

**Tender No.: CREST/RESCO/2023-24/003**

**Dated: 29.02.2024**

**BIDDING DOCUMENTS**

**FOR**

**IMPLEMENTATION OF 50 MWp**

**GRID CONNECTED ROOF TOP SOLAR**

**PV SYSTEMS FOR SALE OF SOLAR**

**POWER UNDER RESCO WITH BOT**

**MODEL AT VARIOUS RESIDENTIAL**

**HOUSES IN U.T., CHANDIGARH.**



**Chandigarh Renewable Energy and Science  
& Technology Promotion Society (CREST)**

(Under the Aegis of Department of Science & Technology & Renewable Energy, Chandigarh Administration), 4<sup>th</sup> Floor, Paryavaran Bhawan, Sector-19-B, Chandigarh. ☎ 0172-2771919/ 2703982 (crestchandigarh@gmail.com)

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## **Name of the Work:**

Implementation of 50 MWp Grid Connected Roof Top Solar PV Systems for Sale of Solar Power under RESCO Model with BOT at various Residential Houses in U.T., Chandigarh.

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# SECTION-A

**TENDER NOTICE**  
**CHANDIGARH ADMINISTRATION**  
**CHANDIGARH RENEWABLE ENERGY AND SCIENCE & TECHNOLOGY PROMOTION SOCIETY**  
**e-Tender Notice**

e- Tenders are hereby invited by Chief Executive Officer, CREST from the manufacturers of SPV module/ System Integrators having specific experience of supply, installation, testing & commissioning of **SPV Power Plants** to be uploaded on the <http://etenders.chd.nic.in> in Three Bid System.

<b>Scope of Work</b>	Implementation of 50 MWp Grid Connected Roof Top Solar PV Systems for Sale of Solar Power under RESCO with BOT Model at various Residential Houses in U.T., Chandigarh.
<b>Cost of tender documents</b>	Rs.1000/- plus 18% GST to be submitted along with EMD through Demand Draft Favoring CREST, payable at Chandigarh
<b>Earnest Money Deposit</b>	Rs.25 Lac  (Favoring CREST, To be submitted in the form of Bank Guarantee (BG)/ Demand Draft/ FDR along with the bid). Minimum validity period for BG is 12 Months period from the Bid deadline, may be extended as per request/ instruction of CREST). For detail please read Clause no. 3 on page no. 14.
<b>Time Limit</b>	5 Months from the date of placement of work order.
<b>Pre Bid Meeting</b>	_____
<b>Validity</b>	365 days
<b>Downloading of e-tender Documents</b>	Start Date 29.02.2024 At 1800 Hrs End date: 13.03.2024 upto 1700 Hrs
<b>Date of Submission of e-Tender</b>	Start Date 29.02.2024 At 1800 Hrs End date: 13.03.2024 upto 1700 Hrs.
<b>Last Date for Submission of EMD, Cost of tender document, hard copy of Eligibility Documents required for Post-Qualification including signed and stamped copy of DNIT &amp; all other necessary documents as uploaded in e-bid.</b>	After 1700 Hrs. Dated 13.03.2024  up to 1200 Hrs. Dated 14.03.2024
<b>Opening technical bid (Online)</b>	Date: 14.03.2024 at 1230 Hrs.
<b>Opening of Price-Bid.</b>	To be intimated to all the Post-Qualified bidders separately.

## CHECK LIST FOR BIDDERS FOR SUBMISSION OF TENDER

<b>Sr. No.</b>	<b><u>Documents Required</u></b>	<b><u>Submitted</u></b>
1.	Tender Document Fee	
2.	Earnest Money Deposit (EMD) as per Clause no. 3 on Page no. 14	
3.	Notarized affidavit on Indian non judicial stamp paper that bidder/ firm has never been blacklisted.	
4.	Undertaking on its letterhead that all the terms and conditions of the DNIT are acceptable to the Bidder.	
5.	Affidavit/ certificate from CA mentioning financial turnover of last three years.	
6.	Proof of execution of similar nature of work as per minimum SPV Capacity defined with copy of certificates of satisfactory completion and performance from an authority for which the work was executed including agreement amount, actual amount, date of start, date of completion.	
7.	Proof of experience of having successfully completed similar works during last seven years as per tender estimate cost criteria.	
8.	Detail of service centre after sale of service equipment with telephone facility  or  Undertaking for opening of service centre after the placement of Work Order.	
9.	Submit a signed and stamped copy of the DNIT and all other documents duly signed and stamped as uploaded while submitting e-bid in the Tender.	

**CPWD FORM NO. 8**

**CHANDIGARH ADMINISTRATION**

**CHANDIGARH RENEWABLE ENERGY AND SCIENCE & TECHNOLOGY PROMOTION  
SOCIETY**

**STATE:** UT, Chandigarh

(A) **Tender for the work of: -**

**Name of the Work:**

Implementation of 50 MWp Grid Connected Roof Top Solar PV Systems for Sale of Solar Power under RESCO with BOT Model at various Residential Houses in U.T., Chandigarh.

**DETAILS OF SITES**

<b>SR. NO.</b>	<b>SITE NAME</b>	<b>Location at site</b>	<b>CAPACITY OF SPV POWER PLANTS</b>
1	Various Residential Houses in U.T., Chandigarh.	All Sectors/Villages of U.T., Chandigarh	equal to or more than <b>5 kWp</b> , and less than or equal to <b>10 kWp</b> for each service connection number
<b>Maximum</b>			<b>50 MWp</b>

**(Chief Executive Officer)  
CREST, Chandigarh**

## TENDER

I/We have read and examined the Notice Inviting Tender, Schedule A, B, C, D, E & F, Specifications applicable, Drawings & Designs, General Rules and Directions, Conditions of Contract, Clauses of Contract, Special Conditions, Schedule of Rate and other documents and Rules referred to in the conditions of contract and all other contents in the tender document for the work.

I/We hereby tender for the execution of the work specified for the President of India within the time specified in Schedule 'F', viz. Schedule of Quantities and in accordance in all respects with the Specifications, Designs, Drawings and instructions in writing referred to in Rule-1 of General Rules and Directions and in Clause 11 of the Conditions of Contract and with such materials as are provided for, by and in respects in accordance with, such conditions so far as applicable.

### CPWD FORM NO. 8

We agree to keep the tender open for (90) Ninety days from the date of opening of tender/ ninety days from date of opening of financial bid and not to make any modifications in its terms and conditions.

A sum of **Rs.25 Lacs** is hereby forwarded has been deposited through BG (Bank Guarantee) / FDR (Fixed Deposit Receipt) / Demand Draft of a Scheduled Bank as earnest money. If I/we fail to furnish the prescribed Performance Guarantee within prescribed period, I/we agree that the said President of India or his successor in office shall without prejudice to any other right or remedy be at liberty to forfeit the said Earnest Money absolutely. Further, if I/we fail to commence the work as specified. I/we agree that President of India or his successors in office shall, without prejudice to any other right or remedy available in law, be at liberty to forfeit the said earnest money and the Performance Guarantee absolutely, otherwise the said earnest money shall be retained by him towards security deposit to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to therein and to carry out such deviations as may be ordered, upto maximum of the percentage mentioned in Schedule 'F' and those in excess of that limit at the rates to be determined in accordance with the provision contained in Clause 12.2, 12.3 and 12.5 of the tender form. Further, I/We agree that in case of forfeiture of earnest money or both Earnest Money & Performance guarantee as aforesaid, I/We shall be debarred for participation in the re-tendering process of the work.

I/We hereby declare that I/we shall treat the tender documents, drawings and other records connected with the work as Secret / Confidential documents and shall not communicate information / derived there from to any person other than a person to whom I/we am/are may authorized to communicate the same or use the information in any manner prejudicial to the safety of the State.

Dated .....

Signature of Contractor

Witness: - .....

Postal Address: - .....

Address: - .....

Occupation: - .....

**Telephone No.**

Fax:-

E-Mail:-

## SCHEDULE 'F':-

### Reference to General Conditions of Contract

#### Name of the Work:

Implementation of 50 MWp Grid Connected Roof Top Solar PV Systems for Sale of Solar Power under RESCO with BOT Model at various Residential Houses in U.T., Chandigarh.

- |       |  |   |
|-------|--|---|
| 1.1   | Earnest Money: -   | <b><u>Rs. 25 Lac</u></b>  |
| 1.2   | Performance Guarantee  | <b><u>Rs. 1000/- per kWp</u></b>                                |
| 1.3   | Security Deposit   | -----   |
| 1.4   | Time Allowed   | 5 months for Part A<br>BOT period for Part B                    |
| 1.5   | The following expressions shall unless the context otherwise require have the meanings hereby specifically assigned to them. |   |
| 1.5.1 | Engineer in charge   | <b>Project Manager</b><br>Or Successor thereof                  |
| 1.5.2 | Superintending Engineer  | <b>Project Director</b><br><br>Or Successor thereof             |
| 1.5.3 | Accepting Authority  | <b>Chief Executive Officer</b><br>CREST<br>Or Successor thereof |
| 1.5.4 | Delhi Schedule of Rates (DSR)  | DSR-2012 with correction/amendments                             |
| 1.5.5 | CPWD Specifications  | CPWD Specifications 2012 or any amendments thereof              |

### General Rules & Directions:-

Officer Inviting Tender: -

**Chief Executive Officer**  
**CREST**

Maximum percentage for quantity of items of work to be executed beyond which rates are to be determined in accordance with Clauses 12.2, 12.3 & 12.5

- |     |                            |  |
|-----|----------------------------|--|
| 8.1 | The order of preference: - | In the case of discrepancy between the Schedule of Quantities, the Specifications and/ or the Drawings, the following order of preference shall be observed:-<br><br>(i) Nomenclature of item as per Schedule of Quantities.<br>(ii) Special Conditions. |
|-----|----------------------------|--|



- (iii) Particular Specifications.
- (iv) CPWD Specifications.
- (v) Architectural Drawings.
- (vi) Indian Standard Specifications of B.I.S.

9 (ii) Standard CPWD Contract Form CPWD Form 8 as modified and corrected upto 28.01.2012 with amendments as per **Section-III**.

**Clause-1:-**

(i) Time allowed for submission of Performance guarantee after date of issue of letter of acceptance **nil**

(ii) Maximum allowable extension beyond the period as provided in (i) above **nil**

**Clause-2:-** I. Authority for fixing compensation **Chief Executive Officer CREST**

under clause-2.

II. Whether clause-2A shall be applicable. **No (In works with time limit More than 18 months.**

**Clause-5:-** Time allowed for execution of work. **5 months for PART A BOT period for PART B**

Authority to give fair and **Appropriate clause of CPWD Work Manual 2012. Or any amendments thereof.**

Reasonable extension of time For completion of work. Mile Stone **Refer Para (A) Table of Milestones**

**at Sheet No.VI- 15**

**Clause-6, :-** **Clause 6 applicable**

Clause applicable- (6 )

**Clause-7:-** Gross work to be done together with net payment / adjustment of advances for material collected, if any, since the last such payment for being eligible to interim payment **NIL**

**Clause-10C:-**

Component of labour expressed as percent of total value of work. **25%**

<b>Clause-10-CC:-</b> Clause 10CC to be applicable in contracts with stipulated period of completion exceeding the period.	Not applicable
<b>Clause-11:-</b> Specifications to be followed for execution of work	C.P.W.D. Specifications
<b>Clause-12:-</b>	
Clause-12(a) Accord sanction of substituted items.	Appropriate clause of CPWD Works Manual 2012 or any amendments thereof.
Clause 12(b) Accord sanction of extra items.	-do-
12.2 & 12.3 Deviation limit beyond which clause 12.2 & 12.3 shall apply for building work	30%
12.5 Deviation limit beyond which clause 12.2 & 12.3 shall apply for foundation works	100%
<b>Clause-16:-</b> Competent Authority for Deciding reduced rates.	<b>Chief Executive Officer CREST</b>

#### **SCHEDULE 'F':-**

##### **Reference to General Conditions of Contract**

##### **Name of the Work:**

Implementation of 50 MWp Grid Connected Roof Top Solar PV Systems for Sale of Solar Power under RESCO with BOT Model at various Residential Houses in U.T., Chandigarh.

1.1 Earnest Money: -	<b><u>Rs. 25 Lac</u></b>
1.2 Performance Guarantee	<b><u>Rs. 1000/- per kWp</u></b>
1.3 Security Deposit	-----
1.4 Time Allowed	5 months for Part A BOT period for Part B
1.5 The following expressions shall unless the context otherwise require have the meanings hereby specifically assigned to them.	
1.5.1 Engineer in charge	<b>Project Manager</b> Or Successor thereof
1.5.2 Superintending Engineer	<b>Project Director</b> Or Successor thereof
1.5.3 <b>Accepting Authority</b>	<b>Chief Executive Officer CREST</b>

Or Successor thereof

1.5.4 Delhi Schedule of Rates (DSR)

DSR-2012 with correction/amendments

1.5.5 CPWD Specifications

CPWD Specifications 2012 or any amendments thereof

**SECTION - B**  
**INVITATION OF BIDS**

## **TENDER TERMS AND CONDITIONS**

e-Tenders are hereby invited by Chief Executive Officer, CREST from the manufacturers of SPV module/ System Integrators having specific experience of supply, installation, testing & commissioning of **SPV Power Plants** to be uploaded on the <http://etenders.chd.nic.in> in Three Bid System.

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<b>Earnest Money Deposit</b>	Rs.25 Lac  (Favoring CREST, To be submitted in the form of Bank Guarantee (BG)/ Demand Draft/ FDR along with the bid). Minimum validity period for BG is 12 Months period from the Bid deadline, may be extended as per request/ instruction of CREST). For detail please read Clause no. 3 on page no. 14.
<b>Time Limit</b>	5 Months from the date of placement of work order.
<b>Pre Bid Meeting</b>	_____
<b>Validity</b>	365 days
<b>Downloading of e-tender Documents</b>	Start Date 29.02.2024 At 1800 Hrs End date: 13.03.2024 upto 1700 Hrs
<b>Date of Submission of e-Tender</b>	Start Date 29.02.2024 At 1800 Hrs End date: 13.03.2024 upto 1700 Hrs.
<b>Last Date for Submission of EMD, Cost of tender document, hard copy of Eligibility Documents required for Post-Qualification including signed and stamped copy of DNIT &amp; all other necessary documents as uploaded in e-bid.</b>	After 1700 Hrs. Dated 13.03.2024  up to 1200 Hrs. Dated 14.03.2024
<b>Opening technical bid (Online)</b>	Date: 14.03.2024 at 1230 Hrs.
<b>Opening of Price-Bid.</b>	To be intimated to all the Post-Qualified bidders separately.

1. The DNIT with detailed terms and conditions can be downloaded/Uploaded by the bidders from the website of Chandigarh Administration at <https://etenders.chd.nic.in>.
2. The tender document should be uploaded.
  - i) **Bid -1** : Shall contain Earnest Money along with cost of DNIT to be submitted in physical form upto 1200Hrs on 14.03.2024
  - ii) **Bid- 2** : Shall contain post qualification documents such as Annual Financial turnover and completion certificate of work & Technical Specifications
  - iii) **Bid -3** : The bidder will quote no. of days for the BOT and shall be uploaded separately.
3. The earnest money should be in the shape of Bank Guarantee (as per prescribed format and valid for min. 12 Months) / FDR (Fixed Deposit Receipt) / Demand Draft of any scheduled bank payable at Chandigarh in favour of the Chief Executive Officer, CREST, Chandigarh.

**The Earnest Money Deposit ( EMD) shall be exempted to Micro Small and Medium Enterprises (MSME). Further , the Micro Small and Medium Enterprises (MSME) have to sign “ Bid Security Declaration “ accepting that if they withdraw their bids during the period of validity etc., the firm will be blacklisted for minimum two years .**

4. **The Bid -1** shall be opened on 14.03.2024 at 1230 Hrs. and the firm should upload the tender document upto 1700 Hrs. on 13.03.2024.
5. **The Bid -2** shall be opened only of Bidders whose earnest money found to be in order.
6. **The Bid -3** shall be opened of those contractors who will be found technical qualified for that item of the **work**. The date of opening Envelope 3 shall be intimated on line after approval of technical bid from the competent authority.
7. Bid document can be downloaded from the website of Chandigarh Administration Chandigarh <https://etenders.chd.nic.in>. However, for general information, guidance and reference, the Bid Document can also be viewed & downloaded on website mentioned above.
8. The Bidders should upload in Electronic Format on the website scanned copies of eligibility documents shall also be uploaded along within the prescribed time limit.
9. The firm should submit a signed and stamped copy of the DNIT and all other documents duly signed and stamped as uploaded while submitting e-bid in the office of CREST, Paryavaran Bhawan, Sec-19, Chandigarh along with the physical submission of EMD after 1700 hrs on 13.03.2024 and by 1200 hrs on 14.03.2024. The Agency has to produce the original documents as and when asked for by Chief Executive Officer, CREST, and Chandigarh. The failure of the Agency to furnish the said original documents will entail summarily rejection of its tender.
10. Meeting for scrutiny of technical bid and eligibility criteria shall be held as mentioned against the works in the office of Chief Executive Officer, CREST, Chandigarh.
11. The acceptance of a tender will rest with the Competent Authority who does not bind himself to accept the lowest tender and reserves to himself the authority to reject any or all the above

conditions, tenders without assigning any reason thereof. All tenders in which the above conditions are not fulfilled will be rejected. The Competent Authority further reserves to himself to right to accept the tender in part i.e. for only quantity and reject it for the rest.

12. **Certificate of financial turnover:** At the time of submission of bid contractor may upload Affidavit/Certificate from CA mentioning Financial Turnover of last (three) years or for the period as specified in the bid document and further details if required may be asked from the contractor after opening of technical bids. **There is no need to upload entire voluminous balance sheet.**
13. The Chief Executive Officer, reserves to himself the right of issuing his own material at the rates specified in the Annexure to this notice.
14. Conditional tenders are liable to be rejected.
15. Incomplete tenders shall liable to be rejected.
16. **The contractor shall be required to sign the Contract agreement as per prescribed Performa of CREST within 15 days from the date of issuance of work order/LOI.** Failure on his part to do so may result in invalidation of the contract and forfeiture of the earnest money/ performance Bank Guarantee/FDR.
17. Contractor submitting applications after the opening of the tenders offering lower BOT will be black listed for **minimum two years.**
18. The tenderer withdraws or amends his offer within a period of three months, he is liable to be blacklisted for **minimum two years.**
19. The tendering firm shall satisfy the following eligibility criteria:

- i) Average financial turnover of the tenderer or its group company/s with same Directors or Parent Company should be at least **Rs. 4.5 Cr** in last three financial years ending 31.03.2023.

The bidder shall also use the turnover of its parent company to fulfill the Financial Eligibility criteria. In-case where the bidding company has used the Financial Eligibility Criteria of its Parent Company then it needs to be ensured that no change in the Controlling Equity of the Bidding Company is done prior to 05 (Five) Years from the date of Commissioning of the sanctioned capacity except with the prior approval of CREST.

- ii) **Similar works means Supply, Installation, Testing & Commissioning of SPV Power Plant OR Installation & Commissioning (I&C) of SPV Power Plant (Ground Mounted/Roof Top/ Floating, etc.) of cumulative capacity greater than or equal to 500kWp in India and the firm should have done the work in his own name or its group company/s with same Directors or Parent Company**
- iii) The firm should have service centre in or around Chandigarh within a radius of 50 KM with qualified staff. If not having then the same has to be opened within one month of work order.
- iv) **The bidder or its group company/s with same Directors or Parent Company must have satisfactory installed & commissioned SPV Power Plant (Ground Mounted/Roof Top/ Floating, etc.) of cumulative capacity greater than or equal to 500kWp in India through any Govt. agencies/ State Nodal Agencies/ Govt. Public Sector or the similar work satisfactory installed & commissioned as empanelled party of Govt. agencies/ State Nodal Agencies/ Govt. Public Sector and commissioning certificate being**

issued by Govt. agencies/ State Nodal Agencies/ Govt. Public Sector or the similar work successfully installed & commissioned under private sector in India and commissioning / Verification certificate issued by Govt. agencies/ State Nodal Agencies/ Govt. Public Sector and the same should be working satisfactorily. Party will submit this certificate along with tender bid.

- v) **Manufacturers of Solar Cells or SPV panels with annual plant capacity of 25MWp need not to submit eligibility documents related to clause no. (ii) & (iv) mentioned above. But need to submit documents related to Factory Capacity from CA.**

**The firm will submit the following documents in respect of above criteria.**

- a) The bidder should upload affidavit/ certificate from CA mentioning financial turnover of last three years along with the technical bid. However, complete balance sheet, copy of Audited Financial statement with profit and loss account for the last three years if required may be asked from the contractor after opening of tech bid.
- b) Detail of service centre after sale of service equipment with telephone facility.
- c) Proof of execution of similar nature of work with copy of certificates of satisfactory completion and performance from an authority for whom the work was executed including agreement amount, actual amount, date of start, date of completion **but exempted for firms falling in category as mentioned on clause (v) above.**
- d) The firm should also upload an Undertaking on its letterhead that all the terms and conditions of the DNIT are acceptable to the Bidder.
- e) The bidder should submit a notarized affidavit on Indian Non judicial stamp paper of Rs.10/- that the proprietor/firm/ bidder has never been black listed by the organization.

**20.** The tender shall remain valid for 3 months from the date of opening of the price bid.

**21.** The tenderer shall quote the rate both in figure as well as in words.

**22. Instructions to Bidders regarding e-tendering process:**

- a. Tenders without digital signatures will not be accepted in the Electronic Tendering System.

No tender will be accepted in physical form and in case it has been submitted in the physical form it shall be rejected.

- b. Before submission of online Bids, Bidders must ensure that scanned copies of all the necessary documents have been uploaded with the Bid.
- c. It will be mandatory for all the Bidders to upload all the documents mentioned under 'Tender Detail', template read under '**Cover Details**'.
- d. The applicants should upload a pdf sheet indicating the description as mentioned under Cover Details and by mentioning 'Not Applicable' in the body of the document as the tender uploading process cannot be completed until and unless all the documents mentioned under the 'Cover Details' have been uploaded.
- e. Chief Executive Officer, CREST, Chandigarh will not be responsible for any delay in online submission of the Bids due to any reason whatsoever.
- f. CEO, CREST has full rights to accept or reject any or all the tenders without assigning any reason thereof.



23. For any technical issue related to Electronic Tendering Portal, bidders may contact CREST, 4<sup>th</sup> Floor, Paryavaran Bhawan, Sector-19, Chandigarh or email at [etender@chd.nic.in](mailto:etender@chd.nic.in), Phone No. 0172-2771919.
24. **No additional documents will be accepted after opening of the technical bid on due date. The sole criteria of qualification / disqualification will depend on the documents uploaded by the bidders.**
25. Any material / instrument required to complete/ successful running of the project which is not mentioned in the DNIT will be provided by the party in the quoted rates only.
26. It is mandatory to upload scanned copies of all the documents including as stipulated in the bid document. If such document is not uploaded this bid will become invalid and cost of bid document & processing fee shall not be refunded.
27. If the contractor is found ineligible after opening of bids, his bid shall become invalid and cost of bid document shall not be refunded.
30. If any discrepancy is noticed between the documents as uploaded at the time of submission of bid and hard copies as submitted physically by the contractor the bid shall become invalid and cost of bid document shall not be refunded.
31. The capacity of work can be increased or decreased in the interest of CREST without assigning any reason thereof.
32. The validity of this empanelment is for Twelve months from date of opening of Financial Bid which can further be extended upto the discretion of CEO, CREST.
33. Any agency getting empanelled with CREST will not have the right to refuse for installation of SPV Power Plants in Chandigarh at the approved Bid value. If, any agency refuses to install SPV Power Plants in Chandigarh at his approved value and complaint is received in the office, CREST shall have the right to take necessary action against the firm for forfeiture of performance bank guarantee including blacklisting for 2 years.
34. Additional capacity shall be allocated (by CREST) only after reviewing progress of initially allocated capacity. The bidder will have to provide evidence of completing/executing 75% of allocated capacities to CREST, in order to receive additional capacities.
36. CEO, CREST reserves the right for diversion of capacity from one bidder to another and from one category to another, based on progress of individual bidders for 100% utilization of capacity.
37. In case CREST receives less applications than the bid capacity from beneficiaries, in that case, RESCO bidders are free to identify interested consumers on their own, after matching L1 bid.
38. In case of unutilized capacity (after allocation of work) from tender capacity, the remaining bid capacity can be further allocated to L1 matched bidders, based on their progress and at the sole discretion of CEO CREST from time to time.
39. **SIZE OF THE PROJECTS:** The size of each project shall be in the range from 5 kWp to 10 kWp. However, bidders will be allocated aggregated capacities by CREST. **MNRE subsidy shall be provided as per Clause 40** below.
40. The Capacity to the Bidders will be allocated as following:
  - L-1 Bidder = 30% work to be allocated

- L-2 Bidder = 20% work to be allocated
- L-3 Bidder = 20% work to be allocated
- L-4 Bidder = 15% work to be allocated
- L-5 Bidder = 15% work to be allocated

**Work allocation will be done on L1 rates only. All the shortlisted bidders have to match L-1 Bid and work on L-1 Bid only. The bidder ranging from L-2 to L-5 will first give the chance to match the L-1, in case any bidder does not want to work on L-1, then chance will be given to L-6 bidder and so on.**

**Note:**

**The work allotment ratio/capacity (clause no. 40 on page no. 17) will be increased or decreased after observing the performance of the shortlisted parties in the sole discretion of CEO, CREST. In case the qualified bidders are less than 5 than the amount of work will be allocated among the actual nos. of shortlisted bidders available and allocation percentage vary accordingly.**

- 41. CFA will be released to RESCO Company as per PM SuryaGhar : Muft Bijli Yojana OR as per MNRE (GoI) OR as per amendment issued from time to time.**

In case of any additional subsidy on Rooftop Solar provided by the Chandigarh Administration, the same will also release to the RESCO company.

**The bidders are also free to use imported Solar Modules but the benefit of CFA will not be given to them .The CFA will only be released to the shortlisted bidders if the Solar Photovoltaic modules will be domestic manufactured using domestic manufactured Solar cells (Domestic Content Requirement) as per approved list of Models and Manufactures i.e ALMM list of MNRE (GOI) updated from time to time.**

42. One project under one consumer account number (CA No. of DISCOM) or Service connection number may however comprise of several rooftop units and each roof top unit can separately connect with the grid and may have separate solar meters.
- 42. Further, Successful bidders to whom letter of allocation will be issued will be allowed to submit the proposal for approval and issuance of sanction letter for subsidy by CREST. For the proposals received in this month, the subsidy for the same will be release to the bidders most probably by 15<sup>th</sup> of next month “OR” as and when received from MNRE (GoI).**
- 43. The Consumer will be charged @ APPC cost for F.Y. 2023-24 i.e. ₹ 3.29 Per kWh fix for BOT period out of which ₹ 0.07 per kWh will be kept by Discom/Chandigarh Electricity Department as facilitation charges and balance amount of ₹ 3.22 per kWh will be transferred to the RESCO Company on Monthly/Bi-Monthly basis.**

**Note:**

- APPC of the current F.Y. or as applicable during signing of Quadripartite Agreement shall be valid.
- In case of any changes in the Guidelines issued by Govt. of India for RESCO Model, this tender/DNIT will be liable to be modified or rejected as decided by the Competent Authority.

**(Chief Executive Officer)  
CREST, Chandigarh**

**SECTION-C**  
**SPECIAL CONDITIONS**

# SPECIAL CONDITIONS

## 1. Definitions:

1.1. "Act" means the Electricity Act, 2003 (36 of 2003) and subsequent amendments thereof.

1.2. "Applicable Rules and Regulations" shall have the same meaning as defined in Article 2 of this document.

1.3. "APPC or Average Pooled Cost of Power Purchase of UT" shall mean the weighted average price at which the distribution licensee has purchased power including cost of self-generation, if any, in the previous financial year from all the energy suppliers, excluding short term power purchases and those based on renewable energy."

1.4. "Authority" shall mean the Central Electricity Authority as referred to in sub-section (1) of Section 70 of the Act.

1.5. "Billing cycle" shall mean the period for which regular electricity bills as specified by the Commission, are prepared for different categories of consumers by the Distribution Licensee.

1.6. "Commissioning Date" shall mean the date on which the Grid Connected Rooftop Solar Power Plant is synchronised and starts injecting the Solar Power to the Grid.

1.7. "Commission" or "JERC" shall mean the Joint Electricity Regulatory Commission for the State of Goa and Union Territories of Andaman and Nicobar Islands, Chandigarh, Dadra and Nagar Haveli, Daman and Diu, Puducherry and Lakshadweep referred to in sub- Section (1) of section 82 of the Act and constituted under the Act.

1.8. "Consumer" means any person who is supplied with electricity for his own use by a licensee or the Government or by any other person engaged in the business of supplying electricity to the public under this Act or any other law for the time being in force and includes any person whose premises are for the time being connected for the purpose of receiving electricity with the works of a licensee, the Government or such other person, as the case may be;

1.9 "Agreement" inter alia means the Quadripartite agreement between SPG, the Consumer, Distribution Licensee and CREST under the Renewable Energy Services Company (RESCO) Built Operate Transfer (BOT) model.

1.10. "Distribution Licensee" or "Licensee" shall mean a person who is granted a license under Section 14 (b) of the Act. A licensed Supplier of Electricity is also covered under this definition.

1.11. "Effective Date" shall mean the date when Solar Power plant starts injecting power to the Grid.

1.12. "Electricity Supply Code" shall mean the Electricity Supply Code specified under Section 50 of the Act and subsequent amendments thereof.

1.13. "Eligibility Criteria" shall mean a Grid Connected Rooftop Solar Power Plant (GCRT) of capacity equal to or more than 5 kWp, and less than or equal to 10 kWp on service connection number with sanctioned load greater than or equal to the proposed plant at location owned by one individual or entity or a house. A solar plant of above said capacity on elevated structure on Group housing society / Resident welfare society, based on the technologies approved by Ministry of New & Renewable Energy of Government of India is also eligible under this model.

1.14. "Energy Feed-In Check Meter" shall mean an energy meter, which shall be connected in series with the Gross Energy Meter (and in the case of CT-VT operated meters to the same core of the current transformer (CT) and voltage transformer (VT) of the Gross Energy Meter) and shall be used for accounting and billing of electricity in case of failure of the Gross Energy Meter.

1.15. "Gross Energy Meter" shall mean an energy meter that is installed to record the energy exported to the grid/Energy generated from GCRT Power Plant.

1.16. "Energy Feed-In Payment Advice" shall mean a written advice from the Distribution Licensee to the Solar Energy Generator, which includes the opening and closing readings of the Gross Energy Meter (Solar Meter) for the Energy Feed-in Payment Cycle for which payment shall be made by Distribution Licensee to Solar Power Generator.

1.17. "Energy Feed-In Payment Cycle" shall mean a period, for which Solar Power Generator shall be paid for the Exported Energy through Solar Meter by Distribution Licensee less facilitation Charges.

1.18. "Exported Energy" shall mean the active energy (in terms of kWh) exported to the Grid by a Solar Power Generator.

1.19. "Solar Energy Tariff" shall mean APPC or Average Pooled Cost of the current/ previous Financial Year whichever is published latest by Hon'ble JERC minus Facilitation Charges ( 0.07 Rs. /kWh) for a fixed period of time, without any escalation known as BOT period.

1.20. "Grid" shall mean the low voltage electrical network, the high voltage distribution and transmission network or the high voltage backbone system of inter-connected transmission lines, sub-stations and generating plants for sale of energy or wheeling of energy as defined in the "Joint Electricity Regulatory Commission for the State of Goa and Union Territories (Grid Connected Solar Power Regulations), 2015".

1.21 "Grid Connected Rooftop Solar (GCRT) Power Plant" shall mean a grid connected solar photo voltaic energy generating system including the evacuation system upto the grid connected point set up at Consumer Premises.

1.22. "Gross Metering" shall mean an arrangement whereby a GCRT Power Plant is connected to the Consumer Premises through a Gross Energy Meter (Solar Meter) and whereby the Solar Power Generator gets paid for the total solar energy fed by it to the consumer.

1.23. "Invoice" shall mean a document prepared by the Solar Power Generator (SPG) for sending it to the Licensee giving details of energy exported to the grid of the licensee in terms of kWh for which the licensee owes a payment to the SPG.

1.24. "Installed Capacity" shall mean the summation of the name plate capacities expressed in kWp of all the units of the generating station or the capacity of the project reckoned at the output terminals of the GCRT Power Plant.

1.25. "Interconnection Point" shall mean the interface point of a GCRT Power Plant with the distribution network of the Distribution Licensees at appropriate voltage level as defined in the Applicable Rules and Regulations.

1.26. "Month" shall mean English calendar month starting with the 1st day / date of the month and ending with last day/ date of the month. A Part Month will be the applicable number of days in proportion to the total number of days in the specific month.

1.27. "Power Purchase Agreement" (PPA) shall mean an agreement for a fixed term between the SPG as the seller of the Solar Power & the Distribution Licensee as buyer of solar power.

1.28. "Premises" shall mean MNRE definition as per MNRE Letter No. 318/2/2017 Grid Connected Solar Rooftop Dated 5th Sept 2019

1.27. "Renewable Purchase Obligation" or "RPO" means the requirement specified by the State Commissions under clause (e) of sub-section (1) of Section 86 of the Act, for the obligated entity to purchase electricity from renewable energy sources.

1.28. "Solar Power Generator (SPG)" shall mean power producer who has been notified as an empaneled vendor of Chandigarh Renewable Energy Science & Technology Promotion Society (CREST), Chandigarh Administration, under the Renewable Energy Service Company (RESCO) Built Operate Transfer (BOT) Model.

1.30. "Year" or "Financial Year" shall mean a period commencing on 1st April of an English Calendar year and ending on 31st March of the subsequent calendar year.

1.31. Meter testing shall mean both Solar Energy Meter and Main Energy Meter (Bi-Directional meter) will be tested and sealed in same Meter Box by CED and SPG will bear all the testing charges including cost of Meter Box.

## **2. Applicable Rules and Regulations**

2.1 This agreement is subject to the following rules and regulations, hereinafter collectively referred to as the "Applicable Rules and Regulations" and includes any amendments thereof.

- a. Joint Electricity Regulatory Commission for the State of Goa and Union Territories (Solar PV Grid Interactive System based on Net Metering) Regulations, 2019
- b. Joint Electricity Regulatory Commission for the State of Goa and Union Territories (Grid Connected Solar Power) Regulations, 2015;
- c. Joint Electricity Regulatory Commission for the State of Goa and Union Territories Electricity Supply Code Regulation, 2018 and Standards of Performance Regulation, 2015;
- d. Central Electricity Authority (Technical Standards for Connectivity of Distributed Generation Resources) Regulations, 2013 and amendment thereof;
- e. Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006 and amendment thereof;
- f. Central Electricity Authority (Measures of Safety and Electricity Supply) Regulations, 2010 and amendment thereof;
- g. Power Quality & Protection and Controls shall conform to the standards specified in the CEA (Technical Standards for connectivity to the grid) Regulations, 2007 and CEA (Technical Standards for Connectivity of Distributed Generation Resources) Regulations, 2013, applicable to the distribution system as amended from time to time.
- h. Indian Electricity Rules, 1956.
- i. Any other provision that becomes applicable at the time of signing of the PPA as per the Regulation and amendments henceforth.

All other words and expressions used in this agreement, if not specifically defined herein above, but defined in the Act, shall have the same meaning as assigned to them in the Act. The other words and expressions used herein but not specifically defined in this agreement, regulations or the Act but defined under any other law passed by the Parliament applicable to the electricity industry in the State or Union Territory shall have the same meaning assigned to them in such law.

## **2.2 Eligibility**

- 2.2.1 The GCRT Project meets the applicable norms for being integrated into the Distribution Network,
- 2.2.2 The SPG shall be required to Install, maintain the GCRT as per provisions of this tender.
- 2.2.3 The Eligible Consumer shall be eligible to receive the ownership of the GCRT project after it is transferred, legally from the SPG, after the BOT period and shall maintain the Project in accordance to provisions of Net Metering Connection agreement as per JERC Net Metering Regulations, 2019, for the rest of the useful duration / life of the GCRT project.

## **3. Technical and Interconnection Requirements**

3.1. The SPG shall be required to obtain all information from the Eligible Consumer with regard to the Grid interconnection facilities as is reasonably necessary to enable it to design, install and operate all interconnection plant and apparatus on the its side of the Delivery Point in accordance with prudent utility practices, applicable grid code and the terms of this agreement for delivery of solar energy at the agreed Delivery Point/Interconnection point.

3.2 This SPG will be required to comply with latest technical specifications issued by the MNRE for GCRT Power Plants as well as interconnection requirements issued from time to time.

3.3. All the equipment connected to the Distribution Licensee's system must be compliant with Indian Standards (BIS) wherever available, and International Standards (IEEE/IEC) wherever Indian Standards are not available. The installation of electrical equipment must comply with the Applicable Rules and Regulations.

3.4. The SPG shall furnish the technical data of the GCRT Power Plant that may be required by the Distribution Licensee.

3.5. The GCRT Power Plant of the SPG shall be treated as a 'Must Run' power plant and shall not be subjected to 'merit order dispatch' by the Distribution Licensee.

3.6. The Distribution Licensee shall not be responsible for any damages to the GCRT Power Plant resulting from parallel operation with the Grid and that the Distribution Licensee shall not be liable to pay any such damages.

3.7 The metering arrangement and the inter-connection of the GCRT Project with the network of the Licensee shall be as per the provisions of the Net Metering Regulations



and the technical standards and norms specified by the Central Electricity Authority for connectivity of distributed generation resources and for the installation and operation of meters.

3.8 The SPG agrees to install, prior to connection of the GCRT Project to the network of the Licensee, an isolation device (both automatic and in built within inverter and external manual relays); and the Licensee shall have access to it if required for the repair and maintenance of the Distribution Network.

#### **4. Safety and Operation Requirements**

4.1. The design, installation, maintenance and operation of the GCRT Power Plant by the SPG shall be performed in a manner conducive to the safety of the GCRT Power Plant as well as the Distribution Licensee's system.

4.2. In case the grid is not ready to receive power for any reasons that are beyond the control of the SPG, the SPG shall not energize the Licensee's system. The SPG is solely responsible for any accident to human beings / animals whatsoever (fatal/ non-fatal / departmental / non-departmental) that may occur if the GCRT Power Plant energizes the Grid during the outage or is not operational.

4.3. The Distribution Licensee shall not be liable to pay any compensation to the SPG for deemed generation benefits in case the Distribution Licensee is unable to absorb the power due to reasons which are beyond control of the Distribution Licensee/ Company.

4.4. The Distribution Licensee reserves the right to disconnect the SPG's installation at any time in the event of the GCRT Power Plant damaging its Grid, meter or other equipment to prevent any accident or damage.

4.5 In view of the Distribution Licensee's obligation to maintain a safe and reliable distribution system, the SPG shall disconnect the GCRT Power Plant immediately from the distribution system upon direction from the Distribution Licensee, if it is determined by the Distribution Licensee that the GCRT Power Plant either causes damage to and / or produces adverse effects affecting Consumers or stability of the grid or assets of the Distribution Licensee and rectify the problem at his own expense prior to reconnection of its GCRT Power Plant to the Grid

4.6. The SPG shall install an isolator after the Solar Energy Meter i.e Gross Meter and the Main Energy Meter, which shall be accessible to the Distribution Licensee and will enable the GCRT Power Plant's disconnection from the Distribution Licensee's distribution system.

#### **1. Metering Mechanism (Hybrid Metering)** **Gross Energy Metering**

5.1. To measure the solar energy fed-in to the Grid by the SPG, a Gross Energy Meter (Solar Meter) with the standards and specifications as provided in the Applicable Rules and Regulations shall be installed by the SPG.

5.2. For existing service connections, the Gross Energy Meter shall be installed close to the existing Service Connection Meter i.e Bi-Directional Meter in same meter boxes.

5.3. The Distribution Licensee shall arrange to test and seal the Gross Energy Meter for which the SPG shall bear the testing charges.

5.4. The metering arrangement, meter testing, checking and calibration shall be in accordance with the Applicable Rules and Regulations.

### **Net Energy Metering**

5.5 SPG shall also procure and install a Net Meter as per the provisions of the Net Metering Regulations and the technical standards and norms specified by the Central Electricity Authority for connectivity of distributed generation resources and for the installation and operation of meters, for the benefit of accounting for the consumer.

## **6. Energy Metering Accounting and Settlement during BOT period**

The energy accounting during BOT period between the parties will be as under:

### **I. Between SPG and Distribution Licensee**

6.1. The SPG shall bear all costs pertaining to installation, testing, calibration, maintenance, renewal and repair of meters up to the SPG's side of Delivery Point of the Solar Power until the BOT period.

6.2. At the end of each Energy feed in payment cycle, the Distribution Licensee and the SPG will jointly take readings of energy exported under Gross Metering arrangement (Solar Meter). The SPG make an Invoice for the Solar Energy exported under Gross Metering arrangement for payments to be made by the licensee. The mode of payment shall be a cheque or bank transfer as mutually agreed between the SPG and Distribution Licensee

6.3. The Gross Energy Export by the SPG to the Distribution Licensee shall be accounted and paid for as under:

6.3.1. The Solar Energy Tariff agreed upon between the Distribution Licensee and the SPG under this agreement shall be as under:

- |    |                          |   |
|----|--------------------------|---|
| a. | Price per kilowatt-hour: | APPC Cost of Current/ Previous Financial Year whichever is Latest Notified by Hon'ble JERC at the time of Tendering.<br><b>(Presently ₹ 3.29 per unit for F.Y. 2023-24)</b> |
| b. | Capital Subsidy Claimed: | Yes   |
| c. | Validity:                | <BOT Period>  |

6.3.2. The Distribution Licensee will make payment to the SPG for each Energy Feed-In Payment Cycle within the stipulated time of 15 (fifteen) days from the date of the receipt of Invoice from the SPG, by direct transfer to the bank account of the SPG or by issue of a cheque.

#### 6.4. Energy Accounting in case of meter(s) becomes defective

6.4.1. The Solar Power fed to the grid for the days meter(s) are defective, shall be computed in different conditions as under:

Sl.	Condition of Meters	Period of operation of Gross Metering Facility	Energy Accounting
i	Defective		Readings of Solar Inverter will be used after verification of the data from Remote Monitoring System.
ii	Defective	More than 12 months	Active energy export readings for corresponding period of the previous year will be taken.
		Less Than 12 months	The Exported Energy for each day shall be computed as follows: $GCRT\ PPC \times 3.42\ kWh$ where "GCRT PPC" is the GCRT Power Plant Capacity in kWp.

6.4.2. Energy accounting in case of defective meter as above, shall be for a maximum period of 60 days (sixty days). If the SPG does not repair or replace the Gross Energy Meter within this period of 60 (sixty) days, the Distribution Licensee shall be entitled to stop the payments for the Exported Energy till the Gross Energy Meter has been repaired or replaced.

6.4.3. The payment released by the licensee in respect of the exported energy based on the invoice received from the SPG shall be considered as conclusive provided that the Licensee does not dispute the invoiced amount within 15 days of receipt of invoice and make payment within 15 days of the receipt of the invoice.

6.4.4. In the event of any dispute raised by the Licensee in regard to the invoice presented by SPG, the licensee within fifteen (15) days of the receipt of the invoice shall pay to the SPG an amount equivalent to 75% of the disputed amount along with a dispute notice furnishing the following:

- i. reasons for its disagreement to the disputed invoiced amount;
- ii. its estimate of what the correct amount should be.

6.4.5. The SPG can raise an objection to the dispute notice within 15 days of the receipt at its end, of the dispute notice from the licensee and furnishing reasons for its objections.

6.4.6. If subsequently, the Licensee agrees to the claim raised by SPG, the short payment shall be made by the licensee along with interest at the rate at which the late payment surcharge is leviable from the date such payment becomes due.

6.4.7. Upon receipt of the objections raised by the SPG on the invoice dispute notice by the Licensee, the authorized representative(s) of both the Parties shall meet and make best endeavors to amicably resolve such dispute within fifteen (15) days of receipt of the Objection Notice raised by the SPG in regard to above.

6.4.8. All the disputes between the parties arising out of or in connection with this agreement shall be resolved through mutual negotiation. In case of failure to resolve the dispute, either of the parties may approach the CREST and in case the matter remains unsolved then the parties can approach the commission.

6.4.9. A rebate of 2(two) % shall be allowed if the payment for energy exported is within 5 (five) working days of the invoices.

6.4.10. Late Payment Surcharge: In case the payment is delayed by the licensee beyond a period specified above a late payment surcharge of 1.25% of the invoice amount per month

## **7. Energy Metering Accounting and Settlement after BOT period**

7.1 The Energy Accounting and Settlement after BOT will only be between Consumer and Distribution Licensee as per Clause 6.10

## **8. Taxes and Duties**

8.1. Taxes and duties by the appropriate Government / Administration on sale proceeds of export energy if applicable and whenever applicable shall be allowed as pass through on actual incurred basis.

## **9. Period of Engagement and Termination of the Agreement during BOT**

9.1. The agreement shall be in force for <BOT Period> days from the Commissioning Date.

9.2. The Distribution Licensee may terminate this agreement within 30 days prior written notice if the SPG or Consumer breaches any of the terms of this agreement and does not remedy the breach within 30 days of receiving a written notice from the Distribution Licensee regarding the breach. The termination shall be in accordance to clause 9.3

9.3. The SPG shall transfer the ownership of the GCRT Power Plant to the consumer at zero cost in a time bound (No. of Days) manner and to the satisfaction of the Distribution Licensee upon termination of this agreement. The vendor will handover warrantee and guarantee certificates along with original equipment receipts of system including commissioning certificate, Utility agreements, insurance documents, PCR and DCR related documents, PR and maintenance reports.

9.4 In the event of termination/Purchase option by the consumer or termination by SPG before the BOT period, the parties shall settle compensation and ownership, after which this agreement stands automatically cancelled. The Distribution Licensee will not be involved in the settlement process.

## **10. Provisions of Termination after BOT**

10.1 The agreement shall automatically terminate after specified <BOT Period> days from the Commissioning Date. In such an event, the Licensee shall automatically transfer the consumer application to Net Metering Arrangement under the provisions of the Joint Electricity Regulatory Commission (Solar PV Grid Interactive System based on Net Metering) Regulations 2019 for continued connectivity to the Licensee's Distribution at no cost to the consumer, for the remaining useful years of the GCRT project upto 25 years.

10.2 The Net Metering Agreement may be terminated between Consumer and Distribution Licensee prematurely

- (a) By mutual consent; or
- (b) By the Eligible consumer, by giving 30 days' notice to the Licensee;
- (c) By the Licensee, by giving 30 days' notice, if the Eligible consumer breaches any terms of this Net Metering Agreement or the provisions of the Net Metering Regulations and does not remedy such breach within 30 days, or such other reasonable period as may be provided, of receiving notice of such breach, or for any other valid reason communicated by the Licensee in writing.

## **11. Access and Disconnection**

11.1 The Eligible Consumer shall provide access to the Licensee and SPG to the metering equipment and disconnecting devices of GCRT Project, both automatic and manual, by the Eligible Consumer.

11.2 If, in an emergent or outage situation, the Licensee cannot access the disconnecting devices of the GCRT Project, both automatic and manual, it may disconnect power supply to the premises.

11.3 Upon termination of Net Metering Agreement under Clause 9, the Eligible Consumer shall disconnect the GCRT Project forthwith from the Network of the Licensee.

11.4 The Eligible Consumer shall also provide Access to the roof for O&M and upkeep of the system during the BOT Period. Not providing access to the roof will lead to event of default at the end of consumer which may lead to termination of the agreement and clauses applicable as per Clause no. 21.2 of this agreement.

## **12. Liabilities**

12.1 The Parties shall indemnify each other for damages or adverse effects of either Party's negligence or misconduct during the installation of the GCRT Project, connectivity with the distribution network and operation of the system.

12.2 The Parties shall not be liable to each other for any loss of profits or revenues, business interruption losses, loss of contract or goodwill, or for indirect, consequential incidental or special damages including, but not limited to, punitive or exemplary damages, whether any of these liabilities, losses or damages arise in contract, or otherwise.

## **13. Investment towards Grid Augmentation and Interconnectivity**

13.1. Grid Augmentation Costs: The cost of any grid augmentation required after the interconnection point in the system of the Distribution Licensee shall be borne by the said Distribution Licensee. However, the SPG shall make arrangements to connect the GCRT Power Plant switchyard with the Interconnection Facilities at the Delivery Point.

13.2 The SPG setting up the GCRT Power Plant shall apply to the Distribution Licensee, on behalf of the consumer for connectivity with the distribution network system. The SPG will ensure execution of inter-connection agreement between Consumer and Distribution Licensee during the installation.

13.3. The Distribution Licensee shall within \_\_\_ days (mutually agreed) of receipt of application, inform to the consumer/SPG whether the Project can be connected to the grid without further system strengthening and take steps to allow connectivity within [•number•] days of such intimation.

13.4. If system strengthening or grid augmentation is required, the Distribution Licensee shall inform the same to the SPG within 30 days of receipt of application of

the SPG. In such a case, interconnection of the SPG to the grid shall be established within \_\_\_ days of such intimation.

13.5. The SPG shall be required to comply with the applicable Grid Code requirements and directions, as applicable.

#### **14. Plant Communication Facilities**

14.1 GCRT Power Plants shall have meter with features to record energy for 45 days data storage for injection into the grid through solar meter as provided under these Regulations. All projects with capacity 5 kWp and above shall have communication Port for exchanging real time information with the Distribution Licensee.

14.2 The SPG shall be responsible for provision of compatible equipment for uninterrupted communication with the concerned control centre and shall be responsible for successful integration with the communication system provided by Distribution Licensee for data communication. The SPG shall also be responsible for expansion /up gradation as well as operation and maintenance of communication equipment at their end.

#### **15. Insurance**

15.1. Throughout the Term of the Agreement, the SPG shall effect and maintain or cause to be effected and maintained, at its own cost and expense, Insurances against such risks, with such deductibles and with such endorsements and co-insured(s), which the Prudent Utility Practices would ordinarily merit maintenance of and as required under the Financing Agreements.

#### **16. Impact of change in law**

17.1. In case of any change in Law during the tenure of this agreement, the aggrieved Party shall be required to approach the Hon'ble JERC for seeking approval of the impact due to change in Law (if any).

#### **17. Force Majeure**

17.1. A "Force Majeure" means any event or circumstance or combination of events and circumstances as stated below that wholly or partly prevents or unavoidably delays an Affected Party (the Seller or the Procurers whose performance has been adversely affected by an event of Force Majeure) in the performance of its obligations under this Agreement, but only if and to the extent that such events or circumstances are not within the reasonable control, directly or indirectly, of the Affected Party and could not have been avoided if the Affected Party had taken reasonable care in performing its obligations:

17.1.1. An Act of God, including, but not limited to lightning, drought, fire and explosion, earthquake, volcanic eruption, landslide, flood, cyclone, typhoon, tornado, or

17.1.2. Explosion, accident or breakage of transmission facilities to deliver power from the Delivery Points to the receiving substation(s); or

17.1.3. Any act of war (whether declared or undeclared), invasion, armed conflict or act of foreign enemy, blockade, embargo, revolution, riot, insurrection, terrorist or military action making the performance of obligations as specified herein as impossible; or

17.1.4. Radioactive contamination or ionising radiation originating from a source in India or resulting from another Force Majeure Event mentioned above excluding circumstances where the source or cause of contamination or radiation is brought or has been brought into or near the GCRT Power Project by the Affected Party or those employed or engaged by the Affected Party.

17.1.5. An event of force majeure affecting the concerned State Transmission Utility (STU), as the case may be, thereby affecting the evacuation of power from the Delivery Points by the Procurers;

## 17.2. Force Majeure Exclusions

18.2.1. Force Majeure shall not include

- (i) any event or circumstance which is within the reasonable control of the Parties and
- (ii) the following conditions, except to the extent that they are consequences of an event of Force Majeure:
  - a. Non-performance resulting from normal wear and tear typically experienced in power generation materials and equipment;
  - b. Strikes at the facilities of the Affected Party;
  - c. Insufficiency of finances or funds or the agreement becoming onerous to perform; and
  - d. Non-performance caused by, or connected with, the Affected Party's:
    - i. Negligent or intentional acts, errors or omissions;
    - ii. Failure to comply with an Indian Law; or
    - iii. Breach of, or default under this Agreement.



### **17.3. Notification of Force Majeure Event**

17.3.1. The Affected Party shall give notice to the other Party of any event of Force Majeure as soon as reasonably practicable, but not later than seven (7) days after the date on which such Party knew or should reasonably have known of the commencement of the event of Force Majeure. If an event of Force Majeure results in a breakdown of communications rendering it unreasonable to give notice within the applicable time limit specified herein, then the Party claiming Force Majeure shall give such notice as soon as reasonably practicable after reinstatement of communications, but not later than one (1) day after such reinstatement.

Provided, that such a notice shall be a pre-condition to the Affected Party's entitlement to claim relief under this Agreement. Such notice shall include full particulars of the event of Force Majeure, its effects on the Party claiming relief and the remedial measures proposed. The Affected Party shall give the other Party regular (and not less than monthly) reports on the progress of those remedial measures and such other information as the other Party may reasonably request about the Force Majeure event.

17.3.2. The Affected Party shall give notice to the other Party of (i) the cessation of the relevant event of Force Majeure; and (ii) the cessation of the effects of such event of Force Majeure on the performance of its rights or obligations under this Agreement, as soon as practicable after becoming aware of each of these cessations.

### **17.4. Duty to Perform and Duty to Mitigate**

18.4.1. To the extent not prevented by a Force Majeure event pursuant to Article 19.1 the Affected Party shall continue to perform its obligations pursuant to this Agreement. The Affected Party shall use its reasonable efforts to mitigate the effect of any Force Majeure event as soon as practicable.

### **17.5. Available Relief for a Force Majeure Event**

(a) No Party shall be in breach of its obligations pursuant to this Agreement except to the extent that the performance of its obligations was prevented, hindered or delayed due to a Force Majeure Event;

(b) Every Party shall be entitled to claim relief in relation to a Force Majeure Event in regard to its obligations as specified under this Agreement;

(c) For avoidance of any doubt, neither Party's obligation to make payments of money due and payable prior to occurrence of Force Majeure events under this

Agreement, shall be suspended or excused due to the occurrence of a Force Majeure Event in respect of such Party.

(d) Provided that no payments shall be made by either Party affected by a Force Majeure Event for the period of such event on account of its inability to perform its obligations due to such Force Majeure Event;

The obligations of the Distribution Licensee under this Agreement towards the SPG shall not be affected in any manner by reason of inter-se disputes amongst the Parties.

## **18 Roles and Responsibilities of SPG**

18.1 The SPG will procure the necessary insurances and pay the insurance premium on a timely basis for GCRT PV System for the entire period of BOT.

**18.2 The SPG company will supply a minimum of 1250 units of electricity per kWp per annum** to the Consumer with an annual degradation factor of 1% per annum. In case of generation less than 1250 units of electricity per kWp per annum, a penalty per unit will be paid by the SPG to the Consumer. The penalty will be the **difference between the tariff agreed in this Agreement (between SPG and Distribution Licensee) and the highest tariff slab of the Distribution Licensee for the residential sector.**

### **Illustration:**

If in the first year RESCO generates lesser than 1100 units per, then SPG will pay a penalty amount equal to (Highest Consumer Slab tariff - APPC) X (1250 – 1100).

(APPC Cost of Current/ Previous Financial Year whichever is Latest Notified by Hon'ble JERC at the time of Tendering)

18.3 The Consumer will give access to SPG to enter its Premises for survey, installation and commissioning and O&M of the Power Plant till the date of transfer of GCRT System to the Consumer.

18.4 Water for cleaning of solar panels will be provided to SPG by the consumer.

18.5 The term will be equivalent to the BOT period. After the term, the SPG will transfer the ownership of all the assets of the GCRT Project to the Consumer with all applicable equipment warranties without any transfer price and free of cost. SPG will be responsible and ensure all the legal formalities for transfer of ownership of GCRT Project to Consumer. SPG may offer and Consumer may

avail the services of the SPG after the BOT period by executing an Annual Maintenance Contract between them.

- 18.6 The system will be legally owned by the SPG and will be operated and maintained and, as necessary, repaired by the SPG at its sole cost and expense during the BOT period. Replacement of spare parts if any shall be the responsibility of SPG during the BOT period. If any repair or maintenance costs are incurred by the SPG as a result of Consumer's breach of its obligations, such costs shall be reimbursed in full by the Consumer
- 18.7 The metering system shall be as per the requirements and guidelines of the Joint Electricity Regulatory Commission for the State of Goa and Union Territories (Solar PV Grid Interactive System based on Net Metering) Regulations, 2019 with latest amendments.
- 18.8 The SPG can make changes to the roof only for the purpose of installing the solar panels, their maintenance and efficient working after taking prior approval from Consumer in writing. Any expenses towards making any such changes as regards strengthening of the roof or additional preparation of the roof for installation of GCRT system will be borne by the SPG.

## **19 Events of Default**

All cases of events of default will be overseen by CEO, CREST. However, all parties must come together in good faith for amicable settlement and discuss as to what steps shall be taken with a view to mitigate the consequences of the relevant Events of Default within Default Conciliation Period (DCP) as defined in 20.1 and 20.2.

### **19.1 Events of Default due to SPG**

19.1.1 In case of any complaint from the consumer or CREST, the GCRT Power Plant will be made functional within 5 days by the SPG. If the complaint from the Consumer/CREST on the performance of the GCRT Power Plant is not attended for DCP of 3 months, the SPG will lose all the rights on the Power Plant and will be deemed transferred to the consumer, automatically, free of cost and comply with clause 17.1 (ii). In such an event, GCRT Power Plant operation will be rectified and made operational by the SPG. The consumer will receive all benefits of the solar power generated as per Net Metering Arrangement in accordance with provisions of Net Metering Connection agreement as per JERC Net Metering Regulations, 2019.

**19.1.2** In the event of non-payment of penalty by the SPG as mentioned in clause 18.2, within DCP of 3 months from the date of intimation of penalty by consumer/CREST, the SPG will lose all the rights on the Power Plant and the Power Plant will be deemed transferred to the beneficiary, automatically, free of cost and comply with clause 20.1 (ii).

## **19.2 Events of Default due to Consumer**

- 19.2.1 Change in ownership of consumer premises during the BOT period will be considered as event of default due to consumer. Within DCP of 3 months from the date of intimation of change in ownership, the consumer will pay termination amount as per clause 20.2 to SPG.
- 19.2.2 In the event of change in ownership of consumer premises during BOT, the consumer can transfer the asset to the new owner within DCP, provided the new consumer provides written consent to CREST acknowledging transfer of asset to his name. In the event of the above, the exiting QPA will be cancelled and new QPA will be signed with the new consumer and remaining parties for the remaining years of BOT.
- 19.2.3 In the event the consumer willfully obstructs/denies roof access, denies supply of water, make changes to the roof resulting in shading or any other activity that hampers overall Power Plant performance, resulting in lower than minimum annual generation, will be considered as event of default due to consumer. Occurrence of this event of default for more than DCP of 3 consecutive months shall lead to invoking of termination and payment by consumer to SPG as per clause 20.2

## **20 Termination of agreement due to Consumer & SPG**

### *Termination due to Mutual Consent*

The Agreement between the parties will be limited to the BOT period of \_\_\_\_ days from the date of COD, unless and until mutually terminated earlier pursuant to the provisions of this agreement.

Upon such mutual termination and in the event the SPG transfers ownership to consumer, the SPG can offer its operations and maintenance ("O&M") services to the Consumer and the Parties may enter into an O&M agreement in this regard. The terms and conditions of the O&M agreement will be negotiated in good faith between the Parties.

### *Termination due to Events of Default*

The Agreement between the parties will be limited to the BOT period from the date of COD, unless and until terminated earlier pursuant to the Events of Default provisions of this agreement.

Following the completion of DCP as defined in section 8 or such longer period as the parties may agree, CREST may invite all parties to discuss and identify steps that shall be taken with a view to mitigate the consequences of the SPG/Consumer Event of Default, having regard to all the circumstances.

However, after the expiry of the consultation period if both the parties are unable to reach to an amicable solution, the SPG/Consumer will provide termination payments to the other party as under :

### **20.1 Payment to consumer during SPG event of termination**

In the event of termination of agreement between consumer and SPG due to reasons identified as a result of Events of Default due to SPG including as defined in section 20.1, then the SPG shall pay a termination amount to the consumer, as follows:

- i) Termination payment = Net Asset Value X 50% [After COD]  
Net Asset Value = Normative Project Cost X (1 – (100%/BOT Years) X No of Remaining Years of BOT period)

Normative Project Cost = Benchmark Capex for 2021-22 notified by MNRE + Lower of (Schedule of Rates (SOR) cost, Actual cost) for any additional work done.

Net Asset Value shall be calculated for each year during BOT period after considering asset depreciation and certified by Auditor.

However, there will be no termination payment paid by SPG in the event of termination before COD.

- ii) the SPG shall promptly execute all documents necessary to
- (a) cause title to the GCRT project to pass to Consumer on the Purchase Date, free and clear of all liens and
  - (b) assign all vendor warranties for the GCRT project to Consumer.

Upon execution of the documents and payment of termination payment, this agreement shall terminate automatically, and the Consumer shall become the owner of the Power Plant. Subsequently, The consumer will receive all benefits of the solar power generated as per Net Metering Arrangement in accordance with provisions of Net Metering Connection agreement as per JERC Net Metering Regulations, 2019.

### **20.2 Payment to SPG during Consumer event of termination /Purchase Option**

In the event of termination of agreement between consumer and SPG due to reasons identified as a result of Events of Default due to consumer OR consumer expresses intent to exercise the purchase option in writing to the SPG and CREST, then:

- (i) Consumer shall pay the SPG an amount equal to,  
Termination payment = Net Asset Value

Net Asset Value = Normative Project Cost X (1 – ((100%/BOT Years) X No of Remaining Years of BOT Period)

Normative Project Cost = Benchmark Capex for 2021-22 notified by MNRE + Lower of (Schedule of Rates (SOR) cost, Actual cost) for any additional work done.

Net Asset Value shall be calculated for each year during BOT period after considering asset depreciation and certified by Auditor

- (ii) the consumer shall promptly execute all documents necessary to ensure completion of purchase/termination payment.
- (iii) In the event of purchase by the consumer and after compliance of 20.2 (ii) the SPG shall promptly execute all documents necessary to
- (a) cause title to the Power Plant to pass to Consumer on the Purchase Date, free and clear of all liens and
- (b) assign all vendor warranties for the Power Plant to Consumer.
- (iv) In the event of termination by the consumer and after compliance of 20.2(ii) the SPG shall return the Rooftop premises in the original condition existing before the start of this Project. This has to be undertaken at SPG's cost without any liability to Consumer.

All cases of termination settlement and Events Defaults will be mediated by CREST. In case of any dispute arises between the SPG and the Consumer, CEO CREST will be the sole arbitrator and his decision will be binding on both the parties.

**21** The following instructions must be carefully observed by all the tenderer. Tenders not strictly in accordance with these instructions shall be liable to be rejected.

- i) The bid shall be quoted in figure as well as in words.
- ii) Telegraphic tenders shall not be accepted.
- iii) The department reserves the right to modify the schedule of requirements, technical particulars and the specifications at any time and to place the order as a whole or in parts, and to reject any or all the tenders without assigning any reasons. The Department will not be responsible for and will not pay for expenses for losses that may be incurred by tenderer in the preparation of the tenders.

- iv) The successful tenderer shall be called upon to enter in an agreement on prescribed form. The contract would be of the nature of individual work contract and CREST is not bound to issue Form D etc which is not subject to any sales tax or furnishing of Form D.
- v) The CEO, CREST reserves the right for any omission/correction in the Notice inviting tender.
- 22 The tenderer shall acquaint with the work and working conditions at site and locality. No claim shall be entertained on this issue after the offer has been submitted.

**23 Inspection:-**

- (a) The Department/CREST may inspect the Equipments / Materials at the manufacturer's premises before dispatch of the material at its own cost. However, the contractor has to arrange facilities for inspection of equipment/ material including conducting the required tests in the manufacturing units without any extra cost.
- (b) In case of any critical equipment (PCU/Inverter) being manufactured in country other than India then the contractor has to arrange factory test report duly attested on each page by Manufacturer of the critical component.
- 24 No claim on account of fluctuation in prices due to any reason shall be considered.
- 25 The work shall be completed to the entire satisfaction of the CEO, CREST.
- 26 The firm has to strictly follow the fair wage clause.

**27 COMPLETION PERIOD:-**

The time allowed for completion/commissioning of work shall be 5 months from the written order to commence the work. However the firm will make best efforts for commissioning of project in minimum time period.

**28 COMMISSIONING:-**

The SPV Power Plants will be deemed to be commissioned after installation of Bi-directional Meter at site and after concluding the satisfactory performance of the same.

**29 RIGHT TO CHANGE/ISSUE AMENDMENT:**

The CREST reserves the right to waive off or to issue any amendments to the terms and provision of the work order/purchase order as the emergency demands.

**30 MATERIAL :**

The material to be used in the manufacture of the equipment to be supplied against contract shall be of the good quality conforming to BIS/foreign standard and carry certification/making wherever applicable. The firm/agency shall be solely responsible for the procurement of material required for the purpose.

The design shall comply with all statutory requirements, safety codes, regulating bodies, whether or not explicitly specified in this document. Any observations noticed shall immediately be brought to the notice of the department at the time of submission of tender. The firm must produce the genuity certificates from the original equipment manufacturer for major equipments including gate pass, excise and custom clearance certificates etc.

**31 PERFORMANCE GURANTEEE**

The firm shall submit the performance guarantee in the form of an irrevocable bank

guarantee bond of any scheduled bank having branch in tricity in the prescribed form given in annexure C OR FDR (Fixed Deposit receipt) for the amount of **Rs. 1000/- per kWp** valid for One Year within 15 days from date of issuance of work order/LOI. The performance Bank guarantee / FDR shall be returned after the satisfactory completion of work and submission of new bank guarantee/ FDR (**Rs. 1000/- per kWp** valid for 10 years and extended upto entire BOT period. It is the responsibility of the bidder to extend the validity of the Bank Guarantee upto the BOT period before 3 months from the expiry of bank Guarantee. The earnest money submitted at the time of bid 1(one) shall be returned after the submission of bank guarantee / FDR (valid for 1 year) equivalent or more than Rs. 25 Lac. The earnest money/ Performance Bank Guarantee/ FDR submitted at the time of bid 1(one) shall be forfeited along with blacklisting of firm for minimum **two years if the firm fails to start the work within allotted timeline.**

**32**     JURISDICTION:

All legal proceedings in connection with this contract shall be subject to the territorial of local civil courts at Chandigarh only.

**33**     The Administration reserves the right to modify/relax any of the condition while evaluating the Technical Bids. The Chief Executive Officer reserves the right to reject any or all technical bids without assigning any reason under no obligation to inform the manufacturer/agency of the reason of rejection.

**34**     DEVIATION

Deviation if any shall be considered only if pointed out by the firm in the Pre Bid meeting. No deviation will be considered with the bid.

**35**     CANCELLATION

The department reserves the right to cancel the purchase/work order as whole or in part at any time or in the event of default on the part of the tenderer.

**36**     No living accommodation for the staff of manufacturer/ agency shall be provided by the Department.

**37**     Carriage of material to site shall be the responsibility of the firm at their own cost.

**38**     The firm must mention of makes of the material to be installed

**39**     In the event of tenderer offering material/items manufactured by different manufacturers, it shall be his responsibility to fully co-ordinate the activities of each manufacturers in



such a way that the complete equipment contracted is supplied in time. No extra charges shall be payable for these services.

- 40** Any accessories/item which may not have been mentioned in the specification/ REQUIREMENT but are required for satisfactory commissioning the work shall be deemed to be included in the contract and shall be provided by the tenderer without extra charges later on.

**41** PENALTY/DAMAGES FOR DELAYS

If the firm fails to execute the work within the stipulated time period, the firm shall be liable to pay the penalty as under:

Sr. No	Description of Milestone (Physical)	Time allowed in days (from date of placement of work order)	Penalty in case of non achievement of each milestones
1.	a) Submission of Data sheet/ Drawings/ SLD/BOM and other technical details of module structure etc.  b) Getting approval from the department/CREST	10 Days  20 Days	Rs.500/- per kWp per two weeks and Max. Up to Rs. 5,000/- per kWp
2.	a) Inspection call of SPV modules, PCU's/ Inverters, Structure material and BOS. The inspection call shall be valid only when it is submitted along with signed and stamped Factory Test Report/ I-V Curve, other recognized standard test etc  b) Getting Approval from department / CREST	40 Days  50 Days	
3.	Transportation to the site	70 Days	
4.	Installation	120 Days	
5.	Testing & Commissioning of SPV power plants.	150 Days	

**The amount of penalty will be recovered from the performance Bank Guarantee submitted, if the Project is not completed within the stipulated time period. However, successful bidder should make full efforts to get the SPV Power Plant energized, testing & Commissioned within shortest duration from completion of installation work.**

- 42 Earnest money shall be forfeited in case of withdrawal/modification of an offer within the validity period as required in Notice inviting Tender/Tender, specification after opening of Financial bid.
- 43 NEGLIGENCE, DEFAULT AND RISK PURCHASE  
In case of negligence on the part of manufacturer/agency to execute the order contract with the negligence and to comply with any reasonable orders given in writing by the Purchaser, and on contravention if any provisions of the work order/contract the department may give 07days notice in writing to the manufacturer/agency to make good the failure or negligent or contravention and if the manufacturer/agency fails to comply with the notice within time considered to be reasonable by the purchaser, he will have the right to main risk purchase/work order for full or part of the quantities at the risk and cost of the supplier and or cancel the contract and claim due compensation/damages for the tenderer.
- 44 EXTENSION AND COMPLETION PERIOD  
**Any genuine delay in approval of technical details, drawing samples, issuance of amendments to purchase/work order conducting inspection and approval of inspection Test Report/Test certificates allowing dispatches etc. will Count towards extension of the delivery period by corresponding period other than admissible under force Majeure Conditions, if any, substantiated by the tenderer and duly accepted by the purchaser and CEO, CREST will be having full powers to give extension if deemed fit.**
- 45 TRAINING  
If required, the successful tenderer shall arrange the training of department's engineer at their work so as to make him familiar with the manufacturing of the assembly process of the equipment covered by this specification. The boarding and loading expenses of the Trainee(s) shall how ever to be borne by the Department.
- 46 All civil work relating to installation of Solar Power Plant shall be carried out by the tenderers without claiming any extra cost.
- 47 The firm shall have to employee qualified engineer for the supervision of the work at site. The firm must submit the qualification application along with all the information along with relevant documents as per format.
- 48 The work shall be carried out as per CPWD General Specifications and laid down in the schedule of work.
- 49 Do's and don'ts for safety shall be on the invertors, AC & DC distributions panels.
- 50 In case of any dispute arises that will be in the jurisdiction of Chandigarh and President, Executive Committee, CREST/ Secretary Science & Technology & Renewable Energy shall be the sole arbitrator for that.
- 51 In case any clause is left that will be as per CPWD manual.
- 52 **In case any specification is left that will be as per the MNRE (GOI) specification.**

**53 Action on failure to commence the work:**

If the contractor fails to commence the work within 30 days the earnest money / performance bank guarantee/ FDR will be forfeited by CEO, CREST along with Blacklisting of firm for **minimum two years**.

**54** Any other Clause which is in the Quadripartite Agreement and not mentioned in the tender document is considered as a part of the tender document.

**CLAUSE 3- When Contract can be Determined**

Subject to other provisions contained in this clause, the CEO, CREST may, without prejudice to his any other rights or remedy against the contractor in respect of any delay, inferior workmanship, any claims for damages and/or any other provisions of this contract or otherwise, and whether the date of completion has or has not elapsed, by notice in writing absolutely determine the contract in any of the following cases:

- (i) If the contractor having been given by the CEO, CREST a notice in writing to rectify, reconstruct or replace any defective work or that the work is being performed in an inefficient or otherwise improper or unworkman like manner shall omit to comply with the requirement of such notice for a period of seven days thereafter.
- (ii) If the contractor has, without reasonable cause, suspended the progress of the work or has failed to proceed with the work with due diligence so that in the opinion of the CEO, CREST (which shall be final and binding) he will be unable to secure completion of the work by the date for completion and continues to do so after a notice in writing of seven days from the CEO, CREST.
- (iii) If the contractor fails to complete the work within the stipulated date or items of work with individual date of completion, if any stipulated, on or before such date(s) of completion and does not complete them within the period specified in a notice given in writing in that behalf by the CEO, CREST.
- (iv) If the contractor persistently neglects to carry out his obligations under the contract and/ or commits default in complying with any of the terms and conditions of the contract and does not remedy it or take effective steps to remedy it within 15 days after a notice in writing is given to him in that behalf by the CEO, CREST.
- (v) If the contractor shall offer or give or agree to give to any person in Government service or to any other person on his behalf any gift or consideration of any kind as an inducement or reward for doing or forbearing to do or for having done or forborne to do any act in relation to the obtaining or execution of this or any other contract for Government.
- (vi) If the contractor shall enter into a contract with Government in connection with which commission has been paid or agreed to be paid by him or to his knowledge, unless the particulars of any such commission and the terms of payment thereof have been previously disclosed in writing to the CEO, CREST.
- (vii) If the contractor shall obtain a contract with Government as a result of wrong tendering or other non-bonafide methods of competitive tendering.
- (viii) If the contractor being an individual, or if a firm, any partner thereof shall at any time be adjudged insolvent or have a receiving order or order for administration of his estate made against him or shall take any proceedings for liquidation or composition (other than a voluntary liquidation for the purpose of amalgamation or reconstruction) under any

Insolvency Act for the time being in force or make any conveyance or assignment of his effects or composition or arrangement for the benefit of his creditors or purport so to do, or if any application be made under any Insolvency Act for the time being in force for the sequestration of his estate or if a trust deed be executed by him for benefit of his creditors.

- (ix) If the contractor assigns, transfers, sublets (engagement of labour on a piece-work basis or of labour with materials not to be incorporated in the work, shall not be deemed to be subletting) or otherwise parts with or attempts to assign, transfer, sublet or otherwise parts with the entire works or any portion thereof without the prior written approval of the CEO, CREST. When the contractor has made himself liable for action under any of the cases aforesaid, the CEO, CREST on behalf of the President of India shall have powers:
- (a) To determine the contract as aforesaid (of which termination notice in writing to the contractor under the hand of the CEO, CREST shall be conclusive evidence). Upon such determination, the Earnest Money Deposit, Security Deposit already recovered and Performance Guarantee under the contract shall be liable to be forfeited and shall be absolutely at the disposal of the Government.
- (b) After giving notice to the contractor to measure up the work of the contractor and to take such whole, or the balance or part thereof, as shall be un-executed out of his hands and to give it to another contractor to complete the work. The contractor, whose contract is determined as above, shall not be allowed to participate in the tendering process for the balance work.

In the event of above courses being adopted by the CEO, CREST, the contractor shall have no claim to compensation for any loss sustained by him by reasons of his having purchased or procured any materials or entered into any engagements or made any advances on account or with a view to the execution of the work or the performance of the contract. And in case action is taken under any of the provision aforesaid, the contractor shall not be entitled to recover or be paid any sum for any work thereof or actually performed under this contract unless and until the CEO, CREST has certified in writing the performance of such work and the value payable in respect thereof and he shall only be entitled to be paid the value so certified.

#### **CLAUSE 4 Time and Extension for Delay:**

The time allowed for execution of the Works as specified in the Work Order or the extended time in accordance with these conditions shall be the essence of the Contract. The execution of the works shall commence from such time period as mentioned in Work Order or from the date of handing over of the site whichever is later. If the Contractor commits default in commencing the execution of the work as aforesaid, CREST shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the earnest money & performance guarantee absolutely.

4.1 If the work(s) be delayed by:-

- (i) Force majeure, or  
(ii) Abnormally bad weather, or  
(iii) Serious loss or damage by fire, or  
(iv) Civil commotion, local commotion of workmen, strike or lockout, affecting any of the trades employed on the work, or  
(v) delay on the part of other contractors or tradesmen engaged by CEO, CREST executing work not forming part of the Contract, or Inter Departmental Delay in installation of Bi-directional Meters by Electricity Department. .  
(vi) Non-availability of stores, if it was the responsibility of CREST to supply or

(vii) Any other cause which, in the absolute discretion of the CEO, CREST is beyond the Contractor's control. then upon the happening of any such event causing delay, the Contractor shall immediately give notice thereof in writing to the CREST but shall nevertheless use constantly his best endeavours to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the CEO, CREST to proceed with the works.

4.2 Request for rescheduling of Mile stones and extension of time, to be eligible for consideration, shall be made by the Contractor in writing **within fourteen days** of the happening of the event causing delay on the prescribed form to the authority. The Contractor may also, if practicable, indicate in such a request the period for which extension is desired.

4.3 In any such case the authority as indicated in DNIT may give a fair and reasonable extension of time and reschedule the mile stones for completion of work. Such extension shall be communicated to the Contractor by the CREST in writing, within 3 months of the date of receipt of such request. **Non application by the contractor for extension of time shall not be a bar for giving a fair and reasonable extension by the authority as indicated in DNIT and this shall be binding on the contractor.**

#### **CLAUSE 5 Work to be Executed in Accordance with Specifications, Drawings, Orders etc:**

The contractor shall execute the whole and every part of the work in the most substantial and workmanlike manner both as regards materials and otherwise in every respect in strict accordance with the specifications.

The contractor shall comply with the provisions of the contract and with the care and diligence execute and maintain the works and provide all labour and materials, tools and plants including for measurements and supervision of all works, structural plans and other things of temporary or permanent nature required for such execution and maintenance in so far as the necessity for providing these, is specified or is reasonably inferred from the contract. The Contractor shall take full responsibility for adequacy, suitability and safety of all the works and methods of construction.

#### **CLAUSE 6 Foreclosure of Contract due to Abandonment or Reduction in Scope of Work–**

If at any time after acceptance of the tender, CREST shall decide to abandon or reduce the scope of the works for any reason whatsoever and hence not require the whole or any part of the works to be carried out, the CEO, CREST shall give notice in writing to that effect to the contractor and the contractor shall act accordingly in the matter. The contractor shall have no claim to any payment of compensation or otherwise whatsoever, on account of any profit or advantage which he might have derived from the execution of the works in full but which he did not derive in consequence of the foreclosure of the whole or part of the works.

#### **CLAUSE 7 Action in case work not done as per Specifications**

All works under or in course of execution or executed in pursuance of the contract, shall at all times be open and accessible to the inspection and supervision of the CEO, CREST, his authorized subordinates in charge of the work and all the superior officers, officer of the Quality Assurance Unit of the Department or any organization engaged by the Department for Quality Assurance and of the Chief Technical Examiner's Office, and the contractor shall, at all times, during the usual working hours and at all other times at which reasonable notice of the visit of such officers has been given to the contractor, either himself be present to receive orders and instructions or have a responsible agent duly accredited in writing, present for that purpose.

Orders given to the Contractor's agent shall be considered to have the same force as if they had been given to the contractor himself.

If it shall appear to the CEO, CREST or his authorized subordinates incharge of the work or his subordinate officers or the officers of the organization engaged by the Department for Quality Assurance or his subordinate officers, that any work has been executed with unsound, imperfect, or unskillful workmanship, or with materials or articles provided by him for the execution of the work which are unsound or of a quality inferior to that contracted or otherwise not in accordance with the contract, the contractor shall, on demand in writing which shall be made within twelve months of the completion of the work from the CEO, CREST specifying the work, materials or articles complained of notwithstanding that the same may have been passed, certified and paid for forthwith rectify, or remove and reconstruct the work so specified in whole or in part, as the case may require or as the case may be, remove the materials or articles so specified and provide other proper and suitable materials or articles at his own charge and cost. In the event of the failing to do so within a period specified by the CEO, CREST in his demand aforesaid, then the contractor shall be liable to pay compensation at the same rate as mentioned in the Clause for Compensation for Delay of the contract (for non-completion of the work in time) for this default.

In such case the CEO, CREST may not accept the item of work at the rates applicable under the contract but may accept such items at reduced rates may consider reasonable during the preparation of on account bills or final bill if the item is so acceptable without detriment to the safety and utility of the item and the structure or he may reject the work outright without any payment and/or get it and other connected and incidental items rectified, or removed and re-executed at the risk and cost of the contractor. Decision of the CEO, CREST to be conveyed in writing in respect of the same will be final and binding on the contractor.

#### **CLAUSE-8 WORK TO BE OPEN TO INSPECTION**

All work under in course of execution or executed in pursuance of the contract shall at all times to be open to the inspection and supervision of the CEO, CREST and his senior/subordinates and the contractor shall at all times during the usual working hours and at all other times at which reasonable notice of the intention of the CEO, CREST or his senior/subordinates to visit the works shall have been given to the contractor, either himself be present to receive orders and instructions or have a responsible agent, duly accredited in writing, present for that purpose. Orders given to a contractor's agent shall be considered to have the same forces as if they had been given to contractor himself.

#### **CLAUSE-9 WORK NOT TO BE SUBLET. ACTION IN CASE OF INSOLVENCY**

The contract shall not be assigned or sublet without the written approval of CEO, CREST. And if the contractor shall assign or sublet his contract, or attempt to do so, or become insolvent or commence any insolvency proceedings or make any composition with his creditors or attempt to do so, or if any bribe, gratuity, gift, loan, perquisite, reward or advantage pecuniary or otherwise, shall either directly or indirectly, be given, promised or offered by the contractor, or any of his servants or agent to any public officer or person in the employ of Government in any way relating to his office or employment, or if any such officer or person shall become in any way directly or indirectly interested in the contract, the CEO, CREST on behalf of the Chandigarh Administration shall have power to adopt the course specified in Clause 3 hereof in the interest of Government and in the event of such course being adopted, the consequence specified in the said clause 3 shall ensue.

## **CLAUSE 10 MINIMUM WAGES ACT TO BE COMPLIED WITH**

The contractor shall comply with all the provisions of the Minimum Wages Act, 1948, and Contract Labour (Regulation and Abolition) Act, 1970, amended from time to time and rules framed there under and other labour laws affecting contract labour that may be brought into force from time to time.

## **CLAUSE 11 SETTLEMENTS OF DISPUTES & ARBITRATION**

Except where otherwise provided in the contract, all questions and disputes relating to the meaning of the specifications, design, drawings and instructions here-in before mentioned and as to the quality of workmanship or materials used on the work or as to any other question, claim, right, matter or thing whatsoever in any way arising out of or relating to the contract, designs, drawings, specifications, estimates, instructions, orders or these conditions or otherwise concerning the works or the execution or failure to execute the same whether arising during the progress of the work or after the cancellation, termination, completion or abandonment thereof shall be dealt with as mentioned hereinafter:

(i) If the contractor considers any work demanded of him to be outside the requirements of the contract, or disputes any drawings, record or decision given in writing by the CEO, CREST on any matter in connection with or arising out of the contract or carrying out of the work, to be unacceptable, he shall promptly within 15 days request the Secretary, Science & Technology & Renewable Energy Department/President of Executive Committee, CREST, in writing for written instruction or decision. Thereupon, the Secretary, Science & Technology Department/President of Executive Committee, CREST shall give his written instructions or decision within a period of one & half month from the receipt of the contractor's letter.

If the Secretary, Science & Technology Department/President of Executive Committee, CREST fails to give his instructions or decision in writing within the aforesaid period or if the contractor is dissatisfied with the instructions or decision of the President, Executive Committee, CREST, the contractor may, within 15 days of the receipt of President, Executive Committee, CREST's decision, appeal to the Chairman, CREST who shall afford an opportunity to the contractor to be heard, if the latter so desires, and to offer evidence in support of his appeal. The Chairman, CREST shall give his decision within 45 days of receipt of contractor's appeal. If the contractor is dissatisfied with this decision, the contractor shall within a period of 45 days from receipt of the decision, give notice to the Chairman CREST, for appointment of arbitrator, failing which the said decision shall be final binding and conclusive and not referable to adjudication by the arbitrator.

(ii) Except where the decision has become final, binding and conclusive in terms of Sub Para (i) above, disputes or difference shall be referred for adjudication through arbitration by a sole arbitrator appointed by the Chairman, CREST. If the arbitrator so appointed is unable or unwilling to act or resigns his appointment or vacates his office due to any reason whatsoever, another sole arbitrator shall be appointed in the manner aforesaid. Such person shall be entitled to proceed with the reference from the stage at which it was left by his predecessor.

It is a term of this contract that the party invoking arbitration shall give a list of disputes with amounts claimed in respect of each such dispute along with the notice for appointment of arbitrator and giving reference to the rejection by the Chairman, CREST of the appeal.

It is also a term of this contract that no person, other than a person appointed by such Chairman, CREST as aforesaid, should act as arbitrator and if for any reason that is not possible, the matter shall not be referred to arbitration at all.

It is also a term of this contract that if the contractor does not make any demand for appointment of arbitrator in respect of any claims in writing as aforesaid within 120 days of receiving the intimation from the CEO, CREST that the final bill is ready for payment, the claim of the contractor shall be deemed to have been waived and absolutely barred and the CREST shall be discharged and released of all liabilities under the contract in respect of these claims.

The arbitration shall be conducted in accordance with the provisions of the Arbitration and Conciliation Act, 1996 (26 of 1996) or any statutory modifications or re-enactment thereof and the rules made there under and for the time being in force shall apply to the arbitration proceeding under this clause.

It is also a term of this contract that the arbitrator shall adjudicate on only such disputes as are referred to him by the appointing authority and give separate award against each dispute and claim referred to him and in all cases where the total amount of the claims by any party exceeds Rs.1,00,000/-, the arbitrator shall give reasons for the award.

It is also a term of the contract that if any fees are payable to the arbitrator, these shall be paid equally by both the parties. It is also a term of the contract that the arbitrator shall be deemed to have entered on the reference on the date he issues notice to both the parties calling them to submit their statement of claims and counter statement of claims. The venue of the arbitration shall be such place as may be fixed by the arbitrator in his sole discretion. The fees, if any, of the arbitrator shall, if required to be paid before the award is made and published, be paid half and half by each of the parties. The cost of the reference and of the award (including the fees, if any, of the arbitrator) shall be in the discretion of the arbitrator who may direct to any by whom and in what manner, such costs or any part thereof shall be paid or settle the amount of costs to be so paid.

#### **CLAUSE 12 DEDUCTIONS OF AUTHORITY DUES ON ANY ACCOUNT WHATSOEVER TO BE PERMISSIBLE**

Any excess payment made to the contractor inadvertently or otherwise under this contract or on any account what-so-ever and any other sum found to be due to the CREST by the Contractor in respect of this contract or any other contract or work-order on any account what-so-ever may be deducted from any sum payable by the CREST to the contractor either in respect of this contract or any work order to contract or on any other account by any other department of the Authority.

#### **CLAUSE 13 ACTION WHERE NO SPECIFICATIONS ARE SPECIFIED**

In the case of any class of work for which there is no such specifications, such work shall be carried out in accordance with the Bureau of Indian Standards/MNRE Specifications. In case there are no such specifications in Bureau of Indian Standards/MNRE, the work shall be carried out as per manufacturers' specifications, if not available then as per District Specifications. In case there are no such specifications as required above, the work shall be carried out in all respects in accordance with the instructions and requirements of the CEO, CREST.



#### **CLAUSE 14 COMPLETION CERTIFIED AND COMPLETION PLANS**

Within ten days of the completion of the work, the contractor shall give notice of such completion to the CEO, CREST and within thirty days of the receipt of such notice, the CEO, CREST shall inspect the work and if there is no defect in the work, shall furnish the contractor with a final certificate of completion, otherwise a provisional certificate of physical completion indicating defects (a) to be rectified by the contractor and/or (b) for which payment will be made at reduced rates, shall be issued. But no final certificate of completion shall be issued, nor shall the work be considered to be complete until the contractor shall have removed from the premises on which the work shall be executed all scaffolding, surplus materials, rubbish and all huts and sanitary arrangements required for his/their work people on the site in connection with the execution of the works as shall have been erected or constructed by the contractor(s) and cleaned off the dirt from all wood work, doors, windows, walls, floor or other parts of the building, in, upon, or about which the work is to be executed or of which he may have had possession for the purpose of the execution, thereof, and not until the work shall have been measured by the CEO, CREST. If the contractor shall fail to comply with the requirements of this Clause as to removal of scaffolding, surplus materials and rubbish and all huts and sanitary arrangements as aforesaid and cleaning off dirt on or before the date fixed for the completion of work, the CEO, CREST may at the expense of the contractor remove such scaffolding, surplus materials and rubbish etc., and dispose of the same as he thinks fit and clean off such dirt as aforesaid, and the contractor shall have no claim in respect of scaffolding or surplus materials as aforesaid except for any sum actually realized by the sale thereof.

#### **CLAUSE 15 NO DAMAGE TO BUILDING**

No damage in any way should be caused to the building while installation of SPV Power Plant. If any damage done it will wholly be the responsibility of the bidder and cost shall be recovered from the bidder.

#### **CLAUSE 16 CLEARANCE OF ELECTRICAL INSTALLATIONS:**

**All the electrical works shall conform to the current Indian Electricity Rules and Regulations. To get the electrical clearance from the Electrical Inspector (if required) before evacuation is the sole responsibility of the contractor. Expenditure on electrical clearance will be at the part of the contractor. The commissioning of SPV Power Plant will be considered after installation of Bi-directional Meter by Electricity Department.**

#### **CLAUSE 17 (a) STATUTORY LEVIES**

The rates as offered and accepted in this contract are inclusive of all taxes and statutory levies such as Income Tax, Octroi/Terminal Tax, Sales Tax, Turnover Tax, royalty, contribution under Employee's State-Insurance and local taxes payable under the respective statues (ESI Contribution etc.)

#### **(b) INCOME TAX**

Income Tax shall be deducted at source as per provisions of the Income Tax Act and a certificate of such deduction made in each financial year shall be furnished to the contractor by disbursing officer.

### **(c ) SALES AND OTHER TAXES**

Sales Tax, Turnover Tax, VAT, Building and other Construction Workers Welfare Cess or any other tax or cess shall also be deducted from the bills of the contractor if so directed by the authorities concerned.

### **(d) LOCAL LAWS AND LEVIES**

The contractor shall comply with the proper bye laws and legal orders of the local body or public authority under the jurisdiction of which the work is executed and pay all fees and charges for which he may be liable. Nothing extra shall be payable on this account.

### **CLAUSE 18 VARIATIONS IN PRICES**

No claim shall be entertained on accounts increase of price and labour and material due to any cause whatsoever.

### **CLAUSE 19 PERFORMANCE TEST**

The contractor shall give a satisfactory performance test of the entire installations as per standard specifications before the work is finally accepted and nothing extra whatsoever shall be payable to the contractor for this test.

### **CLAUSE 20 JURISDICTIONS**

The jurisdiction of Civil Courts for matters under dispute shall be on the basis of the location of the office of CEO, CREST.

In case any clause is left in the contract that will be as per the General Conditions of Contract for Central P.W.D Works

### **CLAUSE 21**

**If the adequate space is not available for installation of SPV Power Plant at the mentioned site for any reason, the value of the Work Order will be reduced on proportionate rate (per watt basis) and the revised Work Order will be issued to the party accordingly.**

### **CLAUSE 22**

The bidder is liable to be Blacklisted for period of minimum two years if found at fault at any of the following situations:

1. Failure to commence the work within 30 days from the date of issuance of work order/ LOI.
2. If any document such as work experience, Turnover, etc. found false/forged during Technical Evaluation.
3. Failure in doing the Operation & Maintenance for BOT period as per terms & conditions of the Quadripartite Agreement.
4. For Subletting without prior approval from CEO, CREST, complete details is given at clause no. 9, Page no. 46.

## **CLAUSE 23**

### **Cartel Formation/ Pool Rates**

If the Bidder or any of his representatives are found to be involved in Price manipulation/ cartel formation of any kind, directly or indirectly by communicating with other bidders, the EMD/BG submitted by the defaulting bidder will be forfeited and the bidder will be debarred from all future tenders of CREST.

## **CLAUSE 24**

The terms and conditions of the agreement have been explained to me/us and I/we certify that I/we clearly understand.

**Chief Executive Officer,  
CREST, Chandigarh**

# SECTION-D

## TECHNICAL SPECIFICATIONS

# Technical bid

**Due On:- 14.03.2024**

**Earnest Money:- Rs.25 Lac**

**Time Limit: - 5 months for Part-A  
BOT period for Part-B**

**Name of the Work:**

Implementation of 50 MWp Grid Connected Roof Top Solar PV Systems for Sale of Solar Power under RESCO with BOT Model at various Residential Houses in U.T., Chandigarh

1.	Location / Site Details for the SPV Power Project:-	
i)	Address of Site	various Residential Houses in U.T., Chandigarh
ii)	Roof Top	As per site available
iii)	Ambient Temp	45° c (Max) 4°C (Min)
iv)	Elevation	238 Mtr. Above mean sea level
v)	Tilt Angle	As per roof / space available
vi)	Feeding point	LT side

## 1. Solar Photovoltaic Modules

Solar PV plant array capacity should not be less than the capacity of the SPV Plant capacity and total aggregate SPV array capacity should not be less than the system size being installed at the said residence and should comprise of MONO/ POLY **DCR modules** of minimum 300 watts. **The Solar Photovoltaic modules must be domestic manufactured as per ALMM list of MNRE GOI updated from time to time and must be tested & approved by one of the IEC authorized test centers, Test Certificates can be from any of the NABL / BIS accredited testing / BIS accredited testing calibration laborites** the module type must be qualified as per IEC 61215( Second Edition). In addition PV modules must qualify to IEC 61730 Part I to II for safety qualification testing. SPV module conversion efficiency should not be less than 17.0% under STC as per MNRE latest guidelines and specification.

The module shall have warranty of 25years with degradation of power generated not exceeding 20% of the minimum rated power over the 25 years period and not more than 10% after 10 years period. The Bidder will have to furnish a CORPORATE GURANTEE on a required stamp paper for the same.

### a) **IDENTIFICATION AND TRACEBILITY**

Each PV module used in any solar power project must use a **RF Identification Tag (RFID)**, which must contain the following Information:

- i. Name of the manufacturer of PV Module
- ii. Name of the manufacturer of solar cells
- iii. Month and year of the manufacturer (separately for solar cells and modules.
- iv. Country of Origin (separately for solar cells and modules
- v. I-V Curve for the module
- vi. Peak wattage , Im , Vm and FF for the module

- vii. Unique Serial No and Model No of the Module
- viii. Date and year of obtaining IEC PV module qualification certificate.
- ix. Name of the test lab issuing IEC certificate

## 2. SPV PANEL ARRAY STRUCTURES

The supplier shall specify installation details of the PV modules and the support structures with appropriate diagrams and drawings. Such details shall include, but not limited to the following:

- Determination of true south at the site;
- Array tilt angle to the horizontal, with permitted tolerance;
- Details with drawings for fixing the modules;
- Details with drawings of fixing the junction/terminal boxes;
- Interconnection details inside the junction/terminal boxes;
- Structure installation details and drawings;
- Electrical grounding (earthling);
- Inter-panel/Inter-row distances with allowed tolerances; and
- Safety precautions to be taken.

The array structure shall support SPV modules at a given orientation to absorb and transfer the mechanical loads to the roof properly. The portion of array structure if any lying within the column shall be of GI of superior quality. All nuts and bolts shall be of very good quality stainless steel. Detailed design and Drawing of the module mounting structures shall have to be submitted to CREST for acceptance before execution of work. Strict care should be taken during execution to avoid any damage to the roof surface of the buildings and to ensure no leakage should occur.

- i. Wherever required, Suitable number of PV panel structures shall be provided. Structures shall be of flat-plate design and can be with combination of square pipe, I, C and L sections as per structure design requirement.
- ii. Structural material shall be corrosion resistant and electrolytically compatible with the materials used in the module frame, its fasteners, nuts and bolts. Galvanizing should meet astm a-123 hot dipped galvanizing or equivalent which provides at least spraying thickness of 70 microns as per IS5909, if steel is used.
- iii. GI structures with adequate strength and in accordance with relevant BIS standards shall be used with proof that the design of the structure can withstand a wind speed upto 170KM per Hour. The certificate about structure capable to withstand 170KM per Hour wind speed should be provided from Chartered Structural Engineer on his letter pad with his registration no.
- iv. Structures shall be supplied complete with all members to be compatible for allowing easy installation at the rooftop site.
- v. Each structure should have angle of inclination as per the site conditions to take maximum insulation.
- vi. Each panel frame structure be so fabricated as to be fixed on the rooftop column/wall structures.

The structures shall be designed for simple mechanical and electrical installation. There shall be no requirement of welding or complex machinery at the installation site. If prior civil work or support platform is absolutely essential to install the structures, the supplier shall clearly and unambiguously communicate such requirements along with their specifications in the bid. Detailed engineering drawings and instructions for such prior civil work shall be carried out prior to the supply of Goods. All nuts and bolts shall be of very good quality stainless steel except foundation bolts which will be of MS (GI Coated).

- VII. **The entire structure should be connected to each other in a grid form alongwith anchoring of the structure with the mother slab wherever feasible so as to sustain the wind speed upto 170KM/Hr.**
- VIII. If, possible, 4 Ft. offset from boundary of rooftop from all sides should be kept while installing structure for modules.
- IX. **The vertical section and base plate of module mounting structure should be of minimum 5mm thickness.**
- X. **No damage in any way should be caused to the building rooftops while installation of SPV Power Plant. If any damage done it will wholly be the responsibility of the bidder and cost shall be recovered from the bidder.**
- XI. **Lower Edge of the structure should not be less than 500 MM or seasonal tilt angle with clearance of minimum 500 MM from the rooftop.**
- XII. **Aluminum Structure of fixed Type PV Panel for Slanted Roof or low load bearing roof, etc. will be used as per site requirement.**
- XIII. **The cost for additional structure above 1 Mtr. Height from lower edge of the SPV Modules shall be borne by the consumer at the rates notified by CREST.**

### 3. **POWER CONDITIONING UNIT (STRING INVERTERS):**

The power conditioning unit totaling should not be less than the system capacity being installed should be provided to convert DC power produced by SPV modules, in to AC power. The Individual Inverter should not be less than 5kVA. A multi function power conditioning system combining the functionality of a grid interactive solar inverter with a highly efficient conversion unit having following **Technical Specification:**

Type	: Self commuted, current regulated, high frequency IGBT based with Trench Gate Structure.
Output voltage	: Single phase, 230V AC (+12.5%,-20% V AC) (upto 5kWp systems as per site requirement) / 3 phase, 400V AC (+12.5 %, - 20 % V AC)
Frequency	: 50 Hz $\pm$ 1 Hz
Continuous rating	: Not less than system capacity individually
DC input Operating range	: 150 V to 450V nominal (upto 5kWp systems as per site requirement) / 200 V to 1000V nominal
Total Harmonic Distortion	: less than 3 %
Operating temperature Range	: 0 to 55 deg C

Housing cabinet	:	PCU to be housed in suitable cabinet with minimum IP65 standard
Inverter efficiency	:	>95 % at full load.
Power Control	:	MPPT
Power Control	:	MPPT

**The bidder shall use the original parts in case of any fault in the PCU/Inverter during the O&M period of 10 years. In case the original part/parts are not available with the manufacturer of the PCU/Inverter (Based on certificate from the manufacturer), the bidder shall use the new parts of other standard brands available in the market or will use the repaired parts but only with the prior permission of Chief Executive Officer, CREST.**

### **Other important Features/Protections required in the PCU**

- Authentic tracking of the solar arrays maximum power operation voltage (MPPT).
  - Array ground fault detection.
  - LCD and piezoelectric keypad operator interface Menu driven. In case LCD screen/display is not available then Bluetooth connectivity or other connectivity is mandatory for monitoring through mobile phones in addition to the Data Logger.
  - Automatic fault conditions reset for all parameters like voltage, frequency and/or black out.
  - MOV type surge arresters on AC and DC terminals for over voltage surge protection from any source.
  - PCU should be rated to operate at 0 to 55 deg. Centigrade above ambient temp
  - All parameters should be accessible through an industry standard communication link.
  - The PCU should go in sleep mode when there is no grid supply.
- 3.1 Since the PCU is to be used in solar photo voltaic energy system, it should have high operational efficiency. The idling current at no load must not exceed 2 percent of the full-load current.
- 3.2 A suitable Surge Protection Device separately at output (A.C. side) shall be provided for the SPV Power Plant.
- 3.3 The PCU output shall be 400V, AC, 50 Hz 3 phase.
- 3.4 The PCU shall include appropriate self protective and self diagnostic features to protect itself and the PV array from damage in the event of PCU component failure or from parameters beyond the PCU's safe operating range due to internal or external causes. The self-protective features shall not allow signals from the PCU front panel to cause the PCU to be operated in a manner which may be unsafe or damaging. Faults due to malfunctioning within the PCU, including commutation failure, shall be cleared by the PCU protective devices and not by the existing site utility grid service circuit breaker. The PCU shall go to shut down/standby mode, with its contacts open, under the following conditions before attempting an automatic restart after an appropriate time delay; in sufficient solar power output etc.
- a) Insufficient Solar Power Input.
- When the power available from the PV array is insufficient to supply the losses of the PCU, the PCU shall go to a standby/shutdown mode. The PCU control shall prevent excessive cycling during rightly shut down or extended periods of insufficient solar radiation.



The power conditioning units / inverters should be applicable IEC/ equivalent BIS standard for efficiency measurement and environmental testing as per standard code IEC 61683 and IEC 60068 2(6,21,27,30,75,78). The charge controller/ MPPT units should qualify IEC 62093 and IEC 60068 2 (6,21,27,30,75,78 ). The junction boxes/ enclosures should be minimum IP 65.

The PCU's should be tested from the MNRE approved test centers' / NABL /BIS accredited testing- calibration laboratories. In case of imported power conditioning units, these should be approved by international test houses. Party must supply and upload the test report of PCU /inverter along with the tender document.

#### **b) Utility-Grid Over or Under Frequency**

- 3.5 The PCU shall restart after an over or under frequency shutdown when the utility grid voltage has returned to the within limits for minimum of two minutes.
- 3.6 The PCU generated harmonics measures at the point of connection to the utility services when operating at the rated power shall not exceed a total harmonic current distortion of 3 percent, a single frequency current distortion of 3 percent and single frequency voltage distortion of 1 percent, when the first through the fiftieth integer harmonics of 50 Hz are considered.
- 3.7 The PCU Power factor at the point of utility service connection shall be 0.95 lagging or leading when operating at above 25 percent of the rated output, but may be less than 0.95 lagging below 25 percent of the rated output.
- 3.8 The high voltage and power circuits of the PCU shall be separated from the low-voltage and control circuits. All conductors shall be made of standard copper.
- 3.9 The PCU shall withstand a high voltage test of 2000 V rms, between either the input or the output terminals and the cabinet (chassis).
- 3.10 Full protection against accidental open circuit and reverse polarity at the input shall be provided.
- 3.11 The PCU shall not produce Electromagnetic Interference (EMI) which may cause malfunctioning of electronic and electrical instruments including communication equipment, which are located within the facility in which the PCU is housed.
- 3.12 The PCU shall have an appropriate display on the front panel to display the instantaneous AC power output and the DC voltage, current and power input. The display shall be visible from outside the PCU enclosure. Operational status of the PCU, alarms, trouble indicators and ac and the dc disconnect switch positions shall also be communicated by appropriate messages or indicator lights on the front cover of the PCU enclosure, in case LCD screen/display is not available then Bluetooth connectivity is mandatory for monitoring through mobile phones in addition to the Data Logger.

#### **3.13 Electrical safety, earthing and protection:**

- A) Internal Faults: In built protection for internal faults including excess temperature, commutation failure, overload and cooling fan failure (if fitted) is obligatory.
- B) Over Voltage Protection: Over Voltage Protection against atmospheric lightning discharge to the PV array is required. Protection is to be provided against voltage fluctuations in the grid itself and internal faults in the power conditioner, operational errors and switching transients.
- C) Earth fault supervision: An integrated earth fault device shall have to be provided to detect eventual earth fault on DC side and shall send message to the supervisory system.
- D) Cabling practice: Cable connections must be made using PVC Cu cables, as per BIS standards. All cable connections must be made using suitable terminations for effective contact. The PVC Cu cables must be run in GL trays with covers for protection.

- E) Fast acting semiconductor type current limiting fuses at the main bus-bar to protect from the grid short circuit contribution.
- 3.14 The PCU shall include an easily accessible emergency OFF button located at an appropriate position on the unit.
- 3.15 The PCU shall include ground lugs for equipment and PV array grounding. The DC circuit ground shall be a solid single point ground connection in accordance with WEC 69042.
- 3.16 All exposed surfaces of ferrous parts shall be thoroughly cleaned, primed, and painted or otherwise suitably protected to survive a nominal 30 years design life of the unit.
- 3.17 The PCU enclosure shall be weatherproof and capable of surviving *climatic changes and should keep the PCU* intact under all conditions in the room where it will be housed. *The PCU located indoor should be floor mounted.* In case of String Invertors, it will be installed as per the manufacturer design for which prior approval will be taken from the CREST. Moisture condensation and entry of rodents and insects shall be prevented in the PCU enclosure.
- 3.18 Components and circuit boards mounted inside the enclosures shall be clearly identified with appropriate permanent designations, which shall also serve to identify the items on the supplied drawings.
- 3.19 All doors, covers, panels and cable exists shall be gasketed or otherwise designed to limit the entry of dust and moisture. All doors shall be equipped with locks. All openings shall be provided with grills or screens with openings no larger than 0.95 cm.
- 3.20 The design and fabrication of the PCU the site temperature, incident sunlight and the effect of ambient temperature on component life shall be considered carefully. Similar consideration shall be given to the heat sinking and thermal for blocking diodes and similar components.

### 3.21 Factory Testing:

- A) Preparation of all controls, protective and instrumentation circuits shall be demonstrated by direct test if feasible or by simulation operation conditions for all parameters that cannot be directly tested.
- B) Operation of start up, disconnect and shutdown controls shall also be tested and demonstrated. Stable operation of the PCU and response to control signals shall also be tested and demonstrated.
- C) Factory testing shall include measurement of phase currents, efficiencies, harmonic content and power factor.
- D) A factory Test Report (FTR) shall be supplied along with the unit. The FTR shall include detailed description of all parameters tested qualified and warranted.

### 3.22 Operating Modes:

The following operating modes are to be made available:

Night or Sleep mode: Where the inverter is almost completely turned off, with just the timer and control system still in operation, losses should not exceed 2 watts per 5 kilowatt.

**In case of Grid Failure, the PCU should go in sleep mode/ turned off immediately.**

Standby mode: Where the control system continuously monitors the output of the solar generator until pre-set value is exceeded (typically 20 watts)

Operational or MPP tracking mode: The control system continuously adjust the voltage of the generator to optimize the power available. The power conditioner must automatically re-enter stand-by mode when input power reduces below the standby mode threshold. Front Panel display should provide the status of the PCU,

including AC Voltage, Current, Power output & DC Current, Voltage and Power input, pf and fault Indication (if any)

### **3.23. METERING**

“1 No of Class (I), Single phase, Uni-directional Energy Meter to be provided to measure the Energy produced by the SPV Power Plant as Solar Meter for each SPV Power Plant and 1 No. of Class (I) or better, Single Phase/3 phase, 4 wire, bi-directional Energy Meter alongwith necessary CTs, if required to be provided on LT side(415V) for each SPV Power Plant. The bi-directional Energy Meter should be able to export power through one phase while there may be import on other two phases. The energy Meter should be able to work in the above condition without any problem. The bidirectional energy meter shall be approved by UT Electricity Department. **The expenditure on testing and calibrating of Bidirectional Energy Meter / Unidirectional Energy Meter shall be borne by the bidder.**

The bidder will provide the online monitoring device for monitoring of Solar generation either by providing web enabled uni-directional solar meter for online remote monitoring of the energy generation of the plant or online monitoring device for Solar inverter for Solar energy generation monitoring. The online monitoring device should be SIM enabled and have GPRS facility through which the data will be transferred. The internet connection to each will be part of the bidder for entire period of Contract/O&M of 10years.

- **The Meter should have Advanced Metering Infrastructure (AMI) / (AMR) Facility (Smart Meter as per Chandigarh Electricity Department Specifications).**
- **The Meter should have feature to record energy for data storage for injection into the grid through Solar Energy meter.**

**Common Meter Box should be provided for both Uni-directional Meter and Bi-directional Meter as per Chandigarh Electricity Deptt. Specification.**

### **4. Array Junction Box with Surge Protection Device (SPD) & Fuses:**

There should be a separate Array Junction Box with Metal Oxide Varistors (MOV) type Surge Protection Device with fuses to be provided for each string inverter on D.C. Side.(IEC61643-1:International Standards for low voltage).

Further, on A.C. Side, the Surge Protection Device should be provided in ACDB, besides the existing SPD device in PCU.

In case, the inverter has provision of inbuilt array junction box, then the separate array junction box is not required.

### **5. COMMON AC DISTRIBUTION PANEL BOARD (ACDPB)**

- 5.1. Common AC Distribution Panel Board (DPB) shall control the AC power from inverter. AC Distribution panel (ACDP) should consist of appropriate size of MCCB/MCB with appropriate breaking capacity as incomer and suitable numbers of MCCB with

appropriate size breaking capacity outgoing switches. **The panel should be provided 3 Phase copper bus bar of suitable capacity.**

- 5.2 Common ACDPB shall have the arrangement for measuring all electrical quantities such as Voltage, Current, Frequency, of different feeder line & energy supplied to the main or different feeder. Common ACDPB shall have sheet iron enclosure of dust & vermin proof & shall have adequate cooling arrangement. The bus-bars are to be made of copper of desired size.

## 6. CABLES:-

- a) ISI marked **as per given brands** PVC insulated Copper Cond. Cable of various sizes as per load requirement for connecting all the modules / arrays to Jn. Boxes and from Jn. Boxes to inverter and inverter to ACDB.
- b) Cabling in the yard and control room: Cabling in the yard shall be carried out as per IE Rules. Cabling inside control room and array area should be in cable pipes with proper water/moisture protection sealing. All other cabling above ground should be suitably mounted on cable trays with proper covers.
- c) Wires: Only solar copper wires of appropriate size **based on load requirements** of reputed make as specified in DNIT shall have to be used on the DC side. However on A.C side of after ACDB, aluminum cables of appropriate size can be used.

PVC/XLPE insulated armoured sheathed cables required for the plant will be provided by the manufacturer. All cable schedules/ layout drawings have to be got approved from the purchaser prior to installation)

- d) Cables Ends: All connections are to be made through suitable cable/lug/terminals; crimped properly & with use of Cable Glands.
- e) Cable Marking: All cable/wires are to be marked with proper manner by good quality ferule or by other means so that the cable can be easily identified.

Cu/Al. PVC insulated armoured sheathed cables required for the plant will be provided by the manufacturer. However Cables for both D.C/A.C as per brands and specifications mentioned can be used. All cable schedules/ layout drawings have to be got approved from the purchaser prior to installation.

**The make of cables will be accepted only as specified in the DNIT. If there is any deviation required that may be brought to the notice during the pre-bid meeting after which no query would be entertained.**

## 7. LIGHTNING PROTECTION

There shall be the required number of suitable lightning arrestors installed in the array area. Lightning protection shall be provided by the use of metal oxide arrestors and suitable earthing such that induced transients find an alternate route to earth. Protection shall meet the safety rules as per Indian Electricity Act.

## **8. EARTHING PROTECTION**

Each array structure of the PV yard should be grounded/ Earthing properly as per IS:3043-1987. In addition the lighting arrester/masts should also be provided inside the array field. Provision should be kept for shorting and grounding of the PV array at the time of maintenance work. All metal casing/shielding of the plant should be thoroughly grounded in accordance with Indian electricity Act./IE Rules. Earth Resistance should be tested in presence of the representative of Department after earthing by calibrated earth tester. PCU, ACDB and Module Structure should also be earthed properly.

## **9. COMPREHENSIVE MAINTENANCE**

All the equipments (but in case of SPV Modules the guarantee period is 25years) shall be provided with comprehensive Maintenance for BOT period against unsatisfactory performance and/or break down due to defective design, workmanship of material. The equipments or components, or any part thereof, so found defective during Comprehensive Maintenance period shall be repaired or replaced free of cost to the satisfaction of the Engineer-in-charge.

## **10. MODULE CLEANING SYSTEM:**

Necessary arrangements shall be made by the successful bidder for cleaning of Modules throughout the BOT period. Water will be provided by the Consumer/House owner for cleaning of SPV Modules with no additional charge to the RESCO company.

## **11. Online Monitoring:**

The bidder will provide the online monitoring device for monitoring of solar generation either by providing web enabled uni-directional solar meter or web enabled Solar inverter or separate remote monitoring device. The online monitoring device should be SIM/Wifi enabled and have GPRS facility through which the data will be transferred. The required internet connection to the smart energy meter or the web enabled solar inverter or separate remote monitoring device will be in the scope of the bidder for the entire BOT period.

**THE MAKES OF VARIOUS ITEMS SHALL BE AS UNDER:-**

Sr no	Description	Make
1.	SPV Modules	<b>The Solar Photovoltaic cells and modules must be domestic manufactured as per ALMM list of MNRE GOI updated from time to time and must be tested &amp; approved by one of the IEC authorized test centers , Test Certificates can be from any of the NABL / BIS accredited testing / calibration laborites</b> the module type must be qualified as per IEC 61215( Second Edition). In addition PV modules must qualify to IEC 61730 Part I to II for safety qualification testing. The Photovoltaic modules must be made in India and tested & approved by one of the IEC authorized test centers, Test Certificates can be from any of the NABL / BIS accredited testing /calibration lab
2.	Power Controlling Unit (Invertors)	SunGrow/ Havells/ Invergy/ Growatt or approved by MNRE (GOI)  Minimum IP 65 standard for outdoor applications. Option of minimum three brands to be quoted by bidder.
3.	Switchgear for AC Distribution Panel	ABB/ SIEMENS / Schneider Electric/ L&T/C&S/ HENSEL as per ISI /International standards
4.	Cables	KEI/ Finolex / Havells / CCI/ Polycab/ Siechem/ Trisolar/ Bizlink/ Tyco/ Banshali and should be ISI/TUV Approved.
5.	Housing cabinets	The field array junction boxes will comply with IP65 standard. The electronics including inverters, CPU, charge controllers, MPPTs, AC & DC distribution boxes should comply IP21 for indoor and IP 65 for outdoor applications.
6.	Surge Protection Devices(Fuses,MOVs)	CITEL/ PHOENIX/ DEHN/ OBO/ SCHNEIDER ELECTRIC/ ABB/ HAGER
7.	Smart Energy Meters (Solar Meter & Main Meter)	L&T/ Secure/Genus/Avon/ any other make approved by Chandigarh Electricity Department.
11	Data Logger	Delremo/ WebDyn/ Trackso/ Logics PowerAMR/ Trinity Touch/ Intello

**SECTION -E**  
**(FINANCIAL BID)**

## Price Bid

**Name of Work:-**

Implementation of 50 MWp Grid Connected Roof Top Solar PV Systems for Sale of Solar Power under RESCO Model with BOT at various Residential Houses in U.T., Chandigarh.

**Due On: 14.03.2024**

**Earnest Money:- Rs.25 Lac**

**Time Limit: - 5 months for Part-A  
BOT period for Part-B**

S. No	Description	Unit	No. of Days for BOT period (in figures)	No. of Days for BOT period (in words)
1.	BOT Period in days	No. of Days		

(Signature of Bidder)

Place.....

status/state of capacity on

Date.....

which the signatory is signing.

- **No. Of Days quoted will be exclusive of supply, installation, testing and commissioning of SPV Power Plant but inclusive of operation & maintenance for BOT period.**
- **In case there is difference in figure and words, then the figures will be considered.**
- **The current APPC is Rs. 3.29 valid upto 31<sup>st</sup> March,2024 or as latest notified by the Hon'ble JERC from time to time based on which the work will be allocated and Quadripartite Agreement will be signed.**



# **ANNEXURES**

## **(A TO E)**

## Annexure – A

### TECHNICAL DETAIL FORM

Sr. No.	ITEM	PARTICULARS
1	<b>POWER CONDITIONING UNITS</b>	
1.1	<u>Option-1</u> Make: Model No.: Rated Capacity: Maximum Efficiency: (if, bidder is not the manufacturer, Authorization letter from Manufacturer to be enclosed)	
1.2	<u>Option-2</u> Make: Model No.: Rated Capacity: Maximum Efficiency: (if, bidder is not the manufacturer, Authorization letter from Manufacturer to be enclosed)	
1.3	<u>Option-3</u> Make: Model No.: Rated Capacity: Maximum Efficiency: (if, bidder is not the manufacturer, Authorization letter from Manufacturer to be enclosed)	

Signature of the Bidder \_\_\_\_\_

Business Address \_\_\_\_\_

- **Note: CREST is free to select any one of Power Conditioning Unit from the above three or more brands quoted by the bidders.**



**Annexure – C**

**BG No. -----**

**Date of Issue-----**

**Date of Expiry-----**

**FORM OF PERFORMANCE GUARANTEE/BANK GUARANTEE BOND**

In consideration of the U.T Administration, Chandigarh (hereinafter called “The Government”) having offered to accept the terms and conditions of the proposed agreement between M/s.....(hereinafter called “the said contractor(s)” and **Chandigarh Renewable Energy and Science & Technology Promotion Society (CREST)** (hereinafter called “CREST”) for the work order issued vide \_\_\_\_\_ (hereinafter called “the said agreement”) having agreed to production of an irrevocable Bank Guarantee for Rs.....(Rupees .....only) as a security/guarantee from the contractor(s) for compliance of his obligations in accordance with the terms and conditions in the said agreement.

1. We.....(hereinafter referred to as the “Bank”) hereby undertake to pay to the Chandigarh Renewable Energy and Science & Technology Promotion Society (CREST) an amount not exceeding Rs..... (Rupees.....only) on demand by the CREST.
  
2. We.....do hereby undertake to pay the amounts due and payable under this Guarantee without any demur, merely on a demand from the CREST stating that the amount claimed is required to meet the recoveries due or likely to be due from the said contractor(s). Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this Guarantee. However, our liability under this Guarantee shall be restricted to an amount not exceeding Rs..... (Rupees.....only).
  
3. We, the said Bank, further undertake to pay to the CREST any money so demanded notwithstanding any dispute or disputes raised by the contractor(s) in any suit or proceeding pending before any court or Tribunal relating thereto, our liability under this present being absolute and unequivocal.

The payment so made by us under this bond shall be a valid discharge of our liability for payment there under, and the contractor(s) shall have no claim against us for making such payment.

4. We.....further agree that the Guarantee herein contained shall remain in full force and effect during the period that would be taken for the

performance of the said agreement, and it shall continue to be enforceable till all the dues of the CREST under or by virtue of the said agreement have been fully paid, and its claims satisfied or discharged, or till the CEO, CREST, on behalf of the CREST, certifies that the terms and conditions of the said agreement have been fully and properly carried out by the said contractor(s), and accordingly discharges his guarantee.

5. We.....further agree with the CREST that the CREST shall have the fullest liberty without our consent, and without effecting in any manner our obligations hereunder, to vary any of the terms and conditions of the said agreement or to extend time of performance by the said contractor(s) from time to time or to postpone for any time or from time to time any of the powers exercisable by the CREST against the said contractor(s), and to forbear or enforce any of the terms and conditions relating to the said agreement, and we shall not be relieved from our liability by reason of any such variation or extension being granted to the said contractor(s) or for any forbearance, act of omission on the part of the CREST or any indulgence by the CREST to the said contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.
  
6. This Guarantee will not be discharged due to the change in the constitution of the bank or the contractor(s).
  
7. We.....lastly undertake not to revoke this (indicate the name of the bank) Guarantee except with the previous consent of the CREST in writing.
  
8. This Guarantee shall be valid up to.....unless extended on demand by the CREST. Notwithstanding anything mentioned above, our liability against this Guarantee is restricted to Rs.....(Rupees .....only), and unless a claim in writing is lodged with us on or before \_\_\_\_\_ on the date of expiry or extended date of expiry of this Guarantee all liabilities under this Guarantee shall stand discharged.

Dated the..... day of.....For.....

**Annexure – D**

**MANUFACTURERS' AUTHORIZATION FORM**

No. \_\_\_\_\_

dated:

To

Dear Sir:

We \_\_\_\_\_ who are established and reputable manufacturers of \_\_\_\_\_ (*name & descriptions of goods offered*) having factories at \_\_\_\_\_ (*address of factory*) do hereby authorize M/s \_\_\_\_\_ (*Name and address of Agent*) to submit a bid, and sign the contract with you for the goods manufactured by us against the above IFB.

We hereby extend our full guarantee and warranty for the goods and services offered for supply by the above firm against the following site:-.

<b>SR. NO.</b>	<b>SITE NAME</b>	<b>CAPACITY OF SPV POWER PLANT</b>
1	Various Residential Houses in U.T., Chandigarh	equal to or more than <b>5 kWp</b> , and less than or equal to <b>10 kWp</b> for each service connection number

(Name)

(Name of manufacturers)

*Note: This letter of authority should be on the letterhead of the manufacturer and should be signed by a person competent and having the power of attorney to legally bind the manufacturer. It should be included by the Bidder in its bid.*

*(The list of items for which this is required should be indicated by Purchaser).*

**Annexure – E**  
**Quadripartite Agreement**  
**(Uploaded Separately)**