contractor agrees to abide by any decision/instruction passed by the appropriate authority under Anti-profiteering rules notified by the state/central government under GST act.
- 23)** Any dispute arising out of the contract shall be subject to the jurisdiction of Hon'ble High Court of Chhattisgarh.

"Herewith everything and anything contained in Bid document no. . . 79770/CREDA/HOR/RE-V/HSM SOLAR PCU /2021-22Dated:30.07.2021 is part of this agreement which has been dully signed by both bidder and authorised signatory of CREDA".

In witness whereof the parties present today has hereby entered into agreement.

Signed & sealed on behalf of the above

Named contractor

Name:

Designation:

Signed on behalf of CREDA

Name: **Sanjeev Jain**

Designation: **Chief Engineer**

Witness:

1. Name:-.....

2.Name:-.....

Address:-.....

Address:-

.....

.....

3. SCHEDULE - I

PART 'A': GENERAL INFORMATION

(Strike off whichever is not applicable. Separate sheets should be used, wherever necessary)

- | | | | |
|------------|---|---|----------------------|
| 01. | Name & Address of the Bidder | : | |
| 02. | Name & Address of the firm/Company etc. | : | |
| | a) Registered office | : | |
| | b) Factory/works address | : | |
| | c) Fax Nos. | : | |
| | d) Telephone / Mobile Nos. | : | |
| | e) Email id | : | |
| 03. | Confirm whether Bidder is Manufacturer | : | Yes/No |
| 04. | Only manufacturer to give following particulars | | |
| | a) Address of factory | : | |
| | b) Year of starting manufacture | : | |
| | c) Whether same/similar materials
Manufactured earlier
(if yes, give reference) | : | |
| | d) Yearly/monthly production capacity | : | |
| | e) Maximum yearly production
Achieved so far | : | |
| 05. | Whether the firm is SSI Unit of
Chhattisgarh State: | : | Yes/No |
| | a) If yes, write registration No. | : | |
| | b) Whether documentary evidence
Regarding registration enclosed | : | |
| | c) Items for registration | : | |
| | d) Period of registration | : | |
| | d) Whether latest copy Competency/
Certificate furnished | : | Yes/No |
| 06. | Whether the firm is 100% owned by | | |
| | a) State Government | : | Yes/No |
| | b) Central Government | : | Yes/No |
| | If yes, Notification/certificate issued from
The competent authority to this effect is
Enclosed | : | Yes/No |
| 07. | a) Whether the bidder is old participant
with CREDA | : | Yes/No |
| | b) If yes, whether documentary
Evidence is enclosed. | : | Yes/No |
| 08. | Any other information that bidder may like
to give in order to highlight his bid | : | If yes, give details |

PLACE:

SIGNATURE OF BIDDER

NAME IN FULL

DATE:

DESIGNATION/STATUS

FIRM/COMPANY SEAL

4. SCHEDULE - II

PART 'B': COMMERCIAL INFORMATION

(Strike off, whichever is not applicable. Separate sheets should be used. Wherever necessary)

- 01.** (i) Earnest Money Details : RTGS/NEFT payable to "CREDA", Raipur
- (ii) Amount of E.M.D. & full details : ``
- (iii) If exempted, state whether the bidder partially / Fully Owned State/Central Govt. Unit : SSI Unit of C.G.
- (iv) Reference of documentary evidence regarding exemption enclosed. : Yes/No
- 02.** Whether the offer is valid for 6 months from the date of opening of commercial/technical bid. : Yes/No
- 03.** Rate of Sales Tax on the date of bid (exclusive in the rate quoted) :
- 04. DISCOUNT:**
- a) Whether any rebate/discount is offered. : Yes/No
- b) If yes, whether the rebate is unconditional/conditional : Yes/No
Rate/amount of rebate/discount
- c) If conditional State condition : Yes/No
- 05. PAYMENT TERMS:**
Whether CREDA's terms of payment is acceptable to Bidder : Yes/No
- 06. COMPLETION PERIOD OF WORK:**
Whether Bidder is agreeing for completion period of work as Specified in the Bid : Yes/No
- 07. PENALTY CLAUSE:**
Whether agreeable to CREDA's Penalty Clause : Yes/No
- 08.** Whether agreeable to CREDA's clause of warrantee period : : Yes/No
- 09. SECURITY DEPOSIT:**
Whether Security Deposit clause is understood : Yes/No
- 10.** Indicate State, Central Sales Tax Registration NumberState : Yes/No
Central:
(Please Note that in case of non-registration with Commercial Tax, Department Purchase Tax as admissible shall be deducted by the Purchaser from the Bills of the supplier)
- 11.** Please mention whether rates offered are applicable for part quantities. : Yes/No

PLACE:

DATE:

SIGNATURE OF BIDDER

NAME IN FULL

DESIGNATION/STATUS

FIRM/COMPANY SEAL

5. SCHEDULE - III

PART 'C': TECHNICAL INFORMATION

(Strike off whichever is not applicable. Separate sheets should be used. Wherever necessary)

01. Whether material offered is exactly as per technical specification : Yes/No
02. Whether the copies of completion certificate received during last 3 years : Yes/No
from other State Nodal Agency or from other Organization for supply
of inverters (if yes, give details) enclosed.
03. Whether pamphlets/technical details literatures along with drawing etc. : Yes/No
furnished with the offer (if yes, give details)
04. Whether the Bidder agrees to furnish material test certificates in : Yes/No
respect of chemical composition and physical properties from Govt./
Govt. approved lab with each batch of supplies.
05. Whether the Bidder has furnished details of manufacturing : Yes/No
equipments and short history of plant (if yes, give details)
06. Whether details of manufacturing process furnished with offer. : Yes/No
(If yes, give details)
07. a) Whether all testing facilities are available. : Yes/No
If so, give details and in case of non-availability of facilities indicate
approved lab available in surrounding areas where tests are proposed to be conducted.

PLACE

SIGNATURE OF BIDDER

DATE

NAME IN FULL

DESIGNATION/STATUS

FIRM/COMPANY

SEAL

6. SCHEDULE - IV

TECHNICAL DEVIATIONS

From,
Bidder Name & Address -

To,
The CE,
CREDA, HO,
Raipur

Sub – Technical Deviations.

Dear Sir,

The technical deviations & variations to the specifications stipulated in the Bid, for the item quoted are as under

S. No	Condition and deviation	Clause no of Bid document	Page no of Bid document	Statement of Variation

2. Except aforesaid deviations, the entire order, if placed, on us shall be executed in accordance with your specifications and other conditions. Variation/deviations etc. if found, elsewhere in our offer should not be given any considerations while finalizing the Bid.

PLACE

SIGNATURE OF BIDDER

DATE

NAME IN FULL

DESIGNATION/STATUS

FIRM/COMPANY SEAL

NOTE - Continuation sheet of like size & format may be used as per bidder's requirements and shall be annexed to this schedule.

7. SCHEDULE - V

PAST EXPERIENCE

From:

Bidder's Name & Address -

To,

The CE,
CREDA, HO,
Raipur

Sub – Performance/Past Experience.

Dear Sir,

We furnish herewith the record of our performance and experience as follows -

Sl.No.	Purchaser's Name & Address	Order No. Date	Ordered Quantity	Qty. supplied (Nos.)	Value of Order
--------	-------------------------------	-------------------	---------------------	-------------------------	-------------------

PLACE

SIGNATURE OF BIDDER

DATE

NAME IN FULL

DESIGNATION/STATUS

FIRM/COMPANY SEAL

NOTE - Photocopy of the completion certificate received from other State Agencies/Govt. Undertakings etc. should be enclosed.

8. ANNEXURE – II

(EXPERIENCE CERTIFICATE ON THE OFFICIAL LETTER HEAD OF CONCERNED GOVERNMENT DEPARTMENT WITH SEAL AND SIGN BY AUTHORIZED SIGNATORY)

Ref. No.....

Date.....

CERTIFICATE OF SUPPLY OF SOLAR INVERTER/PCUS

This is to certify that **Name of Bidder, Address of Registered Office** has successfully completed the supply of Nos. Solar Inverter/PCUs against various Sanction of Name of Agency at various locations in.....State, as per following details –

Nos of Solar Inverter/PCUs	Year	Total capacities of solar Inverter/PCUs	Remarks
Total -			

The workmanship and performance of the above Solar Inverter/PCUs are found satisfactory and are in successful operation.

Seal & Sign
(Authorised Signatory)
Name of Government Department

9. ANNEXURE – III

FORMAT FOR THE AFFIDAVIT

(Note: This affidavit should be on a non-judicial stamp paper of Rs. 100/- and shall be attested by Magistrate/Sub-Judge/ Notary Public)

I, (Name of the bidder authorized representative of the bidder)
son/ daughter of..... resident of
..... (Full address), aforesaid solemnly affirm and state as
under:

1. I hereby certify that all the information furnished with the bid submitted in response to notice inviting bid no. 79770/HOR/RE-V/HSM Solar PCU/2021-22 DT. 30-07-2021 issued by Chhattisgarh State Renewable Energy Development Agency (CREDA) (authority inviting bids) for supply of Solar Inverter/PCUs of various capacities and configurations in the state of Chhattisgarh (name and identification of work) are true and correct.
2. I hereby certify that I have been authorized by..... (Company name) to sign on their behalf, the bid mentioned in Sr.No.1 above.*
3. Information furnished in the bidding documents is correct in all respects to the best of my knowledge and belief.
4. The near relations, as per clause 30(A) in Section - 02, in CREDA, are not in employment of the firm/company. (Note:-By the term near relatives is meant Wife, Husband, Parents and Son, Brother, Sister, Brother-in-law, Father-in-law, Mother-in-law etc.) (if working mention the name/names)
.....
.....
5. The name of near relative (if any) as per Clause 31(B) who retired/removed within the last two years. (If None, clearly State None)
.....
.....
6. No near relative is working as Financial Accountant in the CREDA. (if working mention the name)
.....
.....
7. No person is working in the company in any capacity, who are near relatives to any Officer in Chhattisgarh State Renewable Energy Development Agency (CREDA) (If working mention the name)
.....
.....

1. Our company/firm/ or otherwise is not under the clarification of ineligibility for corrupt and fraudulent practices by the Central Government, the State Government or any public undertaking, autonomous body, authority by whatever name called under the Central or the State Government as mention in clause 1(F) of tender document.
2. I hereby authorize the CREDA Officials to get all the documents verified from appropriate sources (s).

Deponent

Place:

Date:

* Not applicable if the bidder is an individual and is signing the bid on his own behalf.

Verification

I..... S/o.....do here by affirm that contents stated in Para 1 to 09 above and contents submitted in technical & financial bid are true to the best or my knowledge and believe and are based on my/our record.

Verified that this date of at (Place).....

Deponent

10. ANNEXURE – IV

Benchmark Costs of Solar Off-grid PCUs, String Inverter/PCUs and Solar Hybrid Inverter/PCUs of various capacities

S.No.	Item Description	Unit	Rate of system Excluding GST (In Rs.)
Solar Off Grid PCU(Single Phase)			
1	500W/12V	Nos	7,600/-
2	500W/24V	Nos	8,000/-
3	1KW/24V	Nos	12,075/-
4	1 KW / 48 V	Nos	16,600/-
5	2 KW /48 V	Nos	26,400/-
6	3 KW / 48 V	Nos	29,900/-
7	4 KW/ 96 V	Nos	55,000/-
8	5 KW / 96 V	Nos	69,573/-
9	6 KW / 96 V	Nos	65,000/-
10	8 KW/ 96 V	Nos	90,000/-
11	8 KW / 120 V	Nos	90,000/-
12	10 KW/ 120 V	Nos	1,20,000/-
Solar Off Grid PCU(Three Phase)			
13	10 KW/ 120 V	Nos	1,55,000/-
14	10 KW / 240 V	Nos	1,55,000/-
15	15KW / 240 V	Nos	1,85,000/-
16	20 KW / 240 V	Nos	2,00,000/-
17	25 KW / 240 V	Nos	2,20,000/-
18	30 KW/240 V	Nos	2,85,000/-
19	40 KW / 240 V	Nos	3,50,000/-
20	50 KW / 240 V	Nos	4,25,000/-
21	60 KW / 240 V	Nos	4,75,000/-
22	80 KW / 240 V	Nos	6,45,000/-
23	100 KW/ 240 V	Nos	7,95,000/-
Solar Hybrid Inverter/PCU(Single Phase)			
1	3 KW/ 48V	Nos	77,195/-
2	4 KW/ 48V	Nos	78,265/-
3	4 KW/96 V	Nos	1,09,800/-
4	5 KW/ 48V	Nos	79,030/-
5	5 KW/ 96V	Nos	1,10,952/-
6	6 KW/ 96V	Nos	1,13,076/-
7	8 KW/ 96V	Nos	1,25,858/-
8	8 KW/ 120V	Nos	1,21,556/-
9	10 KW/ 120V	Nos	1,28,824/-
10	15 KW/ 240V	Nos	1,62,591/-
11	20 KW/ 240V	Nos.	2,08,420/-
Solar Hybrid Inverter/PCU (Three Phase)			
12	10 KW/ 48V	Nos	2,22,000/-
13	10 KW/ 120V	Nos	2,27,723/-
14	15 KW/ 120V	Nos	2,93,688/-
15	15 KW/ 240V	Nos	2,71,078/-
16	20 KW/ 240V	Nos	2,79,621/-
17	25 KW/ 240V	Nos	3,14,614/-
18	30 KW/ 240V	Nos	3,37,693/-
19	40 KW/ 240V	Nos	4,08,642/-
20	50 KW/ 240V	Nos	4,75,884/-

S.No.	Item Description	Unit	Rate of system Excluding GST (In Rs.)
21	60 KW/ 240V	Nos	6,45,755/-
22	80 KW/ 240V	Nos	9,11,252/-
23	100 KW/ 240V	Nos	10,62,459/-
24	100 KW/ 360V	Nos	11,41,227/-
25	150 KW/360V	Nos	13,50,901/-
Solar String Inverter(Single Phase)			
1	01 KW	Nos	20,590/-
2	02KW	Nos	26,245/-
3	03KW	Nos	29,400/-
4	05 KW	Nos	43,900/-
Solar String Inverter(Three Phase)			
5	5 KW	Nos	77,720/-
6	6KW	Nos	74,800/-
7	8KW	Nos	91,930/-
8	10KW	Nos	83,200/-
9	12KW	Nos	95,100/-
10	15KW	Nos	1,14,260/-
11	20KW	Nos	1,34,125/-
12	30 KW	Nos	1,64,000/-
13	50 KW	Nos	2,34,000/-
14	60KW	Nos	2,49,000/-

END