



**AGENCY FOR NEW & RENEWABLE ENERGY
RESEARCH AND TECHNOLOGY (ANERT)**

Department of Power, Government of Kerala
Thiruvananthapuram, Kerala – 695 033;
www.anert.gov.in , projects@anert.in

EoI DOCUMENT

***Expression of Interest (EoI) for Registration of
OEMs for supply of components for Solar
Projects implemented by ANERT***

Ref. No.: ANERT-TECH/68/2022-PE1(RTS)

PART – 1: GENERAL CONDITIONS

Date of Publishing of Bids : - 04/11/2022

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NOTICE

ANERT invites Expression of Interest in One cover system are invited from reputed Manufacturers for the ***Expression of Interest (EoI) for Registration of OEMs for supply of components for Solar Projects implemented by ANERT.*** The documents can be downloaded from the ANERT website – www.anert.gov.in.

Thiruvananthapuram

CEO

04/11/2022

ABSTRACT

Ref. No.	ANERT-TECH/68/2022-PE1(RTS)
Name of Work	Expression of Interest (EoI) for Registration of OEMs for supply of components for Solar Projects implemented by ANERT
Download of Form	http://www.anert.gov.in
Date and Time of listing	15 th of Every Month
Registration Fee	Rs. 50,000/- (18% GST extra)
Availability of EoI Documents	Website http://www.anert.gov.in
Name of Contact	Shri. Vinay P, Project Engineer +91 9400902550 projects@anert.in

Thiruvananthapuram
04/11/2022

Sd/-
CEO

GENERAL TERMS AND CONDITIONS FOR E-PROCUREMENT

This document is being published for the Expression of Interest (EoI) for Registration of OEMs for supply of components for Solar Projects implemented by ANERT. The EoI is invited in one cover system and Prospective bidders willing to participate in this EoI shall forward the documents to the email ID mentioned in this document.

1. SUBMISSION PROCESS:

The process shall consist of the following stages:

- i. Downloading of EoI document: The EoI document will be available for free download on www.anert.gov.in.
- ii. Publishing of Corrigendum: All corrigenda shall be published on www.anert.gov.in and shall not be available elsewhere.
- iii. Bid submission: Bidders have to submit their bids along with supporting documents to support their eligibility, as required in this document on through email to projects@anert.in No manual submission of bid is allowed and manual bids shall not be accepted under any circumstances.
- iv. The time taken to ascertain, evaluate and suggest a solution for the problem reported by bidder may vary from case to case. Hence bidders are advised to submit the bid **at least 2 working days before the due date** and time of bid submission to avoid any last-minute issues that may come up.
- v. Opening of Bid and Bidder short-listing: The single cover bids will be opened, evaluated and shortlisted as per the eligibility. Failure to submit the required documents online will attract disqualification. Price bids of the eligible bidder's will open the same day of opening and the work will be awarded.

2. DOCUMENTS COMPRISING BID:

3.1 Pre-Qualification cum Technical Bid

Technical proposal shall contain the scanned copies of the following documents which every bidder has to upload shall contain, Part-I (this document in PDF form)/scanned copies of:

- i. EoI document downloaded (signed with office seal)
 - ii. Summary of Bid qualification requirement (Annexure A)
 - iii. Agreement in the prescribed format (Annexure D) on Govt. of Kerala stamp paper worth Rs.200/-
 - iv. Copy of Registration Certificate of the bidder firm
 - v. Copy of GST Certificate
 - vi. Copy of PAN card of the organization/TAN
 - vii. Documents to prove the annual Turnover of the bidder along with a certificate from Chartered Accountant regarding net worth. (Capital + Reserves) *Format B*
 - viii. Details of the technical offer, including test certificates issued in the name of the bidder
 - ix. Declaration by the bidder (format as in Annexure – E)
 - x. Declaration of relationship with ANERT employee (format as in Annexure - F)
- 3.2 The department doesn't take any responsibility for any technical snag or failure that has taken place during document upload.

3. VENDOR REGISTRATION FEE

- 3.1 The Bidder shall pay, a registration fee of Rs. 50,000/-. All bidders are required to pay this amount and none are exempted from paying the same.
- 3.2 Online Payment modes: The fee can be paid in the form of DD / NEFT in the name of CEO ANERT as given below:

Account Summary		
Beneficiary Name	:	CEO, ANERT
Branch	:	SBI Pattom
Account No.	:	67250668543
IFSC	:	SBIN0070212

4. SUBMISSION PROCESS:

For submission of bids, all interested bidders to submit the requisite documents to projects@anert.in along with details of registration fee.

5. VALIDITY

- 5.1 The Registration is valid for a period of 12 months from the date of issue of the vendors list.

6. DEVIATIONS

- 6.1 The offers with Deviations in Technical Terms of the EoI Document are liable for rejection.

7. BLACK LIST

- 7.1 All the intending bidders shall agree that in the event of the documents furnished with the offer being found to be bogus or the documents contain false particulars, they shall be blacklisted for future works/ association with ANERT and EMD shall be forfeited against any losses incurred by ANERT.

8. BIDDER'S LOCATION

- 8.1 The bidders are requested to furnish the exact location of their factories/godown with detailed postal address and pin code, telephone and fax nos. etc. in their bids to arrange inspection by ANERT, if considered necessary.
- 8.2 All communication shall be made to the registered email of the bidder and ANERT shall not be responsible for non-receipt or delay of any such communication.

9. CORRUPT AND FRAUDULENT PRACTICES

ANERT requires compliance with its policy in regard to corrupt and fraudulent/prohibited practices as set forth in this proposal. In further pursuance of this policy, the selected service Provider(s) shall permit ANERT or its representatives to inspect the accounts, records and other documents relating to the submission of the Proposal and execution of the contract, in case of award, and to have the records inspected by ANERT.

10. CONFLICT OF INTEREST

- i. The service Provider(s) is required to provide professional, objective, and impartial services, at all times holding ANERT's interests paramount, strictly avoiding conflicts with other assignments or its own corporate interests, and acting without any consideration for future work. The supplier has an obligation to disclose to ANERT any situation of actual or potential conflict that impacts its capacity to serve the best interest of ANERT. Failure to disclose such situations may lead to the disqualification of the supplier or the termination of its Contract and/or sanctions by the Government.
- ii. Relationship with the ANERT staff: a service Provider (including its subsidiaries /partners) that has a close business or family relationship with a professional staff of the ANERT who are directly or indirectly involved in any part of the preparation of the Terms of Reference for the assignment, the selection process for the Contract, or the supervision of the Contract, may not be awarded a Contract, unless the conflict stemming from this relationship has been resolved in a manner acceptable to ANERT throughout the selection process and the execution of the Contract. Any other types of conflicting relationships as indicated in the document

11. CONFIDENTIALITY

- i. From the time the Proposals are opened to the time the Contract is awarded, the agency (ies) should not contact any of the officials of ANERT on any matter related to its Technical and/or Financial Proposal. Information relating to the evaluation of Proposals and award recommendations shall not be disclosed to the agency (ies) who submitted the Proposals or to any other party not officially concerned with the process, until the publication of the Contract award information.
- ii. Any attempt by the agency (ies) or anyone on behalf of the Suppliers to influence improperly ANERT in the evaluation of the Proposals or Contract award decisions may result in the rejection of its Proposal and may be subject to the application of prevailing Government sanctions procedures.

- iii. Notwithstanding the above provisions, from the time of the Proposals" opening to the time of Contract award publication, if a agency (ies) intends to contact ANERT on any matter related to the selection process, it should do so only in writing.
- iv. Proposals must be direct, concise, and complete. ANERT will evaluate bidder's proposal based on its clarity and the directness of its response to the requirements of the project as outlined in this document. Bidders shall furnish the required information on their technical and financial proposals in the enclosed formats only. Any deviations in format or if the proper information is not provided properly, the bidder will be liable for rejection. The Evaluation committee may seek clarification, if required, while evaluating the proposal.

12. APPLICABLE LAW

The work order shall be governed by the laws and procedures established by Government of Kerala, within the frame work of applicable legislation and enactment made from time to time concerning such commercial dealings. Any default in the terms and conditions of the document by the service provider will lead to rejection of work order.

13. AMENDMENT OF EOI DOCUMENT

At any time prior to the deadline for submission of the bid, ANERT may for any reason, modify the document. The amendment document/ corrigendum shall be notified through the website www.anert.gov.in and such amendments shall be binding on all the bidders.

14. COMMENCEMENT OF SERVICE

The successful bidder should sign the contract agreement within 7 days of issue of order. The successful bidder should start the services as defined in the scope of work within 15 days of Issue of work order.

15. GOVERNMENT OF KERALA – CORRUPT AND FRAUDULENT PRACTICES

ANERT follows the policy of the Government of Kerala for anti-corruption and fraudulent practices to maintain sound procurement principles of open competition, economy and efficiency, transparency, and fairness. ANERT requires the agency (ies) to

observe the following Government manuals (amended from time-to-time) during the selection process and in execution of such contracts The Kerala Financial Code (KFC), 2008 (7th Edition, 1st Edition was in 1963), The Stores Purchase Manual (SPM), 2013.

BID QUALIFICATION REQUIREMENTS

16. BID QUALIFICATION REQUIREMENTS

- 16.1.1 An agreement in Rs.200/- Kerala stamp paper as per the format given in Annexure D must be submitted along with EoI document.
- 16.1.2 Only Original Equipment Manufacturer (OEM) / Authorised Distributor of OEMs are eligible to participate in the process.
- 16.1.3 For PV modules: - Only the Make and Models listed by MNRE in the ALMM order issued by MNRE from time to time are eligible for supply.
- 16.1.4 The bidder shall be either Proprietary/ Limited company/ PSU registered in India with a valid Company Registration Certificate.
- 16.1.5 The OEM shall be in the concerned business for last two years in India
- 16.1.6 The bidder should have service centres/authorised service providers in Kerala. Detailed list with address, contact details and proof has to be submitted. If the bidder does not have such facility at the time of submission, an undertaking should be submitted along with Kerala stamp paper worth Rs. 200/- agreeing to set up such facility and intimate the same within 15 days of letter of acceptance.
- 16.1.7 The bidder shall provide warranty for the components being listed as per this document and shall also submit an undertaking on a non-judicial stamp paper of Rs.200/- for providing service support during the entire warrantee period.
- 16.1.8 ANERT will conduct factory visits and witness the manufacturing process and tests, if found to be necessary.
- 16.1.9 ANERT reserves the right to delist such of the manufacturers from the Empanelment list in case, the performance of the module is not satisfactory within the guaranteed period

16.2 Eligibility Requirement – (PV Modules)

- 16.2.1 The detail of eligibility requirements is provided in the table below. The bidders are required to furnish the required supporting documents along with the Technical Bid.

S. No.	Criteria	Documents Required
1.1	The Bidder should have any of the following legal status: a) Body incorporated in India under the Companies Act, 2013 including any amendment thereto; OR b) Firm registered under Partnership Act, 1932 in India; OR c) Sole Proprietor	a) In case of Company – Copy of Registration/ Incorporation Certificate b) In case of Partnership – Copy of Deed of Partnership c) In case of Sole Proprietor – Duly notarized Undertaking from Sole proprietor
1.2	The Bidder must have the required GST Registration	Copy of GST registration certificate with legible GSTIN.
1.3	The Bidder must have valid PAN Number	Copy of Pan Card
1.4	The OEM should have a minimum manufacturing capacity of 10 MW within India and should have supplied at least 25 MW for projects within India	Self-declaration and proof in this in this regard to be submitted.
1.5	The bidder should be listed in the list of ALMM list issued by MNRE from time to time	Self-declaration and proof in this in this regard to be submitted.
1.6	The bidder should be having unblemished record and must not be blacklisted or declared ineligible for corrupt & fraudulent practices by “any state/ central government” department/ company / entity” as on date of bid opening.	The bidder shall provide an Undertaking as per the format provided as Format B.

16.2.1 Qualification Requirement

The details of qualification requirements are provided in the table below. The bidders are required to furnish the required supporting documents along with the Technical Bid.

S. No.	Criteria	Documents Required
1.1.	Technical Criteria	
	The bidder must have supplied PV modules of capacity 25 MW or above within India	The details of projects executed using the modules should be listed.
1.2.	Financial Criteria	
1.2.1.	The Bidder should have positive net worth in at least 2 years out of the last five Financial Years (FY17-18, FY18-19 & FY19-20).	1. Certificate fulfilling required financial criteria in the name of Bidder duly certified by Practicing Chartered Accountant as per the format provided Format C, duly mentioning UDIN 2. Firm's Annual Audit Report, Balance sheet, Profit & Loss and Income Tax Returns / CA certificate for last Five years i.e. FY: FY: FY16-17, FY17-18, FY18-19, FY19-20, and FY20-21
1.2.2.	Minimum Average Annual Turnover (MAAT) during any 2 best out of last five financial years (FY15-16, FY16-17, FY17-18, FY18-19, and FY19-20) of the bidder shall not be less than 2 Cr.	

16.3 Eligibility Requirement – (Solar Inverters)

16.3.1 The detail of eligibility requirements is provided in the table below. The bidders are required to furnish the required supporting documents along with the Technical Bid.

S. No.	Criteria	Documents Required
1.1	The Bidder should have any of the following legal status: <ul style="list-style-type: none"> • Body incorporated in India under the Companies Act, 2013 including any amendment thereto; OR • Firm registered under Partnership Act, 1932 in India; OR • Sole Proprietor 	<ul style="list-style-type: none"> • In case of Company – Copy of Registration/ Incorporation Certificate • Copy of Deed of Partnership • In case of Sole Proprietor – Duly notarized Undertaking from Sole proprietor

1.2	The Bidder must have the required GST Registration	Copy of GST registration certificate with legible GSTIN.
1.3	The Bidder must have valid PAN Number	Copy of Pan Card
1.4	The OEM should have a minimum manufacturing capacity of 10 MW within India and should have supplied at least 20 MW for projects within India	Self-declaration and proof in this in this regard to be submitted.
1.5	The bidder should be having unblemished record and must not be blacklisted or declared ineligible for corrupt & fraudulent practices by “any state/ central government” department/ company / entity” as on date of bid opening.	The bidder shall provide an Undertaking as per the format provided as Format B.

16.3.1 Qualification Requirement

The details of qualification requirements are provided in the table below. The bidders are required to furnish the required supporting documents along with the Technical Bid.

S. No.	Criteria	Documents Required
1.1.	Technical Criteria	
	The bidder must have supplied Solar Inverters of cumulative capacity 20 MW or above within India	The details of projects executed using the modules should be listed.
1.2.	Financial Criteria	
1.2.1.	The Bidder should have positive net worth in at least 2 years out of the last five Financial Years (FY17-18, FY18-19 & FY19-20).	1. Certificate fulfilling required financial criteria in the name of Bidder duly certified by Practicing Chartered Accountant as per the format provided Format C, duly mentioning UDIN 2. Firm’s Annual Audit Report, Balance sheet, Profit & Loss and Income Tax Returns / CA certificate for last Five years i.e. F.Y: FY16-17, FY17-18, FY18-19, FY19-20, and FY20-21
1.2.2.	Minimum Average Annual Turnover (MAAT) during any 2 best out of last five financial years (FY15-16, FY16-17, FY17-18, FY18-19, and FY19-20) of the bidder shall not be less than 2 Cr.	

16.4 Eligibility Requirement – (Battery)

16.4.1 The detail of eligibility requirements is provided in the table below. The bidders are required to furnish the required supporting documents along with the Technical Bid.

S. No.	Criteria	Documents Required
1.1	The Bidder should have any of the following legal status: a. Body incorporated in India under the Companies Act, 2013 including any amendment thereto; OR b. Firm registered under Partnership Act, 1932 in India; OR c. Sole Proprietor	d. In case of Company – Copy of Registration/ Incorporation Certificate e. In case of Partnership – Copy of Deed of Partnership f. In case of Sole Proprietor – Duly notarized Undertaking from Sole proprietor
1.2	The Bidder must have the required GST Registration	Copy of GST registration certificate with legible GSTIN.
1.3	The Bidder must have valid PAN Number	Copy of Pan Card
1.4	The OEM should have a minimum manufacturing capacity of 25 MWhr within India and should have supplied at least 30 MWhr for projects within India	Self-declaration and proof in this in this regard to be submitted.
1.5	The bidder should be having unblemished record and must not be blacklisted or declared ineligible for corrupt & fraudulent practices by “any state/ central government” department/ company / entity” as on date of bid opening.	The bidder shall provide an Undertaking as per the format provided as Format B.

16.4.2 Qualification Requirement

The details of qualification requirements are provided in the table below. The bidders are required to furnish the required supporting documents along with the Technical Bid.

S. No.	Criteria	Documents Required
1.1.	Technical Criteria	
	The bidder must have supplied Solar battery of capacity 30 MWhr or above within India. For Lithium battery manufacturers, the limit will be 10 MWhr	The details of projects executed using the modules should be listed.
1.2.	Financial Criteria	
1.2.1.	The Bidder should have positive net worth in at least 2 years out of the last five Financial Years (FY17-18, FY18-19 & FY19-20).	1. Certificate fulfilling required financial criteria in the name of Bidder duly certified by Practicing Chartered Accountant as per the format provided Format C, duly mentioning UDIN 2. Firm's Annual Audit Report, Balance sheet, Profit & Loss and Income Tax Returns / CA certificate for last Five years i.e. F.Y: FY15-16, FY16-17, FY17-18, FY18-19, and FY19-20
1.2.2.	Minimum Average Annual Turnover (MAAT) during any 2 best out of last five financial years (FY15-16, FY16-17, FY17-18, FY18-19, and FY19-20) of the bidder shall not be less than 2 Cr.	

CONDITIONS OF CONTRACT

17 GENERAL CONDITIONS

- 17.1 The bids should be as per the prescribed form which should be downloaded from the ANERT website. Bids that are not in the prescribed form are liable to be rejected.
- 18.1 Bids subject to conditions will not be considered. They are liable to be rejected on that sole ground.
- 18.2 If any bidders withdraw from his bid before the expiry of the period fixed for keeping the rates firm for acceptance, the earnest money if any, deposited by him, will be forfeited.
- 18.3 ANERT shall invite separate tenders from the short-listed vendors for supply of components for projects directly executed by ANERT.
- 18.4 The listed OEM should be prepared to guarantee satisfactory performance for a period of guarantee under a definite penalty. Communication of acceptance of the bid normally constitutes a concluded contract. Nevertheless, the successful bidder shall also execute an agreement for the due fulfilment of the contract within the period to be specified in the letter of acceptance. The contractor shall have to pay all stamp duty, Lawyer's charges and other expenses incidental to the execution of the agreement. Failure to execute the agreement within the period specified will entail the penalties set out below:
- a) A non-refundable licensing fee of 2.5% has to be remitted by tenderer. This will be deducted from the payment of tenderer while releasing payment. The successful tenderer shall before sign the agreement and within the period specified in the letter of acceptance of his tender, deposit a sum equivalent to 3% of the value of the contract as security for the satisfactory fulfilment of the contract less the amount of money deposited by him along with his tender. The amount of security may be deposited in the manner prescribed to be specified in the work order issued by ANERT.
 - b) There will be no exemption for MSE's in depositing this security amount. If the successful tenderer fails to deposit the security and execute the agreement as stated above, the earnest money deposited by him will be forfeited to ANERT

and contract arranged elsewhere at the defaulter's risk and any loss incurred by ANERT on account of the purchase will be recovered from the defaulter who will however not be entitled to any gain accruing thereby.

- c) In cases where a successful tenderer, after having made partial supplies fails to fulfil the contracts in full, all or any of the materials not supplied may at the discretion of the Purchasing Officer be purchased by means of another tender/quotation or by negotiation or from the next higher tenderer who had offered to supply already, and the loss if any caused to ANERT shall thereby together with such sums as may be fixed by ANERT towards damages be recovered from the defaulting tenderer.
- d) If the contractor fails to deliver all or any of the stores or perform the service within the time/period(s) specified in the contract, the purchaser shall without prejudice to its other remedies under the contract, deduct from the contract prices, as liquidated damages, a sum equivalent to 0.5 % of the delivered price of the delayed stores or unperformed services for each week of delay until actual delivery or performance, up to a maximum deduction of 10% of the contract price of the delayed stores and services. Once the maximum is reached, the purchaser may consider termination of the contract at the risk and cost of the contractor.

18.5 The Security deposit shall, subject to the conditions specified herein be returned to the contractor within three months after the expiration of the contract but in the event of any dispute arising between ANERT and the contractor, ANERT shall be entitled to deduct out of the deposits or the balance thereof, until such dispute is determined the amount of such damages, costs, charges and expenses as may be claimed. The same may also be deducted from any other sum which may be due at any time from ANERT to the contractor. In all cases where there are guarantee for the goods supplied, the security deposit will be released only after the expiry of the guarantee period.

- 18.6 (a) All payments to the contractors will be made by ANERT/concerned in due course as mentioned in this document
- (b) All incidental expenses incurred by ANERT for making payments outside the State in which the claim arises shall be borne by the contractor.

- 18.7 Payments will be made only after the supply, Installation and Commissioning of the items and certification by the competent Technical personnel of ANERT.
- 18.8 The contractor shall not assign or make over the contract on the benefits or burdens thereof to any other person or body corporate. The contractor shall not underlet or sublet to any person or persons or body corporate the execution of the contract or any part thereof without the consent in writing of the purchasing officer who shall have absolute power to refuse such consent or to rescind such consent (if given) at any time if he is not satisfied with the manner in which the contract is being executed and no allowance or compensation shall be made to the contractor or the subcontractor upon such rescission. Provided always that if such consent be given at any time, the contractor shall not be relieved from any obligation, duty or responsibility under this contract.
- 18.9 In case the contractor becomes insolvent or goes into liquidation, or makes or proposes to make any assignment for the benefit of his creditors or proposes any composition with his creditors for the settlement of his debts, carries on his business or the contract under inspection or behalf of or his creditors or in case any receiving order(s) for the administration of his estate are made against him or in case the contractor shall commit any act of insolvency or in case in which under any clause or clauses any act of insolvency or in case in which under any clause(s) of this contract the contractor shall have rendered himself liable to damages amounting to the whole of his security deposits, the contract shall, thereupon, after notice given by the Purchasing Officer to the contractor, be determined and ANERT may complete the contract in such time and manner and by such persons as ANERT shall think fit. But such determination of the contract shall be without any prejudice to any right or remedy of ANERT against the contractor or his sureties in respect of any breach of contract committed by the contractor. All expenses and damages caused to ANERT by any breach of contract by the contractor shall be paid by the contractor to ANERT and may be recovered from him under the provisions of the Revenue Recovery Act in force in the State.
- 18.10 In case the contractor fails to supply and deliver any of the said articles and things within the time provided for delivery of the same, or in case the contractor commits any breach of any of the covenants, stipulations and agreements herein contained,

and on his part to be observed and performed, then and in any such case, it shall be lawful for ANERT (if they shall think fit to do so) to arrange for the purchase of the said articles and things from elsewhere or on behalf of ANERT by an order in writing under *the* hand of the CEO put an end to this contract and in case ANERT shall have incurred sustained or been put to any costs, damages or expenses by reason of such purchase or by reason of this contract having been so put an end to or in case any difference in price, compensation, loss, costs, damages, expenses or other moneys shall then or any time during the continuance of this contract be payable by the contractor to ANERT under and by virtue of this contract, it shall be lawful for ANERT from and out of any moneys for the time being payable or owing to the contractor from ANERT under or by virtue of this contract or otherwise to pay and reimburse to ANERT all such costs, damages and expenses they may have sustained, incurred or been put to by reason of the purchase made elsewhere or by reason of this contract having been so put an end to as aforesaid and also all such difference in price, compensation, loss, costs, damages, expenses and other moneys as shall for the time being payable by the contractor aforesaid.

18.11 Any sum of money due and payable to the contractor (including security deposit returnable to him) under this contract may be appropriated by the CEO or any other person authorised by ANERT and set off against any claim of ANERT for the payment of a sum of money arising out of or under any other contract made by the contractor with ANERT or any other person authorised by ANERT. Any sum of money due and payable to the successful tenderer or contractor from ANERT shall be adjusted against any sum of money due to ANERT from him under any other contracts.

18.12 Every notice hereby required or authorised to be given may be either given to the contractor personally or left at his residence or last known place of abode or business, or may be handed over to his agent personally, or may be addressed to the contractor by post at his usual or last known place of abode or business and if so addressed and posted, shall be deemed to have been served on the contractor on the date on which in the ordinary course of post, a letter so addressed and posted would reach his place of abode or business.

- 18.13 Special conditions, if any, will not be applicable to the contract unless they are expressly accepted in writing by the purchaser.
- 18.14 The bidder should send along with this EoI document an agreement executed and signed in Kerala Stamp Paper of value Rs.200/-. A specimen form of agreement is given as Annexure D. Bids without the agreement in stamped paper will be rejected outright.
- 18.15 **Conditions in the technical document, technical specifications and special conditions of this document would override these general conditions, wherever applicable.**
- 18.16 ANERT, by notice sent to the Supplier, may terminate the contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for ANERT's convenience, the extent to which performance of the Supplier under the contract is terminated, and the date upon which such termination becomes effective.
- 18.17 In case any difference or dispute arises in connection with the contract, all legal proceedings relating to the matter shall be instituted in the Court within whose jurisdiction the CEO, ANERT voluntarily resides.
- 18.18 The Courts situated at the place where the headquarters of ANERT is situated viz, Thiruvananthapuram alone will have jurisdiction to entertain civil suits and all other legal pertaining to this contract.
- 18.19 **During the evaluation, ANERT may seek more clarifications/details from any or all of the bidders, if felt necessary.**



**AGENCY FOR NEW & RENEWABLE ENERGY
RESEARCH AND TECHNOLOGY (ANERT)**

Department of Power, Government of Kerala
Thiruvananthapuram, Kerala – 695 033;
www.anert.gov.in , projects@anert.in

EoI DOCUMENT

***Expression of Interest (EoI) for Registration of
OEMs for supply of components for Solar
Projects implemented by ANERT***

Ref. No.: ANERT-TECH/68/2022-PE1(RTS)

PART – 2: SCOPE OF WORKS

Date of Publishing of Bids : - 04/11/2022

SCOPE

19 INVITATION TO BID

- 20.1 **ANERT is the State Agency for Renewable Energy in Kerala** having its Headquarters at Thiruvananthapuram, Kerala and various district level offices **This EoI has been issued by the ANERT for listing and supply of Solar components such as SPV Modules, Solar Inverter and Solar Battery, Module Mounting Structure etc for Supply in projects to be directly implemented by ANERT.**
- 20.2 In order to meet the requirements, ANERT proposes to invite bids from Manufacturers of SPV modules / authorised Distributors of respective OEM's and provide services as per details/**scope of work** mentioned in this document.
- 20.3 Bidder shall mean any entity (i.e. juristic person) who meets the **eligibility criteria** of this document and willing to provide the Services as required in this bidding document. The interested Bidders who agree to all the terms and conditions contained in this document may submit their Bids with the information desired in this bidding document.
- 20.4 Address for submission of Bids, contact details including email address for sending communications are given in this document.
- 20.5 This document shall not be transferred, reproduced or otherwise used for purpose other than for which it is specifically issued.
- 20.6 Interested Bidders are advised to go through the entire document before submission of Bids to avoid any chance of elimination. The eligible Bidders desirous of providing services to ANERT are invited to submit their technical proposal in response to this EoI. The criteria and the actual process of evaluation of the responses to this EoI and the selection of Bidder will be entirely at ANERT's discretion. This EoI seeks proposal from Bidders who have the necessary experience, capability & expertise to provide ANERT the proposed Services adhering to its requirements outlined in this document.

20 SCOPE OF SUPPLY

20.1 The selected bidders will be short listed for supply of components for projects to be implemented by ANERT from time to time and will issue supply orders for the projects directly executed by ANERT.

21.1 The approximate quantity that will be required during the period of this Rate Contract is given below; bidders are required to submit rates for this capacity on unit rate:

S/N	Component	Cumulative Capacity (Approx)
1	PV Module (Poly crystalline) – 335 Wp or above	0.5 MWp
2	PV Module (Mono PERC) – 375 Wp or above	0.5 MWp
3	PV Module (Mono PERC, half cut) – 380 Wp or above	3 MWp
4	Solar Inverter (Off-Grid) – 0.5 kW to 50 kW	1,000 kW
5	Solar Inverter (On-Grid) – 1 kW to 300 kW	2,500 kW
6	Solar Inverter (Hybrid) – 2 kW to 25 kW	1,500 kW
7	Battery (VRLA GEL) – 12 V, 100 AH / 2 V 200 AH or above	60,000 kWhr
8	Battery (Lithium Ferro Phosphate) – 12.8 V, 100 AH or above	60,000 kWhr
9	Battery (LMLA) – 12 V, 100 AH / 2V, 100 AH or above	60,000 kWhr
10	Module Mounting Structures (HDG / Aluminium) including Fasteners and other accessories (SS)	Based on requirement
11	Solar String Combiner Box, ACDB & DCDBs	Based on requirement
12	Solar Energy Meter & Net Meter	Based on requirement
13	Remote Monitoring Systems including Weather Station	Based on requirement
14	Module Cleaning Systems	Based on requirement
15	LT Panel Board	Based on requirement

21.2 The Technical parameters of the components being quoted must be provided in the format as per Annexure B and the list of models including datasheets and type test certificates to be provided in the format as given in Annexure – C

22 SCHEDULE OF SUPPLY

Supply of orders issued through short tenders:

- a. The items should be delivered at the sites for which supply order shall be given and specified by ANERT, under prior intimation and supervision of ANERT.
- b. The Supply of items must be done within 3 weeks from the issue of supply order.
- c. For any delay in supply, ANERT will charge penalty of 0.5% of the order value/week or part thereof, subject to the cost not exceeding 10% of the total cost.
- d. Order will be cancelled if the delay of service is more than this time period and work will be issued to the second successful bidder

23 PAYMENT

Supply Orders Issued from ANERT:

- A. No advance payment will be given. Payment will be released on receipt of invoices duly certified for acceptance of stores by the concerned Officer of ANERT.
- B. The terms of payment shall be:
 - i. 2.5 % of the invoice amount shall be charged by ANERT as non-refundable license fee and the remaining amount shall be treated as contract value for further payment.
 - ii. 95% of the contract value shall be released on acceptance of materials
 - iii. The remaining 5% shall be retained as performance security and will be released after product warranty of 10 years.
 - iv. This Performance security shall be released on submission of Bank Guarantee of equivalent amount valid for a period of 10 years. This will be returned only after completion of warranty period.
- C. Income tax and other statutory deductions shall be made from the payment as per prevailing norms.

24 SERVICE AND MAINTENANCE

- 24.1 The faulty system or components should be replaced/ repaired within 10 days of fault reporting. The servicing should be carried out at the site of installation.

- 24.2 Any Delay in servicing beyond 15 days of fault reporting would attract penalty at the rate of at the rate fixed by CEO, ANERT and further actions will be initiated against the agency.
- 24.3 A designated contact Telephone Number and address should be submitted for reporting faults during the warranty period.

26. SPV MODULES

The SPV Modules listed by MNRE in the ALMM list are only eligible for submission of bids. However, the specifications for the PV Module are detailed below:

S/N	Parameter	Specification
1.	Module efficiency	Min16%
2.	PV cell	Min 4 Busbar
3.	Linear Degradation for 1 st year	Max2.5%
4.	Linear Degradation after 1 st year up to 25 years	Max 0.7% per year

- 26.1 The PV modules must be PID compliant, salt, mist & ammonia resistant and should withstand weather conditions for the project life cycle.
- 26.2 The back sheet of PV module shall be minimum of three layers with outer layer (exposure to ambience) and shall be made of PVDF or PVF. The Back sheets for PV Module with 2 layered or 3 layered Polyester types or the back sheets with Polyester (PET type) at Air side material are not permitted
- 26.3 The minimum thickness of the core layers (without adhesive and inner EVA coated) must be 300 microns. The maximum allowed water vapor transmission rate shall be less than 2 g / m²/day and shall have a Partial Discharge > / = 1500V DC
- 26.4 The front glass shall meet the following specifications:
- The facing glass must be Tempered, PV grade with Low iron and high transmission.
 - The transmission shall be > 93 %
 - Thickness shall be min 3.2 mm
 - Textured to trap more light
 - The glass shall have an Anti-reflective coating for the better transmission and light absorption.
 - Tempered glass to meet the external load conditions
- 26.5 The encapsulant used for the PV modules should be UV resistant in nature. No yellowing of the encapsulant with prolonged exposure shall occur. The sealant used for edge sealing of PV modules shall have excellent moisture ingress

Protection with good electrical insulation and with good adhesion strength. Edge tapes for sealing are not allowed.

- 26.6 Anodized Aluminium module frames of sufficient thickness shall be used which are electrically & chemically compatible with the structural material used for mounting the modules having provision for earthing.
- 26.7 UV resistant junction boxes with minimum three numbers of bypass diodes and two numbers of MC4 connectors or equivalent with appropriate length of 4 sq.mm Cu cable shall be provided. IP67 degree of protection shall be used to avoid degradation during Life.
- 26.8 Shading correction/ bypass diode for optimizing PV out to be incorporated in each solar module or panel level.
- 26.9 Each PV module used in any solar power project must use a RF identification tag (RFID), which must contain the following information. The RFID can be inside or outside the module laminate but must be able to withstand harsh environmental conditions.
 - a. Name of the manufacturer of PV Module.
 - b. Name of the manufacturer of Solar cells.
 - c. Month and year of the manufacture (separately for solar cells and module).
 - d. Country of origin (separately for solar cell and module).
 - e. I-V curve for the module.
 - f. Peak Wattage, IM, VM and FF for the module.
 - g. Unique Serial No. and Model No. of the module.
 - h. Date and year of obtaining IEC PV module qualification certificate.
 - i. Name of the test lab issuing IEC certificate.
 - j. Other relevant information on traceability of solar cells and module as per ISO 9000 series.
- 26.10 The following details should be provided on the module
 - a. Name of the manufacture.
 - b. Month and year of manufacture.
 - c. Rated Power at STC.
 - d. VMP, IMP, VOC, Isc.

- 26.11 The successful bidder shall arrange an RFID reader to show the RFID details of the modules transported to sites, to the site Engineer in charge up to their satisfaction, which is mandatory for the site acceptance test.
- 26.12 Each PV module used in any solar power project must use a RF identification tag (RFID), which must contain the following information. The RFID can be inside or outside the module laminate but must be able to withstand harsh environmental conditions.
- 26.13 The PV modules must qualify (enclose Test Reports/Certificates from IEC/NABL accredited laboratory) as per relevant IEC standard. The Performance of PV Modules at STC conditions must be tested and approved by one of the IEC/NABL Accredited Testing Laboratories.
- 26.14 PV modules used in solar power plant/ systems must be warranted for 10 years for their material, manufacturing defects, workmanship. The output peak watt capacity which should not be less than 90% at the end of 10 years and 80% at the end of 25 years
- 26.15 Original Equipment Manufacturers (OEM) Warrantee of the PV Modules shall be submitted by the successful bidder when the materials delivered at site.
- 26.16 The PV Module should be under the DCR (Domestic Content Requirement) category
- 26.17 The PV modules shall conform to the following standards:
- i. IS 14286: Crystalline silicon terrestrial photovoltaic (PV) modules — design qualification and type approval.
 - ii. IEC 61215 / IEC 61646: c-Si (IEC 61215): Crystalline silicon terrestrial photovoltaic (PV) modules – Design qualification and type approval Thin Film (IEC 61646): Design, Qualification & Type Approval
 - iii. IEC 61730-1: Photovoltaic Module safety qualification- Part 1: Requirements for construction
 - iv. IEC 61730-2: Photovoltaic Module safety qualification- Part 2: Requirements for testing
 - v. IEC 61701: Salt mist corrosion testing of photovoltaic modules
 - vi. IEC 62716: Test Sequences useful to determine the resistance of PV Modules to Ammonia (NH₃)

26.18 The PV module should have IS14286 qualification certification for solar PV modules (Crystalline silicon terrestrial photovoltaic (PV) modules — design qualification and type approval). The exemption of this certification and other details are described, as per MNRE's Gazette Notification No. S.O. 3449 (E). Dated 13th July, 2018.

26.19 PV Module of same Make/ Model in the same series shall be considered as a single product while making the payment as per MNRE Order No. 283/54/2018-Grid Solar (ii) Dt. 06- Feb-2020.

27. POWER CONDITIONING UNIT (ON-GRID)

The specifications for the ON-Grid Inverters are detailed below:

General Specifications:

27.1 All the Inverters should contain the following clear and indelible Marking Label & Warning Label as per IS16221 Part II, clause 5. The equipment shall, as a minimum, be permanently marked with:

- a. The name or trademark of the manufacturer or supplier.
- b. A model number, name or other means to identify the equipment.
- c. A serial number, code or other markings allowing identification of manufacturing location and the manufacturing batch or date within a three-month time period.
- d. Input voltage, type of voltage (A.C. or D.C.), frequency, and maximum continuous current for each input.
- e. Output voltage, type of voltage (A.C. or D.C.), frequency, maximum continuous current, and for A.C. outputs, either the power or power factor for each output.
- f. The Ingress Protection (IP) rating

27.2 The inverter output shall be 415 VAC, 50 Hz, 3 phase or 230 VAC, 50 Hz, 1 phase.

27.3 The inverter shall include appropriate self-protective and self-diagnostic feature to protect itself and the PV array from damage in the event of inverter component failure or from parameters beyond the inverter's safe operating range due to internal or external causes.

27.4 The Technical Specification of On-Grid Inverters are summarized below:

Specifications of Inverters	
Parameters	Detailed specification
Nominal voltage	230V/415V
Voltage Band	Between 80% and 110% of V nominal
Nominal Frequency	50 Hz
Operating Frequency Range	47.5 to 50.5 Hz
Waveform	Sine wave
Harmonics	AC side total harmonic current distortion < 3%
Ripple	DC Voltage ripple content shall be not more than 1%
Efficiency	Efficiency shall be >97%
Casing protection levels	Degree of protection: Minimum IP-54 for internal units and IP-65 for outdoor units
Operating ambient Temp range	-10 to + 60 degree Celsius
Operation	Completely automatic including wakeup, synchronization (phase locking) and shut down
MPPT	MPPT range must be suitable to individual array voltages
Protections	Over voltage: both input and output Over current: both input and output Over / Under grid frequency Over temperature Short circuit Lightning Surge voltage induced at output due to external source Islanding
Ingress Protection	IP 65 for Outdoor / IP 54 for Indoor
Recommended LED indications	ON Grid ON Under/ Over voltage Overload Over temperature

Specifications of Inverters	
Parameters	Detailed specification
Recommended LCD Display on front Panel	DC input voltage DC current AC Voltage (all 3 phases) AC current (all 3 phases) Frequency Ambient Temperature Instantaneous power Cumulative output energy Cumulative hours of operation Daily DC energy produced
Communication Interface	RS485/ RS232/Wi-Fi (with or without USB)

27.5 The Technical Specification for Interconnection are summarized below:

Sl No	Parameters	Requirements	Reference
1	Overall conditions of service	Reference to regulations	Conditions for Supply of Electricity
2	Overall Grid Standards	Reference to regulations	Central Electricity Authority (Grid standards) Regulations 2010
3	Equipment	Applicable industry standards	IEC/EN standards
4	Safety and Supply	Reference to regulations, (General safety requirements)	Central Electricity Authority (Measures of safety and electricity supply) Regulations, 2010 and subsequent amendments
5	Meters	Reference to regulations and additional conditions issued by the commission.	Central Electricity Authority (Installation & operation of meters) regulations 2006 and subsequent amendments
6	Harmonic current	Harmonic current injections from a generating station shall not exceed the limits specified in IEEE 519	IEEE 519 relevant CEA (Technical Standards for connectivity of the distributed generation resource) Regulations

Sl No	Parameters	Requirements	Reference
			2013 and subsequent amendments
7	Synchronization	Photovoltaic system must be equipped with a grid frequency synchronization device, if the system is using synchronizer inherently built in to the inverter then no separate synchronizer is required	Relevant CEA (Technical Standards for Connectivity of the distributed generation resources) regulations 2013 and subsequent amendments.
8	Voltage	The voltage-operating window should minimize nuisance tripping and should be under operating range of 80% to 110% of the nominal connected voltage. beyond the clearing time of 2 seconds, the Photovoltaic system must isolated itself from the grid	
9	Flicker	Operation of Photovoltaic system should not cause voltage flicker in excess of the limits stated in IEC 61000 or other equivalent Indian standards if any	Relevant CEA regulations 2013 and subsequent if any, (Technical standards for connectivity of the distributed generation resource)
10	Frequency	When the distribution system frequency deviates outside the specified limits (50.5 Hz on upper side and 47.5 Hz on lower side) up to 0.2 sec, the Photovoltaic systems shall automatically disconnect from grid and be in island mode.	
11	DC injection	Photovoltaic system shall not inject DC current greater than 0.5% of full rated output at the	

Sl No	Parameters	Requirements	Reference
		interconnection point or 1% rated inverter output current into distribution system under any operating conditions.	
12	Power Factor	While the output of the inverter is greater than 50%, a lagging power factor greater than 0.9 shall be maintained.	
13	Islanding and Disconnection	The photovoltaic system in the event of voltage or frequency variations must island/disconnect itself with the time stipulated as per IEC standards	
14	Overload and Overheat	The inverter should have the facility to automatically switch off in case of overload or overheat and should restart when normal conditions are restored	

27.6 The IEC Certifications of On-Grid Inverters are summarized below:

Standard	Description
IEC 61683	Photovoltaic systems - Power conditioners - Procedure for measuring efficiency
IEC 61727	Photovoltaic (PV) systems- Characteristics of the utility interface
IEC/EN 62109-1	Safety of power converters for use in photovoltaic power systems - Part 1: General requirements
IEC/EN 62109-2	Safety of power converters for use in photovoltaic power systems - Part 2: Particular requirements for inverters
IEC/EN 61000-3-3/ 3-11/ 3-5	Electromagnetic compatibility (EMC) - Part 3-11; Limits; Limitation of Voltage Change, Voltage Fluctuations and Flicker in Public Low- Voltage Supply Systems; Rated Current <16A / >16A and <75A / >75A per Phase respectively

Standard	Description
IEC/EN 61000-3-2/ -3-12/ -3-4	Electromagnetic compatibility (EMC) - Part 3-12; Limits; Limits for Harmonic Currents produced by equipment connected to the public low voltage systems with Rated Current <16A / >16A and <75A / >75A per Phase respectively
*IEC/EN 61000-6-1 / 6-2	Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity standard for residential and commercial / industrial environments
*IEC/EN 61000-6-3 / 6-4	Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for residential and commercial / industrial environments
IEC 62116	Utility-interconnected photovoltaic inverters - Test procedure of islanding prevention measures
IEC 60068-2-1	Environmental testing - Part 2-1: Tests - Test A: Cold
IEC 60068-2-2	Environmental testing - Part 2-2: Tests - Test B: Dry heat
IEC 60068-2-14	Environmental testing - Part 2-14: Tests - Test N: Change of temperature
IEC 60068-2-30	Environmental testing - Part 2-30: Tests - Test Db:, Damp heat, cyclic (12 h + 12 h cycle)

***Recommended but not mandatory**

28. POWER CONDITIONING UNIT (OFF-GRID)

28.1 Power Conditioning Unit (PCU) shall comprise of charge controller, MPPT unit (Integrated with the inverter or separate), Bi-Directional Inverter without Grid Feeding facility and distribution panel along with necessary displays, indicators and alarms. The Inverter shall be of bi-directional type without Grid feeding facility.

General Specifications:

28.2 All the Inverters should contain the following clear and indelible Marking Label & Warning Label as per IS16221 Part II, clause 5. The equipment shall, as a minimum, be permanently marked with:

28.2.1 The name or trademark of the manufacturer or supplier.

28.2.2 A model number, name or other means to identify the equipment.

- 28.2.3 A serial number, code or other markings allowing identification of manufacturing location and the manufacturing batch or date within a three-month time period.
- 28.2.4 Input voltage, type of voltage (A.C. or D.C.), frequency, and maximum continuous current for each input.
- 28.2.5 Output voltage, type of voltage (A.C. or D.C.), frequency, maximum continuous current, and for A.C. outputs, either the power or power factor for each output.
- 28.2.6 The Ingress Protection (IP) rating
- 28.3 Off- Grid Inverters from 1kW/1kVA to 50kW/50kVA will be listed
- 28.4 The control system should continuously adjust the voltage of the generator to optimize the power available. The power conditioner must automatically re-enter standby mode when input power reduces below the standby mode threshold. Front Panel display should provide the status and fault indication (if any)
- 28.5 The inverter should have IGBT/MOSFET based controlling elements and current regulated systems
- 28.6 Operational Voltage Range: Suitable System Voltage according to the battery bank and panel array
- 28.7 The inverter must have MPPT power electronics for the maximum extraction of PV power
- 28.8 The inverter shall provide electronic protection against the following type of faults:
- a. Overload
 - b. Over temperature
 - c. Reverse polarity
 - d. Short circuit (circuit breaker & electronic protection against sustained fault).
 - e. Over-load protection.
 - f. Under voltage & Over-voltage of Battery.
 - g. Auto/ Manual re-connects provision.
 - h. Reverse polarity protection both for the PV array and Battery bank (DC)
- 28.9 Auto resetting electronic over current protection
- 28.10 The inverter must have a RS485/RS232 interface

28.11 The inverter shall conform to IEC 61683/ IS 61683 for efficiency measurement, and IEC 60068-2 (1,2,14,30) or equivalent BIS standard for environmental testing.

- a. Operational Voltage Range: Suitable System Voltage according to the battery bank and panel array
- b. Type: Self commuted, current regulated, IGBT/ MOSFET based.
- c. Output voltage: Output voltage 230V/415V
- d. Output frequency :50 Hz
- e. THD: Less than (<) 5%
- f. Efficiency: 90% or above at full load.
- g. Ambient temperature: 5 to 55°C

28.12 Protections:

- a. Short circuit (circuit breaker & electronic protection against sustained fault)
- b. Over-load protection
- c. Under voltage & Over-voltage of Battery
- d. Auto/ Manual re-connects provision
- e. Reverse polarity protection both for the PV array and Battery bank (DC)

28.13 Ingress Protections: IP20/ IP 21 or above

28.14 Other Features:

- a. Surge Protection: 150% of the rated capacity for a period of 10 seconds
- b. Acoustic Noise Level \leq 50 dB

28.15 Recommended Indicators / Displays / Alarms

- a. Digital Display(s) of input DC SPV voltage & current, along with Energy Meter
- b. Digital Display (s) AC output voltage, frequency, power and current
- c. Digital Display of output AC kWh meter (Daily/ Cumulative)
- d. Overload Alarm / cut-off
- e. System Cut-off Indicator
- f. System Reset Button.
- g. Battery voltage and current.
- h. SPV charging.
- i. Battery Charge Level LED Indicator (s) - Low, Medium, High, Full.
- j. Battery Low indicator and Alarm/ cut-off.

29. POWER CONDITIONING UNIT (HYBRID)

The specifications for the ON-Grid Inverters are detailed below:

a. **General Specifications:**

- 29.1 All the Inverters should contain the following clear and indelible Marking Label & Warning Label as per IS16221 Part II, clause 5. The equipment shall, as a minimum, be permanently marked with:
- g. The name or trademark of the manufacturer or supplier.
 - h. A model number, name or other means to identify the equipment.
 - i. A serial number; code or other markings allowing identification of manufacturing location and the manufacturing batch or date within a three-month time period.
 - j. Input voltage, type of voltage (A.C. or D.C.), frequency, and maximum continuous current for each input.
 - k. Output voltage, type of voltage (A.C. or D.C.), frequency, maximum continuous current, and for A.C. outputs, either the power or power factor for each output.
 - l. The Ingress Protection (IP) rating
- 29.2 The Hybrid inverter output shall be 415 VAC, 50 Hz, 3 phase / 230 VAC, 50 Hz, 1 phase.
- 29.3 The Hybrid inverter should have all the technical requirements for connecting to the Grid and provision of Intentional Islanding with facility for connecting to a battery bank
- 29.4 The Hybrid inverter shall include appropriate self-protective and self-diagnostic feature to protect itself and the PV array from damage in the event of inverter component failure or from parameters beyond the inverter's safe operating range due to internal or external causes.
- 29.5 Hybrid Inverters from 2kW/2kVA to 25kW/25kVA will be listed
- 29.6 The Technical Specification of On-Grid Inverters are summarized below:

Specifications of Inverters	
Parameters	Detailed specification
Nominal voltage	230V/415V
Voltage Band	Between 80% and 110% of V nominal
Nominal Frequency	50 Hz
Operating Frequency Range	47.5 to 50.5 Hz
Waveform	Sine wave
Harmonics	AC side total harmonic current distortion < 3%
Ripple	DC Voltage ripple content shall be not more than 1%
Efficiency	Efficiency shall be >97%
Casing protection levels	Degree of protection: Minimum IP-54 for internal units and IP-65 for outdoor units
Operating ambient Temp range	-10 to + 60 degree Celsius
Operation	Completely automatic including wakeup, synchronization (phase locking) and shut down
MPPT	MPPT range must be suitable to individual array voltages
Protections	Over voltage: both input and output Over current: both input and output Over / Under grid frequency Over temperature Short circuit Lightning Surge voltage induced at output due to external source Islanding
Ingress Protection	IP 65 for Outdoor / IP 54 for Indoor
Recommended LED indications	ON Grid ON Under/ Over voltage Overload Over temperature

Specifications of Inverters	
Parameters	Detailed specification
Recommended LCD Display on front Panel	DC input voltage DC current AC Voltage (all 3 phases) AC current (all 3 phases) Frequency Ambient Temperature Instantaneous power Cumulative output energy Cumulative hours of operation Daily DC energy produced Battery voltage Battery current
Communication Interface	RS485/ RS232/Wi-Fi (with or without USB)

29.7 The Technical Specification for Interconnection are summarized below:

Sl No	Parameters	Requirements	Reference
1	Overall conditions of service	Reference to regulations	Conditions for Supply of Electricity
2	Overall Grid Standards	Reference to regulations	Central Electricity Authority (Grid standards) Regulations 2010
3	Equipment	Applicable industry standards	IEC/EN standards
4	Safety and Supply	Reference to regulations, (General safety requirements	Central Electricity Authority (Measures of safety and electricity supply) Regulations, 2010 and subsequent amendments
5	Meters	Reference to regulations and additional conditions issued by the commission.	Central Electricity Authority (Installation & operation of meters) regulations 2006 and subsequent amendments
6	Harmonic current	Harmonic current injections from a generating station shall not	IEEE 519 relevant CEA (Technical Standards for connectivity of the

SI No	Parameters	Requirements	Reference
		exceed the limits specified in IEEE 519	distributed generation resource) Regulations 2013 and subsequent amendments
7	Synchron-ization	Photovoltaic system must be equipped with a grid frequency synchronization device, if the system is using synchronizer inherently built in to the inverter then no separate synchronizer is required	Relevant CEA (Technical Standards for Connectivity of the distributed generation resources) regulations 2013 and subsequent amendments.
8	Voltage	The voltage-operating window should minimize nuisance tripping and should be under operating range of 80% to 110% of the nominal connected voltage. beyond the clearing time of 2 seconds, the Photovoltaic system must isolated itself from the grid	
9	Flicker	Operation of Photovoltaic system should not cause voltage flicker in excess of the limits stated in IEC 61000 or other equivalent Indian standards if any	Relevant CEA regulations 2013 and subsequent if any, (Technical standards for connectivity of the distributed generation resource)
10	Frequency	When the distribution system frequency deviates outside the specified limits (50.5 Hz on upper side and 47.5 Hz on lower side) up to 0.2 sec, the Photovoltaic systems shall automatically disconnect from grid and be in island mode.	
11	DC injection	Photovoltaic system shall not inject DC current greater than 0.5% of full rated output at the interconnection point or 1% rated inverter output current into distribution system under any operating conditions.	

SI No	Parameters	Requirements	Reference
12	Power Factor	While the output of the inverter is greater than 50%, a lagging power factor greater than 0.9 shall be maintained.	
13	Islanding and Disconnection	The photovoltaic system in the event of voltage or frequency variations must island/disconnect itself with the time stipulated as per IEC standards	
14	Overload and Overheat	The inverter should have the facility to automatically switch off in case of overload or overheat and should restart when normal conditions are restored	

29.8 The IEC Certifications of On-Grid Inverters are summarized below:

Standard	Description
IEC 61683	Photovoltaic systems - Power conditioners - Procedure for measuring efficiency
IEC 61727	Photovoltaic (PV) systems- Characteristics of the utility interface
IEC/EN 62109-1	Safety of power converters for use in photovoltaic power systems - Part 1: General requirements
IEC/EN 62109-2	Safety of power converters for use in photovoltaic power systems - Part 2: Particular requirements for inverters
IEC/EN 61000-3-3/ 3-11/ 3-5	Electromagnetic compatibility (EMC) - Part 3-11; Limits; Limitation of Voltage Change, Voltage Fluctuations and Flicker in Public Low- Voltage Supply Systems; Rated Current <16A / >16A and <75A / >75A per Phase respectively
IEC/EN 61000-3-2/ -3-12/ -3-4	Electromagnetic compatibility (EMC) - Part 3-12; Limits; Limits for Harmonic Currents produced by equipment connected to the public low voltage systems with Rated Current <16A / >16A and <75A / >75A per Phase respectively
*IEC/EN 61000-6-1 / 6-2	Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity standard for residential and commercial / industrial environments

Standard	Description
*IEC/EN 61000-6-3 / 6-4	Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for residential and commercial / industrial environments
IEC 62116	Utility-interconnected photovoltaic inverters - Test procedure of islanding prevention measures
IEC 60068-2-1	Environmental testing - Part 2-1: Tests - Test A: Cold
IEC 60068-2-2	Environmental testing - Part 2-2: Tests - Test B: Dry heat
IEC 60068-2-14	Environmental testing - Part 2-14: Tests - Test N: Change of temperature
IEC 60068-2-30	Environmental testing - Part 2-30: Tests - Test Db; Damp heat, cyclic (12 h + 12 h cycle)
IEC 62116 /IEEE 1547 or IEEE 1547.1 / UL 1741	Utility-interconnected photovoltaic inverters - Test procedure of islanding prevention measures

***Recommended but not mandatory**

30. BATTERY

The specifications of Battery are discussed below;

30.1 Technical Requirements

S/N	Parameters
1	Nominal Capacity (Ah) shall be rated @C10
2	Minimum Nominal voltage (V): 2 V / Lithium Ferro phosphate: 3.2 V
3	Self-discharge (less than 3% per month at 30°C)

30.2 General Specifications:

- i. Test certificate submitted should qualify the minimum requirements as per above standards for capacity test, ampere-hour efficiency test, watt-hour efficiency test, self-discharge test.
- ii. Battery (Lead Acid LMLA/Lead Acid -VRLA /Lead Acid GEL) shall have a Warrantee of minimum 5 years and Lithium Ferro Phosphate Battery shall have a warrantee of minimum 10 years
- iii. Battery capacity is rated C/10 at 27°C
- iv. Original Equipment Manufacturers (OEM) Warrantee of Battery shall be submitted

v. Major IS/IEC Certification for LMLA/VRLA / Lithium Ferro Phosphate batteries are listed below:

Standard	Description
IEC 61427	IEC 61427 - This series gives general information relating to the requirements for the secondary batteries used in photovoltaic energy systems (PVES) and to the typical methods of test used for the verification of battery performances.
IEC 60896	This part of IEC 60896 applies to all stationary lead-acid cells and Mono-block batteries of the valve regulated type for float charge applications, (i.e. permanently connected to a load and to a d.c. power supply), in a static location (i.e. not generally intended to be moved from place to place) and incorporated into stationary equipment or installed in battery rooms for use in telecom, uninterruptible power supply (UPS), utility switching, emergency power or similar applications.
IS 13369:1992	This standard specifies Ah capacities, voltage, overall dimensions, performance requirements and tests for stationary lead-acid units in Mono block container.
IS 1651:2013	This standard specifies rated Ah capacities, overall dimensions, performance requirements and tests for Stationary Lead Acid Cells and Batteries using Tubular Positive Plates
IS 15549:2005	This standard specifies capacities and performance requirements and corresponding test methods for all types of high integrity series stationary Valve regulated lead acid batteries.
IS 16046: 2015 / IEC 62133: 2012 ¹	Defines requirements and tests for the safe operation of portable sealed secondary cells and batteries containing alkaline or other non-acid electrolyte, under intended use and reasonably foreseeable misuse.
IEC 61056*	IEC 61056-1:2012 specifies the general requirements, functional characteristics and methods of test for all general-purpose lead-acid cells and batteries of the valve-regulated type
IS 16220*	IS 16220 defines the general requirements, functional characteristics and methods of test for all general-purpose lead-acid cells and batteries of the valve- regulated type.

Standard	Description
IEC 62133-2: 2017**	IEC 62133 requirements and tests for the safe operation of portable sealed secondary lithium cells and batteries containing non-acid electrolyte, under intended use and reasonably foreseeable misuse.
IEC 62620:2014**	IEC 62620 defines marking, tests and requirements for lithium secondary cells and batteries used in industrial applications including stationary applications.

31. MODULE MOUNTING STRUCTURE

- **Rooftop Installation**

Structures shall be of adequate size with sufficient strength for the individual structural members. IS 875 (Part 3)-1987, “Code for practice of design loads (other than earthquake) for buildings and structures,” is directly applicable to the design of PV module mounting structures.

- i. 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 sufficient spraying thickness, if steel frame is used. Aluminium frame structures with adequate strength and in accordance with relevant BIS standards can also be used.
- ii. Structures shall be supplied complete with all members to be compatible for allowing easy installation at the site.
- iii. The structures shall be designed to allow easy replacement of any module.
- iv. Each structure shall have a provision to adjust its angle of inclination to the horizontal as per the site conditions. Solar module should be inclined towards south direction and installed at an angle of 10° from the horizontal.
- v. Each panel frame structure shall be so fabricated as to be fixed on the roof top column/ wall structures/ground. The structure should be capable of withstanding a wind load of 150 km/hr after grouting and installation. The front end of the solar array must be 50 cm above the roof top.
- vi. The array structure shall support SPV modules at a given orientation and absorb and transfer the mechanical loads to the rooftop column properly.

- **Ground Mounted Installation**

- i. Photovoltaic arrays must be mounted on a stable, durable structure (with due consideration of aesthetic beauty of the project location) that can support the array and withstand wind, rain, hail and other adverse conditions. The mechanical structure shall be made up of hot-dip galvanized steel and designed to withstand gusts of wind / cyclonic wind up to 150 km/ Hour from back side of the panel. Stationary structures shall support SPV modules at a given orientation, absorb and transfer the mechanical loads to the ground properly.
- ii. The ground mounting structure design shall generally follow the existing land profile and the top of the table shall be in one plane.
- iii. The modules will be fixed on ground mounted structures with arrangement of manual tilting. Array support structure shall be fabricated using corrosion resistant hot dipped galvanized GI metal sections electrically compatible with the structural material. The mounting steel structure shall be as per latest BIS 2062 (amended up to date) and galvanisation of mounting structure shall be in compliance of BIS 4759 (amended up to date).
- iv. The array will be installed on steel racking structures that are anchored in the ground. Racks will be laid out in parallel matrices allowing for individuals to access the area between the racks for cleaning and other maintenance needs.
- v. The minimum clearance between lower edge of PV panel and ground level shall not be less than 0.6 m. In between the row of solar panels sufficient gap need to be provided to avoid falling of shadow of previous row on the next row. Seismic factors for the site will be considered while making the design of the foundation.
- vi. The tilt angle of the SPV panels shall be 10° - 13° to the horizontal surface facing true south direction. However, the module alignment & tilt angle shall be calculated to provide the maximum annual energy output. This shall be decided based on the location of array installation and bidder shall clearly indicate the details in the technical bid.
- vii. The materials used for structures shall be Hot dip Galvanized Mild Steel conformed to IS 2062:1992 or aluminium of suitable grade minimum alloy 6063 or better.

- viii. The minimum thickness of galvanization for hot dip Galvanized Mild Steel should be at least 120 microns as per IS 4759.
- ix. The Bolts, Nuts, fasteners, and clamps used for panel mounting shall be of Stainless-Steel SS 304.
- x. No Welding is allowed on the mounting structure
- xi. Aluminium structures used shall be protected against rusting either by coating or anodization.
- xii. The structure shall be designed to withstand operating environmental conditions for a period of minimum 25 years. And shall be free from corrosion while installation.
- xiii. PV modules shall be secured to support structure using Stainless Steel screw fasteners and/or metal clamps. Screw fasteners shall use existing mounting holes provided by module manufacturer. No additional holes shall be drilled on module frames. Module fasteners/clamps shall be adequately treated to resist corrosion.

32. SOLAR STRING COMBINER BOX, ACDB & DCDB

- **ACDB**

- i. AC Distribution Board (ACDB) shall control the AC power from inverter and should have necessary surge arrestors.
- ii. An ACDB panel shall be provided in between PCU and Utility grid. It shall have MCB/MCCB/ACB or circuit breaker of suitable rating for connection and disconnection of PCU from grid.
- iii. The connection between ACDB and Utility grid shall be of standard cable/ Conductor with suitable termination. It shall have provision to measure grid voltage, current and power.
- iv. The incomer shall be selected at required rating. The ACDB enclosure shall be of good protection and suitable for mounting on the trenches / on wall.
- v. All the 415 V AC or 230 V AC devices/equipment like bus support insulators, circuit breakers, SFU isolators (if applicable), SPD, etc. mounted inside the switch gear shall be suitable for continuous operation
- vi. Switches/ circuit breakers/ connectors meeting general requirements and safety measurements as per IS 60947 Part I, II, III and IEC 60947 part I, II and III.

vii. Junction boxes, enclosures, panels for inverters/ Controllers shall meet IP 54 (for outdoor)/ IP 65 (for indoor) as per IEC 529.

- **DCDB**

- i. DC bus/ cable which can handle the current and the voltage of inverter output safely with necessary surge arrester as per the relevant IS standards.
- ii. DC panel should be equipped with an adequate capacity indoor DC circuit breaker along with control circuit, protection relays, fuses, annunciations and remote operating and controlling facility from the main control facility.
- iii. DCDB shall have sheet from enclosure of dust and vermin proof, the busbar/ cables are to be made of copper of desired size. DCDB shall be fabricated to comply with IP 65 protection.

33. REMOTE MONITORING SYSTEMS INCLUDING WEATHER STATION

A dedicated data logging system (Hardware and software) for monitoring the plant shall be provided even if the inverter has embedded data logging system. The following weather parameters are to be measured as part of the datalogging system.

a) Solar Irradiance:

A Pyranometer/ Solar cell-based irradiation sensor (along with calibration certificate) shall be provided, with the sensor mounted in the plane of the array. Readout shall be integrated with data logging system.

b) Temperature: Integrated temp, sensors for measuring the module surface temp., inverter inside enclosure temp, and ambient temp to be provided complete with readouts integrated with the data logging system.

It is recommended that the following important parameters shall be accessible through the Data Logging Facility.

- a) AC Voltage
- b) AC Output current
- c) Output Power
- d) Energy in kWh
- e) DC Input Voltage

- f) DC Input Current
- g) Temperatures (C)
- h) Invertor Status
- i) Irradiation
- j) Module temperature
- k) String Voltage & Current (For PV Plants from 100kWp onwards)

Provision for Internet monitoring and download of historical data shall be incorporated. GSM Modem/Wi Fi modem in case GSM connectivity is used or Wireless Router + modem in case Ethernet connection is being used for remote access must be provided.

34. SOLAR ENERGY METER & NET METER

- i. Solar Energy Meter and Net meter as per CEA standards approved by the utility as per accuracy class has to be supplied.
- ii. A separate Energy Meter shall be provided at the output of PCU to record the energy generation from the solar system. (This energy meter should not be integrated with PCU). This has to calibrate and installed nearer to the Consumer meter board so that meter reader from Electrical utility could access while meter reader comes to record the meter reading, they have access to the solar meter. In case the solar meter cannot be installed near to the consumer meter board/Net meter facility, an additional display may be provided near the meter board utilising the communication protocols available within this meter.
- iii. The technical and general specifications of the meter being supplied must be at par with the requirements of the DISCOM – KSEBL. The detailed specifications are available in the KSEBL website - [https://www.kseb.in/index.php?option=com_tags&view=tag&layout=list&id\[0\]=38&Itemid=910&lang=en](https://www.kseb.in/index.php?option=com_tags&view=tag&layout=list&id[0]=38&Itemid=910&lang=en)

35. LT PANEL BOARD

- i. The Electrical LT panels must be fabricated in compliance with prevailing IE Rules and made of minimum 2 mm MS sheets and finished with powder coated

- equivalent to IS standard. The LT panels shall be erected above the ground level as directed. A suitable base frame shall be provided along with fabricated LT panel.
- ii. A Gland Plate at bottom shall be provided CRCA steel and the LT Panel shall be properly sealed to avoid entry of any insects, vermin, etc.
 - iii. Degree of protection – IP 55 or equivalent Indoor grade
 - iv. The Panel structure, base frame, cable glands and all steel parts shall be earthed properly as per standard. 2 Nos Earthing made of copper strip of standard size should be provided on either side of the panel to cater the Earthing requirement.
 - v. The Panel structure shall undergo SEVEN TANK process surface treatment and finished with powder coating of Siemens grey shade.
 - vi. Enamel Danger plates with signage shall be provided on the Panel inscribed in English & Malayalam languages as directed.
 - vii. Necessary signage plate should be provided/marked using metallic paint of desired color.
 - viii. Necessary metal plate signage should be provided for incomer breaker indicating capacity as directed by the employer
 - ix. The dimensions of the panels shall be designed liberally allowing suitable access for using the maintenance tools in all cubicles with minimum depth of the LT Panel has been considered as 600 mm.
 - x. Liberal clearances shall be maintained in all panel cubicles, bus bar chambers and cable alleys by considering the maintenance point of view as per standard.
 - xi. The panel builders are requested to furnish the drawings during detailed engineering and after the approval only the panel needs to be fabricated. ANERT have full right to make necessary corrections in the design.
 - xii. Electrical panels shall have finger touch protection, for human safety viz. working on one component shall not cause shock to the personnel due to any other live component in the panel. Also, the terminal live parts shall not be accessible by fingers (finger cannot come in contact with live parts of the terminals).
 - xiii. All the Bus bar shall be of hard drawn tinned copper material and are fitted on insulated DMC supports. Size of neutral bus bar should be same as that of phase bus bars. All bus bars and tapings shall be provided with heat shrinkable type

colour coded sleeves for phase identification. Bus bars should be designed such that maximum allowed current density will be 1.2 A/mm^2 .

- xiv. Stainless steel bolts / nuts to be used for bus bar chamber covers, panel coupling bolts and for earth bus bar connections.

36. MODULE CLEANING SYSTEMS

ANERT intends to list the vendors with adequate experience in the cleaning of SPV Modules capable of providing sophisticated solutions in both wet and dry mode of cleaning, anti-dust coating, automated cleaning solutions etc.

FORMAT FOR COVERING LETTER

(This letter to be submitted on the official letter head of the bidder, signed by the authorised signatory.)

Sir,

I/We hereby accept the terms and conditions of contract, the whole of the articles referred to and described in the attached specification and quantity decided by the Agency for New & Renewable Energy Research and Technology (ANERT), at the rates quoted against each item.

I am/We are remitting herewith the required amount of Rs. towards the Registration Fee by electronic payment vide transaction No
dtd.....

Yours faithfully,

Place:

Signature

Date:

Name

Designation

(Office Seal)

ANNEXURE A – SUMMARY OF BID QUALIFICATION REQUIREMENTS

(To be filled in by the bidder)

1.	Name of the bidder	
2.	Address in full	
3.	Contact Details <div style="text-align: right;">Mobile: Land Phone Fax Email</div>	
4.	Name and Designation of the authorised signatory	
5.	Type of Firm Whether Proprietary / Limited Company/ PSU	
6.	GST Registration of the bidder	
7.	Whether the bidder is a bonafide manufacturer of the item (Yes/No)?	
8.	Details of EMD submitted along with the bid in favour of CEO ANERT	
9.	Annual turnover of the firm during last five years (Rs.) (Proof to be enclosed)	2020-21 2019-20 2018-19 2017-18 2016-17

10.	Whether Manufacturing Plant qualifies to any international Standards (ISO 9000 / ISO 14000 / Any other Standards)			
11.	No. of service centres /Authorised service providers in Kerala (Proof to be enclosed)			
12.	Name of the contact person of Service Assistance Unit / Service Partner Address Mobile No. Email ID			
13.	Annual Capacity of manufacturing			
14.	Actual production in the last three years.	2018-19	2019-20	2020-21
15.	Agreement submitted (Yes/ No)?			
16.	Whether Bidder was/is De-barred by ANERT/any other Govt. agency (Yes/No)? If 'Yes' period of De-Barring:			

Documentary evidence for the bid qualification requirements are submitted along with this document and the details furnished above are true and correct.

Signature
of authorised signatory

Name

Designation

Date:

(Office seal)

ANNEXURE B – TECHNICAL PARAMETERS

iv. PV Modules

Make: -

Model: -

Data Set at Standard test conditions (STC)

S/N	Parameters	Data/ Values
1.	Nominal power output (W)	
2.	Voltage at P _{MAX} V _{MPP} (V)	
3.	Current at P _{MAX} I _{MAX} (A)	
4.	Open-circuit voltage V _{OC} (V)	
5.	Short-circuit current I _{SC} (A)	

Module General Characteristics

S/N	Parameters	Data/ Values
1	Module dimensions L X W X H (mm)	
2	Module weight (Approx..) kg	
3	Number of cells and size (mm)	
4	No. of Bus bars in a cell	
4	Frame material	
5	Glass (type)	
6	Junction box (IP rating)	
7	Cable connector (Type/ Model name)	

Note:

The manufacturers must submit the above technical parameters for each Product (one form can be submitted for a particular series)

Fill the appropriate data based on the product quoted (Mono/ Poly crystalline/ Thin -film/ Mono -PERC/ Half-Cut/ Bi Facial)

v. Solar Inverters

Make: -

Model: -

Parameters	Value
Max. Input DC Power	
Max. Input Voltage	
MPP voltage range/rated input voltage	
Rated output power	
Nominal AC voltage	
Max. output current	
Power factor at rated power	
Max. efficiency/ European efficiency	
Dimensions in mm (W/H/D)	
User Interface: (RS 485 or any others)	
Warranty (years)	
Mention the IEC/IS Certifications for the product Please attach IEC/ IS certifications as Annexure 8.	
Data sheet of each product attached or not (Yes/ No). Please attach the data sheet (s) as Annexure 9	

Enclose Data Sheet along with each product

vi. Battery

Make: -

Model: -

Electrical Parameters

SI No:	Parameters	Data/ Values	Remarks
1	Nominal Capacity (Ah) @C10		
2	Nominal voltage (V)		
3	Nominal Voltage per Cell (V)		
4	Float Voltage		
5	Temperature compensation required for proper operation		

Mechanical Characteristics

S/N	Parameters	Data/ Values	Remarks
1	Dimensions L X W X H (mm)		
2	Weight (kg)		
3	Operating temperature (X)		
4	Shelf Life		

Note:

- i. The bidders must submit the above parameters of Battery (Separate copies shall be submitted for each Battery Product)*
- ii. The lithium-ion battery manufacturers shall fill the appropriate columns and shall add more parameters if necessary.*

ANNEXURE C – LIST OF MODELS TO BE LISTED

vii. Battery

SL No:	Make	Model	Type of Battery (VRLA - Gel OR Lithium Ferro Phosphate)	IEC 61427	IEC 60896	IS 13369: 1992	IS 15549: 2005	IS 1651: 2013	*IS 16220	*IEC 61056	**IEC 62133 2:2017	IS 16046:2 015 / IEC621 33:2012	**IEC 62620: 2014	Datash eet)
1														
2														
..														
..														
n														

**Recommended / **IEC Certifications for Lithium Ferro Phosphate / Note: Please tick the IEC certifications submitted along with the corresponding make.*

viii. PV Modules

SL No:	Make	Model	*IS 14286	IEC 61215 / IEC 61646	IEC 61730-1	IEC 61730-2	IEC 61701	IEC 62716	Datasheet
1									
2									
..									
..									
n									

**Recommended / Note: Please tick the IEC certifications submitted along with the corresponding make.*

ix. Inverter

Sl. No	Make	Model	On-Grid/ Off-Grid/ Hybrid	IEC 61683	IEC 61727 or Equivalent	IEC 62109 1 (Or Eq. EN Certification)	IEC 62109 -2 (Or Equi. EN Certification)	*IEC 6100 0 -6- 1 / 6-2	*IEC 61000 -6-3 /6- 4	IEC 61000-3-3/ 3-11/ 3-5 (Or Equi. EN Certification)	IEC 61000-3-2/ -3-12/ -3-4 (Or Equi. EN Certification)	IEC 62116/ UL 1741 / IEEE 1547. 1	IEC 60068 2-1	IEC 60068 -2-2	IEC 60068 2-14	IEC 60068 -2-30	Data sheet		
1																			
2																			
..																			
..																			
n																			

**Recommended only; not mandatory
/ Note: Please tick the IEC certifications submitted along with the corresponding make.*

ANNEXURE D - AGREEMENT

ARTICLES OF AGREEMENT executed on this the day of
Two thousand andbetween the **Agency for
New & Renewable Energy Research and Technology** (hereinafter referred to as
ANERT) of the one part and Sri
(Name and Address of the bidder) hereinafter referred to as “the Bounden”) of the other
part.

WHEREAS in response to the Notification No.
dated the bounden has submitted to ANERT the bid for the ***Expression of
Interest (EoI) for Registration of OEMs for supply of components for Solar Projects
implemented by ANERT*** specified therein subject to the terms and conditions contained
in the said EoI.

AND WHEREAS the bounden has furnished to ANERT a sum of Rs. as
Earnest Money Deposit for execution of an agreement undertaking the due fulfilment of
the contract in case his EoI is accepted by ANERT. NOW THESE PRESENTS WITNESS and
it is hereby mutually agreed as follows: -

In case the EoI submitted by the bounden is accepted by ANERT and the contract
for is
awarded to the bounden, the bounden shall within Fifteen days of acceptance of this EoI,
execute an agreement with ANERT incorporating all the terms and conditions under
which ANERT accepts this EoI.

In case the bounden fails to execute the agreement as aforesaid incorporating the terms
and conditions governing the contract, ANERT shall have power and authority to recover
from the bounden any loss or damage caused to ANERT by such breach as may be
determined by ANERT by appropriating the moneys inclusive of Earnest Money deposited
by the bounden and if the Earnest Money is found to be inadequate the deficit amount may

be recovered from the bounden and his properties movable and immovable in the manner hereinafter contained.

All sums found due to ANERT under or by virtue of this agreement shall be recoverable from the bounden and his properties movable and immovable under the provisions of the Revenue Recovery Act for the time being in force as though such sums are arrears of land revenue and in such other manner as ANERT may deem fit.

In witness whereof Sri (Name and Designation) for and on behalf of the Agency for New & Renewable Energy Research & Technology and Sri the bounden have hereunto set their hands the day and year shown against their respective signature.

Signed by Sri

Signed by Sri

(Date)

(Date)

in the presence of witnesses

in the presence of witnesses

1.

1.

2.

2.

ANNEXURE E – DECLARATION BY THE BIDDER

EoI Notification No:, dtd for
Expression of Interest (EoI) for Registration of OEMs for supply of components for Solar
Projects implemented by ANERT

To

The CEO
ANERT

We, the undersigned, declare that:

1. We have examined and have no reservations to the Bidding Document, including Addenda No.: (if any)
2. We offer to supply in conformity with the Bidding Document and in accordance with the delivery schedule
3. Our Bid shall be valid for a period of 13 months from the date fixed as deadline for the submission of EoI in accordance with the Bidding Document, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
4. If our Bid is accepted, we commit to submit a Security Deposit in the amount of 5 percent of the Contract Price for the due performance of the Contract;
5. We are not participating, as Bidders, in more than one Bid in this bidding process;
6. Our firm, its affiliates or subsidiaries, including any subcontractors or suppliers for any part of the Contract, has not been declared ineligible by the ANERT or Government of Kerala;
7. We understand that this Bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal Contract is prepared and executed.
8. Our firm has obtained the certifications from MNRE or NABL approved Test laboratories that the goods and services are satisfying the technical criteria specified in the bid.

Signature

Date

Name

ANNEXURE F – DECLARATION OF RELATIONSHIP WITH ANERT EMPLOYEE

(to be signed and submitted by the bidder along with the bid)

EoI Notification No.:

Expression of Interest (EoI) for Registration of OEMs for supply of components for Solar Projects implemented by ANERT

To

The CEO
ANERT

Name of the ANERT employee with Designation:

Name of the bidder related to the employee:

This is to put on record that Shri/Smt
currently working as in ANERT is related
to, who is the bidder in the bid. We are aware of
the Anti-corruption policy of ANERT and will observe the highest standards during the
procurement and the execution of contract and shall retain from corrupt, fraudulent,
collusive or coercive practices on competing for the contract.

Signature

Name

Date

FORMAT B – UNDERTAKING BY OEM

(To be submitted in Original on Letterhead)

Date:

**THE CEO
ANERT
THIRUVANANTHAPURAM**

Sub: Undertaking by Original Equipment Manufacturer against NIT No. ANERT-TECH/dd/2021-PE1(RTS) dtd _____

Dear Sir,

We, M/s _____ (*Name of the OEM*) having registered office at _____ (*address of the OEM*) by virtue of being original equipment manufacturer for _____ (*Name of the product/s*), *hereby authorize M/s* _____ (*Name of the bidder*) having their office at _____ (*Address of bidder*) to submit quote on our behalf for the “*Rate Contract for Listing of Solar Power Plant components through ANERT e-marketplace (www.BuyMySun.com) for supply all over the State of Kerala*”.

We do hereby authorize M/s. (Name and address of Agent) to submit a bid, negotiate and receive the order from you against your document enquiry. No company or firm or individual other than M/s. _____ is authorized to bid, and conclude the contract in regard to this business.

We hereby extend our full guarantee and warranty as per the document clauses along with all other General and Special Conditions of Contract for the goods and services offered by the above firm.

The undersigned is authorised to issue such authorisation on behalf of M/s

(Name of the OEM).

For M/s_____ (Name of the OEM)

Signature & company seal

Name

Designation

Email

Mobile No.

FORMAT B – UNDERTAKING FOR NO BLACKLISTING & NO BANNING

(To be provided on Rs.200 Non-Judicial Stamp paper. In Case of JV the following format is to be provided by Each Member of the Joint Venture on their respective letterhead, signed by respective authorized Signatory along with Authorized Signatory for which POA is attached with Bid))

Undertaking for No Blacklisting & No Banning

To

The CEO
ANERT

Sub: Expression of Interest (EoI) for Registration of OEMs for supply of components for Solar Projects implemented by ANERT

I / We hereby declare that presently our Company/Limited Liability Partnership/ Partnership Firm/ Sole Proprietorship is having unblemished record and is not declared ineligible for corrupt/fraudulent practices by any State/Central Government/PSU on the date of Bid Submission.

I / We further declare that presently our Company/Limited Liability Partnership/ Partnership Firm/ Sole Proprietorship is not blacklisted and not declared ineligible for reasons other than corrupt/fraudulent practices by any State/Central Government/PSU on the date of Bid Submission.

If this declaration is found to be incorrect then without prejudice to any other action that may be taken, our security may be forfeited in full and the document if any to the extent accepted may be cancelled.

(Signature & Seal of Authorized Signatory for which POA attached)

Name of Authorized Signatory:

Designation:

Date:

Place:

FORMAT C – CERTIFICATE OF BIDDER’S FINANCIAL QUALIFICATION

(On Letterhead of the respective entity for which the below details are provided.)

Financial Qualification Certificate

(Rupees in Lakhs)

S/N	Financial parameters	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20
1.	Net Worth					
a)	Paid up Capital					
b)	Free Reserves and Surplus*					
c)	Misc expenses to the extent not written off					
	Net Worth (a+b-c)					
2.	Annual Turnover **					

* Free Reserve and Surplus shall be Exclusive of Revaluation Reserve, written back of Depreciation Provision and Amalgamation.

** Annual total Income/ turnover as incorporated in the Profit and Loss Account excluding non-recurring income, i.e., sale of fixed asset etc.

It is certified that all the figures are based on audited accounts read with auditors report and Notes to Accounts etc.

(Signature & Seal of Authorized Signatory

Name of Authorized Signatory:

Designation:

Date:

Place:

Certifying Chartered Accountant:

Name of Firm:

UDIN No:

Date:

Place:

Note:

1. In addition to above certificate from Chartered Accountant, Bidder is required to submit Firm's Annual Audit Report, Balance sheet, Profit & Loss and Income Tax Returns / CA certificate for last Five years i.e., F.Y: 2016-17, 2017-18, 2018-19, 2019-20 & 2020-21.