Rate Contract tender for Supply, Installation, Commissioning and 5 years Comprehensive Maintenance of Grid Connected Rooftop Solar Power plants for a cumulative capacity of 10MWp in various Government buildings, Tamil Nadu under CAPEX model.

Tender reference: 1079/TEDA/GB-CAPEX/2022 dated 14.04.2022

Issued by:
Tamil Nadu Energy Development Agency,
E.V.K. SampathMaaligai,
5th Floor, No. 68, College Road,
Chennai 600 006.
Phone: 044 – 28242800
Email: tender@teda.in, dgm2@teda.in
Website: www.teda.in

CONTENT OF THE BID DOCUMENT

SECTION -A	**TENDER ELIGIBILITY & INSTRUCTIONS**
SECTION –B	**BID SUBMISSION & EVALUATION**
SECTION-C	**AWARD & EXECUTION**
SECTION-D	**TECHNICAL SPECIFICATIONS**
SECTION-E	**FORMATS & ANNEXURES**

ACRONYMS		
Sl.No.	**Parameter**	**Details**
1.	AC	Alternating Current
2.	BIS	Bureau of Indian Standards
3.	BoS	Balance of System
4.	CMC	Comprehensive Maintenance Charges
5.	DC	Direct Current
6.	IEC	International Electro Technical Commission
7.	MPPT	Maximum Power Point Tracking
8.	NABL	National Accreditation Board for testing and calibration Laboratories
9.	PCU	Power Conditioning Unit
10.	PWM	Pulse Width Modulation
11.	RFID	Radio Frequency Identification
12.	STC	Standard Testing Conditions
13.	THD	Total Harmonic Distortion

SHORT TITLES USED IN THE TENDER DOCUMENT

1.	Bidder	Bidder means the party who makes a formal offer in pursuance of the Tender floated
2.	Successful Bidder	Successful Bidder means the bidder who becomes successful through the Tender process.
3.	Day	A day means a calendar day
4.	Testing Agency	Testing Agency notified by TEDA for the purpose of sample testing.
5.	Cost	Cost means the total cost to be incurred towards the supply, installation, commissioning and 5 years comprehensive Maintenance of grid Connected rooftop SPV Systems.
6.	Purchaser	Purchaser means the Government of Tamil Nadu for whom the procurement is made through this Tender.
7.	TEDA	Tamil Nadu Energy Development Agency - the Procurement agency on behalf of Government of Tamil Nadu
8.	Commissioning	Commissioning means the grid Connected plants would have to be energized through SPV system and the functioning has to be tested.
9.	End user	End user means the beneficiary to whom Grid Connected Rooftop solar system is provided.

Applicability of Tamil Nadu Transparency in Tenders Act 1998

This Tender process will be governed by The Tamil Nadu Transparency in Tenders Act 1998 and The Tamil Nadu Transparency in Tenders Rules, 2000 (http://www.tn.gov.in/gorders/fin446-e.htm) as amended from time to time.

CHECKLIST FOR ENCLOSURE

(Bidder shall fill up YES or NO without fail)

Sl.No.	Bid Enclosure	YES or NO	Page No.
1.	Whether the Tender is submitted in Two covers (Techno Commercial Bid and Price Bid)?		
2.	Whether Two covers are put into an outer cover?		
3.	**Whether Technical Bid (Envelope- A) contains the following**		
3.1	Earnest Money Deposit (EMD) amount as specified in the Tender or undertaking in lieu of EMD as per Format F5 with NSIC/SSI/MSME.		
3.2	Bidder's undertaking covering letter as per Format F2 in the Letter Head signed by the authority & stamped.		
3.3	Signed and stamped Letter of Authorization (or) Power of Attorney for signing the Tender document.		
3.4	All pages of the blank Tender document in full signed by the authority & stamped.		
3.5	Filled up Technical Bid signed by the authority & stamped		
3.6	**Supporting documents to meet the Eligibility Criteria** All documents shall be in English only. Documents in any other language shall be accompanied by an accurate translation in English, duly notarized and signed by the authority and stamped in all pages		
	a) Bidder's Certificate of Incorporation / Registration - Enclosed		
	b) Bidder's undertaking for supplying entire quantity called for in the Tender as per Format F3 - Enclosed		
	c) Necessary undertaking by the bidder for using only SPV modules & Cells manufactured in India		
	d) Balance Sheet and Profit & Loss accounts for all three audited years from 2018-19 to 2020-21		

Sl.No.	Bid Enclosure	YES or NO	Page No.
	e) Copy of Work Orders along with proof for satisfactory performance of that work- Enclosed		
	f) Bidder's undertaking letter for not currently blacklisted - Enclosed.		
4.	**F.1 Techno Commercial Bid Format (Envelope-A)**		
5.	**Whether Price Bid (Envelope-B) contains the following**		
	a) Filled Price Bid with signature and stamp in all pages.		
	b) Whether corrections or overwriting if any is attested?		
6.	Whether Bid documents are page numbered & bounded		

IMPORTANT NOTE:

Bidder must ensure that they have submitted all the required documents indicated in the Tender document without fail. Bids received without supporting documents for the various requirements mentioned in the tender document are liable to be rejected. The data sheet for the critical components shall be submitted by the Bidder for scrutiny.

Bid documents shall be page numbered & bound. Any loose/ unbound documents or documents which are not page numbered are liable for rejection.

SECTION –A
TENDER ELIGIBILITY AND INSTRUCTIONS

INTRODUCTION

TEDA on behalf of the various Government Departments in Tamil Nadu calls for Competitive Bidding tender for Supply, Installation, Commissioning and 5 years Comprehensive Maintenance of Grid Connected Rooftop Solar Power plants for a cumulative capacity of 10MW based on the procedures stipulated in the Tamil Nadu Transparency in Tenders Act 1998 and Tenders Rules 2000.

The generated solar power from the power plant will be consumed in the premises and the excess power if any, can be fed into the grid as per the grid Connectivity norms specified in existing TNERC orders and as amended from time to time.

The Successful Bidder shall work closely with TEDA and Government Departments in Tamil Nadu involved in implementing the above work and ensure the success of the Programme, by completing the installations from the date of granting permission by the concerned officials for carrying out the works. The project pertains to a clean/ RE project (Solar Energy) intended to reduce carbon emissions.

2. TENDER DATA SHEET		
1	Tender inviting Authority, Designation and Address	The General Manager Tamil Nadu Energy Development Agency 5th Floor, EVK Sampath Maaligai, No.68, College Road, Chennai-600006 (INDIA) Phone: +91-44-28242800 Fax: +91-44-28222971 Email: tender@teda.in , dgm2@teda.in Website: www.teda.in
2	a) Name of the Work	Rate Contract tender for Supply, Installation, Commissioning and 5 years Comprehensive Maintenance of Grid Connected Rooftop Solar Power plants for a cumulative capacity of 10MW in various Government buildings, Tamil Nadu.
	b) Tender Reference	Tender reference: **1079/TEDA/GB-CAPEX/2022 dt: 14.04.2022**

	c) Place of execution	Various Government Department Buildings
3	a) Tender documents available place and date for obtaining tender	On all working days between 11.00 A.M. and 5.00 P.M. upto 24.05.2022 at TEDA office. Alternatively, Tender documents can be downloaded at free of cost from www.teda.in and www.tenders.tn.gov.in
	b) Cost of Tender Document	Rs.1000/-(Rupees One Thousand only) per Tender Document for direct purchase from TEDA. The Tender document may also be downloaded at free of cost.
4	**Earnest Money Deposit (EMD).**	**Rs.10,00,000/-** [EMD] has to be paid in Indian Rupees by towards way of Demand Draft or Banker's Cheque only, from any of the Nationalized/ Scheduled banks, drawn in favour of "Tamil Nadu Energy Development Agency" and payable at Chennai only. EMD submitted in any other forms will be SUMMARILY REJECTED.
5	Tender Processing Fee(TPF)	**Rs.10,000/-**plus 18%. TPF has to be paid in Indian Rupees by towards way of Demand Draft or Banker's Cheque only, from any of the Nationalized/ Scheduled banks, drawn in favour of "Tamil Nadu Energy Development Agency" and payable at Chennai only. TPF submitted in any other forms will be SUMMARILY REJECTED.
6	Pre-Bid meeting date time and place	On 05.05.2022 @ 3.00 P.M. at TEDA office.
7	Due Date, Time and Place of submission of Tender	On 25.05.2022 up to 03:00 P.M. at TEDA office.
8	Date, Time and Place of Tender opening	On 25.05.2022, 03:15 P.M. at TEDA office.
9	Date, Time and Place of opening of Price Bids	Will be intimated only to the bidders qualified in Techno commercial bid.
*__If any one of the above dates happens to be a holiday, next working day will be the due date__.		

3. TENDER COST AND EMD

3.1 Cost of Bidding

The Bidders shall bear all costs associated with the preparation and submission of Bids. TEDA will in no way be responsible or liable for these charges/costs incurred regardless of the conduct or outcome of the bidding process.

3.2 Tender Document Fee

a) The Tender documents may be purchased from the office of TEDA on payment of fee for the same in Indian Rupees as mentioned in the Tender Data sheet. The Tender document is not transferable to any other Bidder.

b) The Tender document cost may be paid by way of cash (or) Demand Draft /Banker's Cheque in favour of "**Tamil Nadu Energy Development Agency**", payable at Chennai for direct purchase from TEDA.

c) Alternatively, the Tender document can be downloaded atfree of cost from the website mentioned in the Tender data sheet.

3.3 Earnest Money Deposit (EMD)

a) An EMD amount as specified in the Tender Data sheet shall be paid in Indian Rupees in the form of Demand Draft/ Banker's Cheque only, from any of the Nationalized/ Scheduled banks, drawn in favour of "**Tamil Nadu Energy Development Agency**" payable at Chennai.EMD submitted in any other forms will be SUMMARILY REJECTED.

b) The EMD shall be kept in the Techno Commercial Bid Cover.

c) The EMD amount of the bidders not qualified in the Techno commercial bid will be refunded immediately, after rejection of their techno-commercial bid. The EMD amount of the bidders qualified in the techno commercial bid but not successful, will be refunded after finalization and signing of agreement with the successful bidder. The EMD amount held by TEDA, till it is refunded to the Bidders will not earn any interest thereof.

d) The EMD amount paid by the Successful Bidder will be adjusted towards Security Deposit payable by them. If the successful Bidder submits Security Deposit for the stipulated value in full in the form of DD/ Banker's Cheque, the EMD will be refunded.

e) The EMD amount will be forfeited by TEDA, if the Bidder withdraws the bid during the period of its validity specified in the tender or if the successful bidder fails to sign the contract or the successful bidder fails to remit the Security Deposit within the due date.

f) The bids received without the specified EMD amount will be **SUMMARILY REJECTED.**

g) For the categories of industries exempted from payment of Earnest Money Deposit, see Annexure-1.

h) Industries exempted from payment of EMD shall enclose duly attested Photostat copy of their Registration Certificate showing the materials viz.SPV Panels, PV System Electronics(Inverter only) they are permitted to manufacture/to do services as a system integrator of solar plants and the period of validity of the certificate as proof of eligibility for exemption from payment of EMD.

i) Those Bidders who are exempted from payment of EMD shall furnish in lieu of EMD an under taking in a non-judicial stamp paper of value not less than Rs. 80.00 (Rupees Eighty only) in the prescribed format (as per Format-5), to the effect to pay penalty an amount equivalent to EMD in the event of non-fulfillment or non-observance of any of the conditions stipulated in the contract consequent to such breach of contract.

j) Undertaking and proof of exemption of EMD shall be kept in the Techno commercial bid cover as specified Section –E (Annexure-1). TENDERS RECEIVED WITHOUT PROOF FOR EXEMPTION OF EMD AND UNDERTAKING WILL NOT BE READOUT AND WILL BE SUMMARILY REJECTED.

3.4 Tender Processing Fee

a) Tender Processing Fee (TPF) as specified in the Tender Data sheet shall be paid in Indian Rupees in the form of Demand Draft/ Banker's Cheque only, from any of the Nationalized/ Scheduled / Foreign banks, drawn in favour of "**Tamil Nadu Energy Development Agency**" payable at Chennai. TPF submitted in any other forms will be SUMMARILY REJECTED.

b) The TPF shall be kept in the Techno Commercial Bid Cover.

c) The TPF amount of the bidders will not be refunded.

d) The bids received without the specified Tender Processing Fee will be **SUMMARILY REJECTED.**

4 TENDER ELIGIBILITY CRITERIA

The details of eligibility requirements are provided in the table below. It is the bidder can be sole/single bidder (legal Entity) that must satisfy the eligibility and qualification criteria.

1) Eligibility Category for General Category

S.No	Minimum Eligibility Criteria	Proof to be submitted for fulfilling eligibility criteria
1	**General**	
1a	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. Body incorporated in India under the Limited Liability Partnership (LLP) Act, 2008 including any amendment thereto; OR c. Firm registered under Partnership Act, 1932 in India; OR d. Sole Proprietor firm	Certificate of Incorporation or Registration shall be submitted
1b	The Bidder must have the required GST Registration.	Copy of GST registration certificate with legible GSTIN shall be submitted
1c	The Bidder must have valid PAN Number.	Copy of Pan Card shall be submitted
1d	Bidder shall submit the No conflicts of interest in Rate Contract tender	Necessary undertaking by the bidder in their Letter Head to this effect shall be submitted

1e	Bidder shall not be currently blacklisted by any of the State or Central Government organizations or undertakings of the State or Central Government or Union Territories of India as on date of submission of tender.	Necessary undertaking by the bidder in their Letter Head to this effect shall be submitted
2	**Financial**	
2a	The financial statements for the last three (3) years shall be submitted and must demonstrate the current soundness of the Bidder's financial position and indicate its prospective long-term profitability. As a minimum requirement, a Bidder's net worth calculated as the difference between total assets and total liabilities should be positive for each of the last three (3) Financial Years (FY18-19, FY19-20 and FY20-21,).	Auditor Certificate shall be furnished
2b	The Minimum average Annual Turn Over (MAAT) in the immediate preceding three completed financial years should not be less than ₹ 50 lakhs.	a) Balance Sheet b) Profit & Loss accounts of all the three audited years from 2018-19 to 2020-21 shall be submitted towards meeting annual turnover criteria
3	**Technical**	
3a	Bidder shall have experience of execution of design, supply, installation and maintenance of Grid-connected (10 kW and above) SPV systems, having a cumulative capacity of 500kW spread across India during the last five years (i.e., 2016-17 to 2020-21).The bidder works shall have been executed under SNA / Govt. Organization /PSU only	Copies of the Commissioning Certificates and corresponding work orders/Contracts/Agreements from the SNA/Govt. organization/PSUs as proof of credential of the bidder in this regard shall be submitted.

3b	The Bidder shall use a Solar PV cell **[**domestically manufactured only if the same has manufactured in India, using undiffused silicon wafer (generally called black wafer) classifiable under customs Tariff Head 3818 and all steps /processes required for manufacturing solar PV cell from the un diffused silicon wafer have been carried out in India**]** and SPV modules manufactured in India and should be in MNRE ALLM List.	Necessary undertaking by the bidder in their Letter Head to this effect shall be submitted.
3c	The Bidder shall submit the test certificates /Reports viz .,module, Inverter fuses, surge arrestor ,cables ,Junction boxes, Earthing & Lightining arrester along with the Security Deposit. The components shall be allowed only if those components have been certified by any NABL/IECQ accredited laboratories for compliance to the stipulated technical specifications as per Section - D of this tender	Necessary undertaking by the bidder in their Letter Head to this effect shall be submitted.

5 INSTRUCTIONS TO THE BIDDER

5.1 General Instructions

a) It will be imperative for each Bidder to familiarize himself with the prevailing legal situations for the execution of contract. TEDA shall not entertain any request for clarification from the Bidder regarding such legal aspects of submission of the Bids.

b) It will be the responsibility of the Bidder that all factors have been investigated and considered while submitting the Bids and no claim whatsoever including those of financial adjustments to the contract awarded under this tender will be entertained by TEDA. Neither any time schedule nor financial adjustments arising thereof shall be permitted on account of failure by the Bidder to appraise themselves.

c) The Bidder shall be deemed to have satisfied himself fully before Bidding as to the correctness and sufficiency of its Bids for the contract and price quoted in the Bid to cover all obligations under this Tender.

d) It must be clearly understood that the Terms and Conditions and specifications are intended to be strictly enforced. No escalation of cost in the Tender by the Bidder will be permitted throughout the period of Agreement or throughout the period of completion of contract whichever is later on account of any reasons whatsoever.

e) The Bidder shall make all arrangements as part of the contract for Supply, Installation, Commissioning and 5 years Comprehensive Maintenance of Grid Connected Rooftop Solar Power plants in various Government buildings as per tender.

f) The Bidder shall be fully and completely responsible to TEDA and various Government Departments for all the deliveries and deliverables. The bidder shall be responsible for the proper functioning of the finally erected systems.

g) All Statutory obligations/liabilities like Salary, ESI, P.F., as per Labor Laws for the persons employed for this contract will be the responsibility of the bidder. TEDA will not make any direct payment thereof and will not be responsible for any lapses by the bidder.

h) The bidder has to have adequate field service setup within 200km to provide good service after installation including necessary repair and maintenance. Service Centre address with contact number & contact person to be given by the installer along with the invoice otherwise the invoice is invalid.

i) The solar Power plant drawing shall be prepared and submitted for approval of CEIG. Wherever approvals of CEIG are required and the necessary charges for the same will have to be borne by the bidder.

5.2 Language of the Bids

The bid prepared by the Bidder as well as all correspondence and documents relating to the bid shall be in **English only**. The supporting documents and printed literature furnished by the Bidder in any other language shall necessarily be accompanied by an accurate translation in

English duly notarized, in which case, for all purposes of the Bid, the translation shall govern. **Bids received without such translation copy will be rejected.**

5.3 Bid Currency

Price shall be quoted in Indian Rupees (INR) only and Payment shall be made in Indian Rupees only.

5.4 Clarifications and Amendments

a) A prospective Bidder requiring any clarification in the Tender may address TEDA by Registered post or by personal delivery under acknowledgement. No clarifications will be offered by TEDA within48 hrs prior to the date and time of opening of the Tender.

b) A pre-bid meeting will be held, for addressing the clarifications on the date and time mentioned in the Tender Data sheet or any other date decided by TEDA. The Bidders are requested to participate in the Pre-bid meeting for clarifications.

c) Before the opening date of the Tender, the modifications or amendments and /or corrigendum if any will be notified in the Government/TEDA website address mentioned in the Tender Data sheet. The Bidder's shall periodically check for the clarifications or information in the website till the opening date of this Tender. TEDA is not responsible for any misinterpretation of the provisions of this tender document on account of the Bidder's failure to update the Bid documents based on changes announced through website / Individual Communication.

5.5 Contacting Tender Inviting Authority

a) Bidders shall not make attempts to establish unsolicited and unauthorized contact with the Tender Inviting Authority or Tender Accepting Authority after the opening of the Tender and prior to the notification of the Award and any attempt by any Bidder to bring, to bear extraneous pressures on the Tender Inviting/Evaluation/

Scrutiny/ Accepting Authority may lead to disqualification of the Bidder.

b) Notwithstanding anything mentioned above, the Tender Inviting/Evaluation/ Scrutiny/ Accepting Authority may seek bona-fide clarifications from Bidders relating to the tenders submitted by them during the evaluation of tenders.

5.6 Force Majeure

Neither TEDA nor the Successful Bidder(s) shall be liable to the other for any delay or failure in the performance of their respective obligations due to causes or contingencies beyond their reasonable control such as:

Natural phenomena including but not limited to earthquakes, floods and epidemics.

Acts of any Government authority, domestic or foreign including but not limited to war declared or undeclared, priorities and quarantine restrictions.

Accidents or disruptions including, but not limited to fire, explosions, breakdown of essential machinery or equipment, power and water shortages.

5.7 Arbitration

Incase of any dispute, the matter will be referred to a sole Arbitrator to be appointed by the Chairman and Managing Director of TEDA under the "Arbitration and Conciliation Act 1996". The arbitration shall be held in Chennai, India and the language shall be English only. Subject to the above, the Courts at Chennai alone only shall have jurisdiction in the matter.

5.8. Bar of Jurisdiction

Save as otherwise provided in Tamil Nadu Transparency in Tender Act 1998, no order passed or proceeding taken by any officer or authority under this act shall be called in question in any Court and no injunction shall be granted by any court in respect of any action taken or to be taken by such officer or authority in pursuance of any power conferred by or under the above Act.

5.9. Blacklisting

1. Under no circumstances shall a Bidder alter his price during the validity period and backsout after Tenders are opened. Any Bidder who does so, resulting in recalling of tenders by TEDA or any additional expenditure to TEDA/Government Department(s), shall not only lose his EMD but will also be blacklisted by TEDA which reserves the right under the law to recover damages resulting there from, in addition to forfeiture of EMD.
2. Under no circumstances shall the bidder backs out after the award of work. The contractor who does so, resulting in recalling of tenders by the TamilNadu Energy Development Agency due to which additional expenditure incurred if any by TamilNadu Energy Development Agency/Government Department(s),will not only lose his EMD/SD and also will be blacklisted by TamilNadu Energy Development Agency/ Government Department(s), Tamil Nadu which reserves the right under the law.
3. The Bidder will be banned from all business dealings with TEDA if the particulars produced by him/her such as Auditor Certificate, Annual Account, GST and Test Certificate furnished by him/her are found to be false.
4. The Successful bidder shall be liable to make good the loss by replacing the defective product during the warranty period for the entire system free of cost, failing which TEDA will deduct the amount retained by them as per payment terms and will blacklist the bidder.

Section-B
Bid Submission and Evaluation

6 BID PREPARATION

Bidders shall examine all Instructions, Terms and Conditions and Technical specifications as given in the Tender document. Failure to furnish information required by the Bid or submission of Bids not substantially responsive or viable in every aspect will be at the Bidder's risk and may result in rejection of Bids. Bidders shall strictly submit the Bid as specified in the Tender, failing which the bids will be held as non-responsive and will be rejected.

6.1 Letter of Authorisation

A letter of Authorization from the Board of Directors or Managing Director or CEO of Bidder organization authorizing the Tender submitting authority. The Power of Attorney shall be submitted in the Techno commercial Bid. The Bids received without the Letter of Authorization or Power of Attorney will be summarily rejected.

6.2 Test Certificates/Reports

The main components viz module, Inverter to be used shall be allowed only with the prior written permission of TEDA. Any such change of components shall be allowed provided those components have been certified by any NABL/IECQ accredited laboratories for compliance to the stipulated technical specifications as per Section – D of this tender.

7 BID SUBMISSION

The Bids shall be submitted as per the instructions given below in the sub sections. The Bids shall be addressed to "The General Manager, TEDA, V Floor, EVK Sampath Maaligai, No.68,College Road, Chennai 600 006, Tamil Nadu, India. **Only bound bids with all pages serially numbered alone will be accepted.**

7.1 Techno commercial Bid (Envelope-A)

a) The Techno commercial Bid enables TEDA to evaluate whether the Bidder is techno commercially competent and capable of executing the order. Only those Bids which qualify in the Techno commercial evaluation will be eligible for the Price bid opening. The Price Bids of Bidders who failed in the Techno commercial bid evaluation will not be opened.

b) The Techno commercial Bid format as given in the Tender shall be duly filled, signed by the authorized person and stamped in all pages. TEDA will not be responsible for the errors committed in the Bids by the Bidders.

c) The Techno commercial Bid shall strictly not to contain any Price indications, if so; the Bid will be summarily rejected.

7.1.1 Details to be furnished in the Techno Commercial Bid

a) The EMD shall be furnished in the prescribed form.

b) The tender processing fee with GST.

c) Authorization letter from the Board of Directors/ Managing Director or CEO or Power of Attorney to sign the Tender documents shall be submitted.

d) The blank Tender document in full shall be printed, signed by the authorized person and stamped in all pages and shall be submitted as a token of acceptance of the conditions.

e) The Techno Commercial Bid shall be duly filled, signed by the authorized person and stamped in all the pages and shall be submitted.

f) The supporting documents to prove Bidder's eligibility shall be duly attested by the authorized person and shall be submitted.

g) The Balance Sheet and Profit &loss account shall be signed by the authorized person and stamped in all pages and shall be submitted.

h) The full addresses & phone numbers of the vendors shall be provided for the main components viz SPV module, inverter, etc., to be manufactured /procured.

i) All the required documents insisted in the Tender shall be enclosed in the Techno Commercial Bid. No document will be allowed to be supplemented / exchanged after opening of the bids.

j) The documentary evidence shall establish Bidder's qualifications to the satisfaction of TEDA.

7.1.2 Signing the Techno Commercial Bid

a) The Bid shall be typed and shall be signed by the Authorized Official(s) of Bidder. All pages of the bid shall be signed and stamped by the authorized person.

b) Any alterations, deletions or overwriting will be treated as valid only if they are attested by the full signature of the authorized person.

7.1.3 Sealing the Techno Commercial Bid

The Techno Commercial bid shall be placed in a separate cover (Envelope-A) and sealed appropriately. The Techno Commercial bid cover shall

be super scribed with "Techno Commercial Bid (Envelope A) **–Rate Contract tender for Supply, Installation, Commissioning and 5 years Comprehensive Maintenance of Grid Connected Rooftop Solar Power plants for a cumulative capacity of 10MWp in various Government buildings, Tamil Nadu. Tender Ref.:_____ due on _____.**The "FROM" address and "TO" address shall be written without fail otherwise the Techno Commercial bid is liable for rejection.

7.2 Price Bid (Envelope-B)

7.2.1 Details to be furnished

a) All the Price items as mentioned in the Tender shall be filled in the Price Bid format as given in the Tender. The prices quoted shall be in INDIAN RUPEES (INR) only. The Tender is liable for rejection if Price Bid contains conditional offers or partial offers and if quoted in any currency other than INR.

b) The bidder shall quote all the proposed capacity range in the price bid format, failing which the price bid shall be treated as non-responsive. The partial (or) specific capacity range quote should not be allowed.

c) The cost quoted by the Bidder shall include the breakup cost of the components to be used in grid Connected rooftop solar power plant viz., PV panel, Inverter etc.,

d) The cost quoted by the bidder shall include the entire scope Supply, Installation, Commissioning and 5 years Comprehensive Maintenance of Grid Connected Rooftop Solar Power plants (as per technical specifications) in various Government buildings, Tamil Nadu.

e) The cost quoted by the Bidder shall be kept firm for a period specified in the Tender from the date of opening of the Tender. The Bidder shall keep the Price firm during the period of Contract including the period of extension of time, if any. The Bidders shall particularly take note of this factor before submitting the Bids.

7.2.2 Signing the Price Bid

a) The Bid shall be typed and shall be signed by the Bidder or a person or persons duly authorized to bind the Bidder to the Contract.

b) All pages of the bid document shall be signed and stamped by the authorized person.

c) Any alterations, deletions or overwriting shall be treated valid, only if they are attested by full signature of the authorized person.

7.2.3 Sealing the Price Bid

The Price Bid shall be placed in a separate cover (Envelope-B) and sealed appropriately. The price bid cover shall be super scribed with "**Price Bid (Envelope B) – Rate Contract tender for Supply, Installation, Commissioning and 5 years Comprehensive Maintenance of Grid Connected Rooftop Solar Power plants for a cumulative capacity of 10MWp in various Government buildings, Tamil Nadu. Tender Ref.:_____ due on _____.**The "FROM" address and "TO" address shall be written without fail otherwise the Price bid is liable for rejection.

7.3 Outer Cover

The **Techno Commercial Bid cover (Envelope-A)** and **Price Bid cover (Envelope-B)** shall then be put in a single outer cover and sealed. The outer cover shall be super scribed with "**Rate Contract tender for Supply, Installation, Commissioning and 5 years Comprehensive Maintenance of Grid Connected Rooftop Solar Power plants for a cumulative capacity of 10MWp in various Government buildings, Tamil Nadu. Tender Ref.:_____ due on _____.** The "FROM" address and "TO" address shall be written without fail otherwise the Bid is liable for rejection.
In case of participation of new entrepreneurs under **"Special Category"** in bold Form.

7.4 Mode of Submission of Bids

a) The Bids shall be dropped in the Tender box kept at TEDA, 5th Floor, EVK Sampath Maaligai,No.68 College Road, Chennai- 600 006, Tamil Nadu, India, on or before the due date and time. The Bids will not be received personally.

b) Alternatively, if the Bidder prefers to submit the Bid by post, the Bidders shall ensure that the Bids reach TEDA on or before the due date and time. TEDA will not be liable or responsible for any postal delay or any other delay whatsoever.

c) The Bids received after Due Date and Time or Unsealed or in incomplete shape or submitted by Facsimiles (FAX), E-mail etc., will be summarily rejected.

7.5 Modification and withdrawal of Bids

The Bids once submitted cannot be modified or amended or withdrawn.

8. BID OPENING

8.1 Techno Commercial Bid Opening

The Tender outer cover and Techno commercial Bid cover will be opened at TEDA on the date and time as specified in the Tender Data sheet or any other date published in the website specified. The Tender will be opened in the presence of the Bidders who choose to be present. The representative(s) of the Bidder who choose(s) to attend Tender opening shall bring an authorization letter from the Bidder. A maximum of two representatives for each Bidder will be allowed to attend the Tender opening. **On opening the Techno Commercial bid cover, if EMD in the prescribed form is not found, the bid will be summarily rejected.**

8.2 Bid Validity

a) Bids submitted shall remain valid for a period of 180 days from the date of Tender opening. If the bid validity is lesser than 180 days, the Bid will be rejected as non-responsive.

b) In exceptional circumstances, TEDA may solicit the Bidders to extend the validity. The Bidder shall extend price validity and Bid security validity.

8.3 Initial Scrutiny

Initial Bid scrutiny will be held and Tenders as given below will be treated as non-responsive.

- Tender received **without** EMD amount& Tender Processing Fee.
- Tender **not** submitted in two parts as specified in the Tender.
- Tender not signed and stamped in all pages of the Bid
- Tender where all documents are not page numbered and not bound

- Tender received **without** the Letter of Authorization as specified in the Tender
- Tender found with **suppression of facts/details**
- Tender with **incomplete** information, subjective, conditional offers and partial offers
- Tender submitted **without** supporting documents to prove Eligibility criteria and Evaluation
- Tender **not** complying with any of the clauses stipulated in the Tender
- Tender with **lesser** validity period

  All responsive Bids will be considered for further evaluation. The decision of TEDA will be final in this regard.

8.4 Clarifications by TEDA

No clarifications whatsoever will be called for to prove the bidder's eligibility criteria on any aspect from the bidder. In case the Bidder fails to comply with the requirements of TEDA in fulfilling the eligibility criteria, such bids submitted by them will be summarily rejected as technically non responsive.

9. BID EVALUATION

9.1 Suppression of facts and misleading information

a) During the Bid evaluation, if any suppression or misrepresentation of information is brought to the notice of TEDA, TEDA shall have the right to reject the Bid and if after selection, TEDA will terminate the contract will be without any compensation to the Bidder and the EMD/Security Deposit as the case may be, shall be forfeited.

b) Bidders shall note that any figures in the documents submitted by the Bidders for proving their eligibility is found suppressed or erased, TEDA shall have the right to seek the correct facts and figures or reject such Bids.

c) It is up to the Bidders to submit the full copies of the proof documents to meet out the eligibility criteria. Otherwise, TEDA at its discretion may or may not consider such documents.

d) The Tender calls for, full copies of documents to prove the Bidder's experience, capacity and other requirements to undertake the project.

9.2 Techno Commercial Bid Evaluation

a) The Bidders who have duly complied with the Eligibility Criteria, their bid will be eligible for further processing for General Category.

b) The Tenders, which do not conform to the Technical Specifications or Tender conditions or Bids without adequate capabilities for supply & installation, will be rejected. The bids of the Eligible Bidders alone will be considered for further evaluation.

c) For New entrepreneurs who have duly complied with the Eligibility Criteria mentioned for Special Category, their bid will be eligible for further processing.

9.3 Price Bid Evaluation

9.3.1. Bidders who are qualified in Techno commercial Bid (Envelope-A) Evaluation only will be called for price Bid opening. The Price Bids will be opened in the presence of the eligible Bidders at TEDA. The Bidders or their authorized representatives (maximum two) will be allowed to take part in the Price Bid opening.

9.3.2. The Price Bid evaluation will be conducted as stipulated in the Tamil Nadu Transparency in Tenders Act 1998 and Tamil Nadu Transparency in Tenders Rules 2000. The Price evaluation will include all Duties and Taxes as given below.

(i) In case of discrepancy between the cost quoted in words and in Figures, the lower of the two will be considered.

(ii) In case of discrepancy between the actual total price break up and the total mentioned in the bid, the lower of the two will be considered.

9.3.3. The lowest price offered bidder will be called as L_1Bidder and the L1 Bidder(s) will be called for further negotiations. There is no obligation on the part of TEDA to communicate with rejected Bidders.

TEDA will not be responsible for any erroneous calculation of tax rates or any subsequent changes in rates or structure of applicable taxes. All differences arising out as above shall be fully borne by the Successful Bidder.

9.3.4 Negotiations

Negotiations will be conducted with L1 Bidder (s) for improvement in the Scope of Work, Specification, further reduction in rate and advancement of delivery schedule.

9.3.5. Under no circumstances shall a Bidder increase his price or refuse to accept the entire quantity that is allotted to him during the validity period after tenders are opened. Any Bidder, who does so resulting in recalling of tenders by TEDA or additional expenditure to TEDA/Government Department of Tamil Nadu, shall not only lose his **EMD but also run the risk of being Black listed by TEDA**. TEDA also reserves the right under the law to recover damages resulting there from, in addition to forfeiture of EMD.

9.3.6. Banning of business deal

The bidder will be banned from business with TEDA if any of the particulars produced by the bidder such as Auditor Certificate, Annual accounts, Tax Clearance Certificate, Test certificate, etc. are found to be incorrect, or if there is breach of any of the conditions in the contract which leads to delay or leads to incurring any additional cost by TEDA to complete the awarded contract.

9.4 Award of Contract

1. TEDA reserves the right to apportion the total quantity among the L1 bidder(s) and other bidders who have agreed to match the L1 rate and no dispute can be raised by any Bidder.

2. No dispute can be raised by any Bidder whose Bid has been rejected and no claims will be entertained or paid on this account.

9.5 TEDA reserves the right to;

1) Negotiate with the Bidder for further reduction of prices.
2) Insist on quality/complying with specification of materials to be supplied.
3) Ask other qualified Bidders to match **L_1** price.
4) Inspect the bidder's factory/ office premises and those of major component manufacturers from whom bidder proposes to purchase, before placement of orders and based on the inspection, TEDA reserves the right to modify the quantity ordered.
5) Reallocate the quantity to other successful Bidder, if performance of the Bidder is not as per the completion Schedule.
6) Withhold any amount for the deficiencies in the service aspect of SPV systems installed at the identified locations.
7) Notwithstanding anything contained in any of the contract documents, TEDA shall have the right to relax or waive any of the conditions of the contract wherever deemed necessary in the interest of the project.

Section- C
Award & Execution

10. AWARD OF WORK

10.1 Acceptance of the Tender

The final acceptance of the Tender is entirely vested with Tender accepting authority who reserves the right to accept or reject any or all of the Tenders in full or in part. The Tender accepting authority may also reject any tender for reasons such as changes in the new technologies, court orders, accidents or calamities and other unforeseen circumstances. After acceptance of the Tender by Tender accepting authority, the Bidder shall have no right to withdraw their Tender or claim higher price. In the event of

doing so, the bidder will be blacklisted and further deemed fit action will be taken against the bidder.

10.2 Letter of Intimation (LOI)

After acceptance of the Tender by TEDA, a Letter of Intimation (LOI) will be issued only to the Successful Bidder(s).

10.3 .Letter of Acceptance (LOA)

Letter of Acceptance (LOA) will be issued to the successful Bidder(s) by TEDA at the requirement of Government Departments / Agencies for CAPEX model. TEDA have the right to issue LOA to more than one Successful Bidder.

10.4 Payment of Security Deposit (SD)

1) The Successful Bidder(s) will be required to remit the Security Deposit equivalent to 5% (Five percent) of the value of the Contract. The SD shall be paid by way of Demand Draft/Banker's Cheque drawn in **favour of "TEDA"** payable at **Chennai** or in the form of unconditional and irrevocable Bank Guarantee with a validity of 6 years. **The SD shall be paid within 15 days** from the date of issue of **Letter of Acceptance by TEDA.**

2) The EMD or Security Deposit will be forfeited if the Successful Bidder withdraws the Bid during the period of Bid validity specified in the Tender or if the Bidder fails to sign the contract as the case may be (or) if the contract is not fulfilled as per the agreement.

10.5 Execution of Agreement

a) The Successful Bidder shall execute a Contract agreement in the INR 100 non-judicial stamp paper bought in Tamil Nadu only in the name of the Bidder, within 15 days from the date of Letter of Acceptance issued by TEDA.

b) The Successful Bidder shall not assign or make over the contract, the benefit or burden thereof to any other person or persons or body

corporate for the execution of the contract or any part thereof without the prior written consent of TEDA which reserves its right to cancel the work order either in part or full, if this condition is violated.

c) In case of the successful bidder fails to execute necessary agreement as prescribed, within the stipulated period, then his EMD/ and SD shall be forfeited.

10.6 Test Certificates/Reports

The certificates of main components viz module, Inverter shall be submitted along with the Security Deposit. The components shall be allowed only if those components have been certified by any NABL/IECQ accredited laboratories for compliance to the stipulated technical specifications as per Section - D of this tender. & module(s) shall be in MNRE ALLM list.

10.7 Release of Firm Work Order

After execution of the Contract Agreement and payment of Security Deposit and submission of Reports/certificates for module, inverter, the firm work order will be issued directly to the successful Bidder by the TEDA.

10.8. Installation & Completion Schedule

The entire work involving Supply, Installation & Commissioning of Grid Connected rooftop Solar Power plants shall be completed within 90 days from the date of granting permission by the concerned officials for carrying out the works.

10.9 Release of SD

The Security Deposit will be refunded to the Successful Bidder on completion of entire contract subject to satisfaction of TEDA. Such completion will be arrived at when the entire work as stated above is completed by the Bidder as per the contract agreement and as per Work Order(s) issued by the TEDA**.**

The Security Deposit till it is refunded by the TEDA to the Successful Bidder will not earn any interest thereof.

10.10 Termination of Contract

10.10. 1 Termination for default

a) TEDA may without prejudice to any other remedy for breach of contract, by written notice of default with a notice period of 7 days, sent to the Successful Bidder, terminate the contract in whole or part with the forfeiture of EMD/SD, (i) if the Successful Bidder fails to supply, install and commission the Grid Connected Rooftop systems within the time period(s) specified in the Contract, or fails to fulfil the requirements as per the Installation and Completion Schedule or within any extension thereof granted by the TEDA; or (ii) if the Successful Bidder fails to perform any of the obligation(s) under the contract; or (iii)The Bidder shall observe highest standard of ethics during execution of the project .The Tender Accepting Authority will terminate the contract if it is determined in the judgment of TEDA, the Bidder awarded with the contract, has engaged in fraudulent and corrupt practices in competing for or in executing the Contract.

b) In the event TEDA terminates the Contract in whole or in part, TEDA may opt upon terms and in such manner as it deems appropriate, the services of the other bidders and the Successful Bidder shall be liable to TEDA for any additional costs due to this. However, the Successful Bidder shall continue to perform the contract to the extent not terminated.

10.10.2 Termination for Insolvency

TEDA may at any time terminate the Contract by giving written notice with a notice period of seven (7) days to the Successful Bidder, if the Successful Bidder becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the Successful Bidder, provided that such termination will not prejudice or affect any right of action or remedy that has accrued or will accrue thereafter to the TEDA.

10.10.3 Termination for Convenience

TEDA may, by written notice, with a notice period of seven days sent to the Successful Bidder, 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 TEDA's convenience, the extent to which performance of work under the Contract is terminated, and the date upon which such termination becomes effective. On termination, the Successful Bidder is not entitled to any compensation whatsoever.

11. EXECUTION OF WORK

11.1 Scope of Work

a) Scope of work covers Supply, Installation, Commissioning and 5 years Comprehensive Maintenance of Grid Connected Rooftop Solar Power plants of in Government Department buildings, Tamil Nadu, as per the technical specifications. Any deviation from the specifications will not be accepted under any circumstance.

~~b)~~ Wiring up to Distribution board from the SPV power plant will be in the scope of the successful bidder.

c) Performance testing of the complete system.

d) Providing earthing as per the technical specification.

e) Comprehensive Maintenance of the system is for 5 years. The comprehensive Maintenance shall include preventive Maintenance service visits quarterly for first year & half yearly subsequently till the completion period of comprehensive Maintenance. The Maintenance shall include replacement of all parts or components found defective due to manufacturing defect or because of wear and tear at free of cost. If the Grid Connected SPV Power Plants are not functional, the same shall be repaired or restored or replaced within 7days.

f) Insuring the goods in transit and 5 years CMC are the responsibility of the bidder.

g) The entire work shall be completed as per the Installation & Completion schedule specified in clause **10.8**

h) The successful bidder shall undertake to supply the spares free of cost for the Maintenance of the offered items during the warranty period as per the clause **11.6**. The successful bidder shall keep all the spares available for sale atleast for a period of 5 years after the expiry of warranty/CMC.

i) If the operation or use of the system proves to be unsatisfactory during the warranty period specified, the Successful Bidder shall replace the faulty ones or carry out necessary repairs as per the warranty terms and conditions.

j) In case the Successful Bidder fails to carry out the warranty regulations, TEDA will engage any other agency and carry out the service/replacement and deduct the amounts from the warranty amount retained by TEDA as per the Payment terms or from their pending bills (or) any money due (or) payable to them (or) recover from the successful bidder.

k) If the solar grid inverter operates at medium voltage (250-650V) or high voltage (more than 650V), a safety Certificate under Rule 47A of the Indian Electricity Rules 1956, shall be obtained from the Tamil Nadu Electrical Inspectorate, (if applicable). For the procedure please visit: http://www.tnei.tn.gov.in/OtherIns.php

l) Obtaining necessary approval & clearances from TANGEDCO and Electrical Inspectorate, etc is the responsible of the Successful Bidder for commissioning the solar power plant (s) as per TNERC order/ TANGEDCO guidelines and the necessary charges also are paid by the successful bidder.

11.2 Insurance

The Successful Bidder(s) shall take an insurance policy for transit-cum- storage- cum-erection for all the materials to cover all risks and liabilities for supply of materials on site basis, storage of materials at site,

erection, testing and commissioning. The Bidder shall also take appropriate insurance during the CMC period.

The Contractor has to submit the Insurance Policy covering CMC period risks as mentioned above for the period of five years to TEDA immediately after commissioning of the project, failing which, the payment towards installation and commissioning part will not be released till the insurance policy is submitted.

11.3 Handing Over

a) The successful bidder shall hand over the Power plants in complete shape to the Government Department on the same day of Installation & Commissioning, through prescribed handing over and taking over format.

b) Hands on Training on Maintenance of Grid Connected Rooftop Solar Power Plants shall be arranged for the officials/ Staff of the concerned department in Tamil Nadu, by the successful bidder.

11.4 Comprehensive Maintenance for 5 years.

a) Comprehensive Maintenance charge for 5 years is fixed at 10% of the project cost @ 2% per year. CMC should begin from the very next month after the installation & commissioning and meticulous records of the same should be maintained.

b) The Successful Bidder should provide 5 years comprehensive maintenance of the Grid Connected Solar Rooftop Power Plants in Government Buildings which includes corrective maintenance, repair (or) replacement, free of cost on site.

c) The service personnel of the Successful Bidder will make routine maintenance visits quarterly for first year & half yearly subsequently, till the completion period of comprehensive maintenance. The maintenance includes thorough testing & replacement of any damaged parts. Apart from this, any complaint registered/ service calls received or faults notified, the service personnel should reach the site within two (2) days and attend to the defects or faults and rectify the same (or)

replace the faulty systems if needed, within 7 days.

d) The deputed personnel should be in a position to check and test all the components regularly, so that preventive actions, if any, could be taken well in advance to save any component from damage.

e) Normal and preventive maintenance such as cleaning of module surface, tightening of all electrical connections of the Grid Connected Solar Rooftop Power Plants are also the duties of the deputed personnel during maintenance visits.

f) During the comprehensive maintenance period of the SPV rooftop systems, if there is any loss or damage to any component due to mismanagement/mishandling or due to any other reasons pertaining to the deputed personnel, what-so-ever, the Bidder is responsible for immediate replacement/rectification. The damaged component shall be repaired or replaced by a new component.

g) The maintenance includes replacement of all parts. If the Grid Connected Solar Rooftop Power plants are not functional, the same should be repaired / restored / replaced within seven (7) days.

h) TEDA reserves the right to claim damages and Costs for non-fulfillment of warranty, apart from forfeiting un-paid amount if any, in the event of unsatisfactory maintenance.

i) If the successful bidder, having been notified by the end user fails to rectify the defect(s) and restore the SPV plants to good working condition within the period specified above, then a penalty of Rs.500 per day of the breakdown period beyond 7 days will be levied.

j) Successful bidder should furnish the routine maintenance reports within 15 days at the end of each maintenance period as mentioned above. Failure to do so, it will be presumed that no Comprehensive maintenance works were carried out by Successful Bidder and CMC charges will not be released and BG's will be invoked and encashed.

11.5 Product Take Back & Recycling

Proper decommissioning and recycling of SPV panels& electronics etc., are necessary to ensure that harmful materials are not released into the environment. Hence, an undertaking from the successful bidder for product take back after expiry of their life shall be submitted.

11.6 Warranty

1. (a) The SPV panel shall carry a warranty of minimum 25 years.
   (b) The SPV panel must be warranted for their output peak watt capacity which shall not be less than 90% at the end of 10 years and 80% at the end of 25 years.
   (c) The grid tie solar inverter shall carry a warranty of minimum 5 years.
2. The Grid Connected Rooftop Solar power plants installed and commissioned shall be under a warranty against any manufacturing defect for a period of 5 years from the date of Commissioning.
3. The mechanical structures, electrical works including/inverters/ maximum power point tracker units/ distribution boards/digital meters/ switchgear etc. and overall workmanship of the Grid Connected Solar power plants must be warranted against any manufacturing/ design/ installation defects for a minimum period of 5 years.
4. The warranty will be against breakages, malfunctions, non fulfillment of guaranteed performance and breakdowns due to manufacturing defects or defects that may arise due to improper operation of electrical/electronic components of the plants but do not include physical damages by the end users.
5. The above warranty shall take effect from the date on which the plant is taken over by the concerned department after commissioning.

6. The successful Bidder shall be liable to make good the loss by replacing the defective product during the warranty period for the entire plant free of cost, failing which TEDA will deduct the amount from the amount retained by TEDA as per Payment terms and also the bidder will be blacklisted.
7. The warranty will cover all the materials and goods involved in the supply, installation and commissioning of Rooftop Grid Connected Solar plants by the successful Bidder under this contract irrespective of the fact whether these have been manufactured by the Successful Bidder or not. The decision in this regard by TEDA is final and binding on the successful bidder.

11.7 Inspection

a) 100% of the Grid Connected Solar Rooftop power plants installed will be inspected by officials of TEDA within 15 days of receipt of Installation & Commissioning Report. TEDA will make payment only for the systems installed in compliance to the technical specifications of TEDA.

12. Liquidated Damages

If the Successful Bidder fails to commission the plants as per the Installation & Completion schedule specified, Liquidated Damages at the rate of 1% per completed week on the value of the unfinished / non commissioned quantity of the work order will be levied subject to a maximum of 10%. The Liquidated Damages amount will be automatically deducted from the Bills submitted by the Successful Bidder. If the installation is not completed, TamilNadu Energy Development Agency will make alternate arrangements and the cost incurred by the beneficiary department for doing the same will be recovered from the Successful Bidder.

13. Workmen's Compensation Insurance

1) This insurance shall protect the Contractor against all claims applicable under the Workmen's Compensation Act, 1948 (Government of India). This policy shall also cover the Contractor against claims for injury,

disability, disease or death of its or its Sub-Contractor's employees, which for any reasons are not covered under the Workmen's Compensation Act, 1948. The liabilities shall not be less than Workmen's Compensation.

2) **Compensation:** The contractor shall arrange to exercise effective supervision over the works so as to ensure safety to the men and materials. In case of accidents to the workmen arising out of and in the course of employment, the contractor shall pay necessary compensation to them according to the workman's compensation act, besides arranging immediate medical aid. He shall indemnify the TEDA against any liability whatsoever in this regard and execute a bond accordingly. In case, the contractor fails to pay the compensation within the reasonable time, TEDA may settle the claim and arrange to recover the same from the contractor.

14. Payment Terms

1. All payments will be made in INR only.
2. No advance will be paid or no letter of credit will be issued.

3. (a) 90% total project cost will be made on satisfactory commissioning with net metering & completion certificate by TEDA.

(Or)

80% total project cost will be made on satisfactory installation provided that the delay on pending installation of net meter by TANGEDCO is beyond 30 days and 10% total project cost will be made after satisfactory commissioning with installation of net meter.

4. 10% of the total project cost (ie) Comprehensive Maintenance Contract payment will be made annually @ 2% subject to fulfillment of Warranty or Comprehensive Maintenance obligations.
5. If the Duties and/or Taxes have been reduced retrospectively, the Contractor is liable to return the same.

6. The contractor will have full and exclusive liability for payment of all Duties, Taxes and other statutory payments payable under any or all of the Statutes/Laws/Acts etc now or hereafter imposed.

15. Generation Guarantee

a. The Contractor shall provide a minimum generation guarantee corresponding to a capacity utilization factor (CUF) of 17% (the "Guaranteed CUF") with respect to the DC capacity of the PV system.

b. This Guaranteed CUF shall be calculated on an annual-basis and shall be verified by the TEDA at the end of each year during the 5 (five) year guarantee period.

c. The TEDA will recover an amount at the rate of Rs. 8.00 per kWh/ TNERC fixed rate from the Contractor for such shortfall at the end of the contract year to compensate the same to the Government Department.

d. In case of energy generation corresponding to less than the Guaranteed CUF, it is clarified that the penalty for loss in generation shall not be duplicated with the penalty for delay in rectification of fault beyond 48 hours of complaint.

16. Tender Validity

The validity of the tender is one year from date of issue of Letter of Intimation (LoI).

SECTION – III

TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS

The proposed projects shall be commissioned as per the technical specifications given below. Domestic Modules are to be used failing which it will be assumed that system is not matching the requirement of the tender and bidder's PBG shall be forfeited. Competent Authority's decision will be final and binding on the bidder.

1. DEFINITION

A Roof Top Solar (RTS) Photo Voltaic (PV) system shall consist of following equipment/components:

1. Solar Photo Voltaic (SPV) modules consisting of required number of Crystalline PV modules
2. Inverter/PCU
3. Module Mounting structures
4. Energy Meter
5. Array Junction Boxes
6. DC Distribution Box
7. AC Distribution Box
8. Protections – Earthing, Lightning, Surge
9. Cables
10. Drawing & Manuals
11. Miscellaneous.

1. Solar PV modules

1.1. The PV modules and Solar Cell used should be made in India.

1.2. The PV modules used must qualify to the latest edition of IEC standards or equivalent BIS standards, i.e. IEC 61215/IS14286, IEC 61853-Part I/IS 16170-Part I, IEC 61730 Part-1 &Part 2 and IEC 62804 (PID). For the PV modules to be used in a highly corrosive atmosphere throughout their lifetime, they must qualify to IEC 61701/IS 61701.

1.3. The rated power of solar PV module shall have maximum tolerance up to +3%.

1.4. The peak-power point current of any supplied module string (series connected modules) shall not vary by +1% from the respective arithmetic means for all modules and/or for all module strings (connected to the same MPPT), as the case may be.

1.5. The peak-power point voltage of any supplied module string (series connected modules) shall not vary by + 2% from the respective arithmetic means for all modules and/or for all module strings (connected to the same MPPT), as the case may be.

1.6. The temperature co-efficient power of the PV module shall be equal to or better than -0.45%/°C.

1.7. Solar PV modules of minimum capacity 250 Wp to be used.

1.8. The PV Module efficiency should be minimum 16%.

1.9. Solar PV modules of minimum fill factor 75%, to be used.

1.10. All electrical parameters at STC shall have to be provided

1.11. The PV modules shall be equipped with IP 65 or better protection level junction box with required numbers of bypass diodes of appropriate rating and appropriately sized output power cable of symmetric length with MC4

or equivalent solar connectors. The IP level for protection may be chosen based on following conditions:

i. An IP 65 rated enclosure is suitable for most outdoor enclosures that won't encounter extreme weather such as flooding.
ii. An IP 67 rated enclosure is suitable at locations which may encounter temporary submersion at depths of up to one meter.
iii. An IP 68 enclosure is recommended if there may exist situations of submergence for extended periods of time and at substantial depths.

1.12. All PV modules should carry a performance warranty of >90% during the first 10 years, and >80% during the next 15 years. Further, module shall have performance warranty of >97% during the first year of installation—degradation of the module below 1 % per annum.

1.13. The manufacturer should warrant the Solar Module(s) to be free from the defects and/or failures specified below for a period not less than five (05) years from the date of commissioning:

1.14. Defects and/or failures due to manufacturing.

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

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

1.17. PV modules must be tested and approved by one of the NABL accredited and BIS approved test centers.

1.18. Modules deployed must use a RF identification tag laminated inside the glass. The following information must be mentioned in the RFID used on each module:

i. Name of the manufacturer of the PV module
ii. Name of the manufacturer of Solar Cells.
iii. Month & year of the manufacture (separate for solar cells and modules)
iv. Country of origin (separately for solar cells and module)
v. I-V curve for the module Wattage, Im, Vm and FF for the module
vi. Unique Serial No and Model No of the module
vii. Date and year of obtaining IEC PV module qualification certificate.
viii. Name of the test lab issuing IEC certificate.
ix. Other relevant information on traceability of solar cells and module as per ISO 9001 and ISO 14001.
x. Nominal wattage +3%.
xi. Brand Name, if applicable.

1.19. Other details as per IS/IEC 61730-1 clause 11 should be provided at appropriate place. In addition to the above, the following information should also be provided:

i. The actual Power Output Pmax shall be mentioned on the label pasted on the back side of PV Module.
ii. The Maximum system voltage for which the module is suitable to be provided on the back sheet of the module.
iii. Polarity of terminals or leads (colour coding is permissible) on junction Box housing near cable entry or cable and connector.

1.20. Unique Serial No, Model No, Name of Manufacturer, Manufacturing year, Make in India logo and module wattage details should be displayed inside the laminated glass.

2. Inverter/PCU

2.1. Inverters/PCU should comply with applicable IEC/equivalent BIS standard for efficiency measurements and environmental tests as per standard codes IEC 61683/IS 61683, IS 16221 (Part 2), IS 16169 and IEC 60068-2(1,2,14,30) /Equivalent BIS Std.

2.2. Maximum Power Point Tracker (MPPT) shall be integrated in the inverter/PCU to maximize energy drawn from the array. Charge controller (if any) / MPPT units environmental testing should qualify IEC 60068-2(1, 2, 14, 30)/Equivalent BIS standard. The junction boxes/enclosures should be IP 65 or better (for outdoor)/ IP 54or better (indoor) and as per IEC 529 Specifications.

2.3. All inverters/PCUs shall be IEC 61000 compliant for electromagnetic compatibility, harmonics, Surge, etc.

2.4. The PCU/ inverter shall have overloading capacity of minimum 10%.

2.5. Typical technical features of the inverter shall be as follows-

i. Switching devices: IGBT/MOSFET
ii. Control: Microprocessor/DSP
iii. Nominal AC output voltage and frequency: as per CEA/State regulations
iv. Output frequency: 50 Hz
v. Grid Frequency Synchronization range: as per CEA/State Regulations
vi. Ambient temperature considered: -20°C to 60°C
vii. Humidity: 95 % Non-condensing
viii. Protection of Enclosure: IP-54 (Minimum) for indoor and IP-65(Minimum) for outdoor.
ix. Grid Frequency Tolerance range: as per CEA/State regulations
x. Grid Voltage tolerance: as per CEA/State Regulations
xi. No-load losses: Less than 1% of rated power
xii. Inverter efficiency (Min.): >93% (In case of 10 kW or above within-built galvanic isolation)>97% (In case of 10 kW or above without inbuilt galvanic isolation)

xiii. Inverter efficiency (minimum): > 90% (In case of less than 10 kW)
xiv. THD: < 3%
xv. PF: > 0.9 (lag or lead)
xvi. Should not inject DC power more than 0.5% of full rated output at the interconnection point and comply to IEEE 519.

2.6. The output power factor of inverter should be suitable for all voltage ranges or sink of reactive power, inverter should have internal protection arrangement against any sustain fault in feeder line and against the lightning on feeder.

2.7. 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:
i. The name or trademark of the manufacturer or supplier;
ii. A model number, name or other means to identify the equipment,
iii. A serial number, code or other marking allowing identification of manufacturing location and the manufacturing batch or date within a three-month time period.
iv. Input voltage, type of voltage (a.c. or d.c.), frequency, and maximum continuous current for each input.
v. 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.
vi. The Ingress Protection (IP) rating

2.8. Marking shall be located adjacent to each fuse or fuse holder, or on the fuse holder, or in another location provided that it is obvious to which fuse the marking applies, giving the fuse current rating and voltage rating for fuses that may be changed at the installed site.

2.9. In case the consumer is having a *3-ϕ* connection, *1-ϕ*/*3-ϕ* inverter shall be provided by the vendor as per the consumer's requirement and regulations of the State.

2.10. Inverter/PCU shall be capable of complete automatic operation including wake-up, synchronization & shutdown.

2.11. The Inverter should have a provision of remote monitoring of inverter data through sim card. Required website/mobile app platform, where the user (Consumer) can access the data, should be provided/explained to consumer while installation. Additionally, if inverter has the facility of in-built wi-fi module, that should also be explained to the consumer. On demand, Inverter should also have provision to feed the data to the remote monitoring server using relevant API/ protocols. All the inverter data should be available for monitoring by giving web access.

2.12. Integration of PV Power with Grid & Grid Islanding:

i. The output power from SPV would be fed to the inverters/PCU which converts DC produced by SPV array to AC and feeds it into the main electricity grid after synchronization.

ii. In the event of a power failure on the electric grid, it is required that any independent power-producing inverters attached to the grid turn off in a short period of time. This prevents the DC-to-AC inverters from continuing to feed power into small sections of the grid, known as "islands." Powered islands present a risk to workers who may expect the area to be unpowered, and they may also damage grid-tied equipment. The Rooftop PV system shall be equipped with islanding protection. In addition to disconnection from the grid (due to islanding protection) disconnection due to under and over voltage conditions shall also be provided, if not available in inverter.

iii. MCB/MCCB or a manual isolation switch, besides automatic disconnection to grid, would have to be provided at utility end to isolate the grid connection by the utility personnel to carry out any maintenance. This switch shall be locked by the utility personnel.

3. Module Mounting Structure (MMS):

3.1. Supply, installation, erection and acceptance of module mounting structure (MMS) with all necessary accessories, auxiliaries and spare part shall be in the scope of the work.

3.2. Module mounting structures can be made from three types of materials. They are Hot Dip Galvanized Iron, Aluminium and Hot Dip Galvanized Mild Steel (MS). However, MS will be preferred for raised structure.

3.3. MMS Steel shall be as per latest IS 2062:2011 and galvanization of the mounting structure shall be in compliance of latest IS 4759. MMS Aluminium shall be as per AA6063 T6. For Aluminium structures, necessary protection towards rusting needs to be provided either by coating or anodization.

3.4. All bolts, nuts, fasteners shall be of stainless steel of grade SS 304 or hot dip galvanized, panel mounting clamps shall be of aluminium and must sustain the adverse climatic conditions. Structural material shall be corrosion resistant and electrolytically compatible with the materials used in the module frame, its fasteners, nuts and bolts.

3.5. The module mounting structures should have angle of inclination as per the site conditions to take maximum insolation and complete shadow-free operation during generation hours. However, to accommodate more capacity the angle of inclination may be reduced until the plant meets the specified performance ratio requirements.

3.6. The Mounting structure shall be so designed to withstand the speed for the wind zone of the location where a PV system is proposed to be installed.

The PV array structure design shall be appropriate with a factor of safety of minimum 1.5.

3.7. The upper edge of the module must be covered with wind shield so as to avoid build air ingress below the module. Slight clearance must be provided on both edges (upper & lower) to allow air for cooling.

3.8. Suitable fastening arrangement such as grouting and calming should be provided to secure the installation against the specific wind speed. The Empanelled Agency shall be fully responsible for any damages to SPV System caused due to high wind velocity within guarantee period as per technical specification.

3.9. The structures shall be designed to allow easy replacement, repairing and cleaning of any module. The array structure shall be so designed that it will occupy minimum space without sacrificing the output from the SPV panels. Necessary testing provision for MMS to be made available at site.

3.10. Adequate spacing shall be provided between two panel frames and rows of panels to facilitate personnel protection ease of installation, replacement, cleaning of panels and electrical maintenance.

3.11. The structure shall be designed to withstand operating environmental conditions for a period of minimum 25 years.

3.12. The Rooftop Structure details as follows

i. Ballast structure

a. The mounting structure must be Non-invasive ballast type and any sort of penetration of roof to be avoided.

b. The minimum clearance of the structure from the roof level should be in between 70-150 mm to allow ventilation for cooling, also ease of cleaning and maintenance of panels as well as cleaning of terrace.

c. The structures should be suitably loaded with reinforced concrete blocks of appropriate weight made out of M25 concrete mixture.

d. Module mounting structures of minimum 300mm ground clearance at the lowest point from the roof surface.

3.13. Material standards:

i. Design of foundation for mounting the structure should be as per defined standards which clearly states the Load Bearing Capacity & other relevant parameters for foundation design (As per IS 6403 / 456 / 4091 / 875).

ii. Grade of raw material to be used for mounting the structures so that it complies the defined wind loading conditions (As per IS 875 - III) should be referred as follows (IS 2062 – for angles and channels, IS 1079 – for sheet, IS 1161 & 1239 for round pipes, IS 4923 for rectangular and square hollow section)

iii. Test reports for the raw material should be as per IS 1852 / 808 / 2062 / 1079 / 811.

iv. In process inspection report as per approved drawing & tolerance should be as per IS 7215.
v. For ascertaining proper welding of structure part following should be referred:
   a. D.P. Test (Pin Hole / Crack) (IS 822)
   b. Weld wire grade should be of grade (ER 70 S - 6)
vi. For ascertaining hot dip galvanizing of fabricated structure following should be referred: -
   a. Min coating required should be as per IS 4759 & EN 1461.
   b. Testing of galvanized material
      - Pierce Test (IS 2633)
      - Mass of Zinc (IS 6745)
      - Adhesion Test (IS 2629)
      - CuSO4 Test (IS 2633)
      - Superior High-Grade Zinc Ingot should be of 99.999% purity (IS 209) (Preferably Hindustan Zinc Limited or Equivalent).
vii. Foundation Hardware – If using foundation bolt in foundation then it should be as per IS 5624.

3.14. Design Validation- The Structure design and drawing should be duly verified by a licensed Structural designer before installation for all types of structure arrangements including the extension made, as per specification.

4. Metering

4.1. A Roof Top Solar (RTS) Photo Voltaic (PV) system shall consist of following energy meters:
   i. Net meter: To record import and export units
   ii. Generation meter: To keep record for total generation of the plant.

4.2. The installation of meters including CTs & PTs, wherever applicable, shall be carried out by the Empanelled Vendor as per the terms, conditions and procedures laid down by the concerned TNERC/TANGEDCOs.

5. Array Junction Boxes:

a. The junction boxes are to be provided in the PV array for termination of connecting cables. The Junction Boxes (JBs) shall be made of GRP/FRP/Powder Coated aluminum /cast aluminum alloy with full dust, water & vermin proof arrangement. All wires/cables must be terminated through cable lugs. The JBs shall be such that input & output termination can be made through suitable cable glands. Suitable markings shall be provided on the bus-bars for easy identification and cable ferrules will be fitted at the cable termination points for identification.

b. Copper bus bars/terminal blocks housed in the junction box with suitable termination threads Conforming to IP 65 or better standard and IEC 62208

Hinged door with EPDM rubber gasket to prevent water entry, Single /double compression cable glands should be provided.

c. Polyamide glands and MC4 Connectors may also be provided. The rating of the junction box shall be suitable with adequate safety factor to interconnect the Solar PV array.

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

e. Junction boxes shall be mounted on the MMS such that they are easily accessible and are protected from direct sunlight and harsh weather.

7. DC Distribution Box (DCDB):

a. May not be required for small plants, if suitable arrangement is available in the inverter.

b. DC Distribution Boxes are to be provided to receive the DC output from the PV array field.

c. DCDBs shall be dust & vermin proof conform having IP 65 or better protection, as per site conditions.

d. The bus bars are made of EC grade copper of required size. Suitable capacity MCBs/MCCB shall be provided for controlling the DC power output to the inverter along with necessary surge arrestors. MCB shall be used for currents up to 63 Amperes, and MCCB shall be used for currents greater than 63 Amperes.

8. AC Distribution Box (ACDB):

a. AC Distribution Panel Board (DPB) shall control the AC power from inverter, and should have necessary surge arrestors, if required. There is interconnection from ACDB to mains at LT Bus bar while in grid tied mode.

b. All switches and the circuit breakers, connectors should conform to IEC 60947:2019, part I, II and III/ IS 60947 part I, II and III.

c. The isolators, cabling work should be undertaken as part of the project.

d. All the Panel's shall be metal clad, totally enclosed, rigid, floor mounted, air - insulated, cubical type suitable for operation on *1-ϕ*/*3-ϕ*, 415 or 230 volts, 50 Hz (or voltage levels as per CEA/State regulations).

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

f. All indoor panels will have protection of IP 54 or better, as per site conditions. All outdoor panels will have protection of IP 65 or better, as per site conditions.

g. Should conform to Indian Electricity Act and CEA safety regulations (till last amendment).

h. All the 415 or 230 volts (or voltage levels as per CEA/State regulations) AC devices / equipment like bus support insulators, circuit breakers, SPDs,

Voltage Transformers (VTs) etc., mounted inside the switchgear shall be suitable for continuous operation and satisfactory performance under the following supply conditions.

i. Variation in supply voltage: as per CEA/State regulations
ii. Variation in supply frequency: as per CEA/State regulations

i. The inverter output shall have the necessary rated AC surge arrestors, if required and MCB/ MCCB. RCCB shall be used for successful operation of the PV system, if inverter does not have required earth fault/residual current protection.

9. Protections

The system should be provided with all necessary protections like earthing, Lightning, and Surge Protection, as described below:

a. Earthing Protection

i. The earthing shall be done in accordance with latest Standards.
ii. Each array structure of the PV yard, Low Tension (LT) power system, earthing grid for switchyard, all electrical equipment, inverter, all junction boxes, etc. shall be grounded properly as per IS 3043-2018.
iii. All metal casing/ shielding of the plant shall be thoroughly grounded in accordance with CEA Safety Regulation 2010. In addition, the lightning arrester/masts should also be earthed inside the array field.
iv. Earth resistance should be as low as possible and shall never be higher than 5 ohms.
v. For 10 KW and above systems, separate three earth pits shall be provided for individual three earthings viz.: DC side earthing, AC side Earthing and Lightning arrestor earthing.

b. Lightning Protection

i. The SPV power plants shall be provided with lightning & over voltage protection, if required. The main aim in this protection shall be to reduce the overvoltage to a tolerable value before it reaches the PV or other sub system components. The source of over voltage can be lightning, atmosphere disturbances etc.
ii. The entire space occupying the SPV array shall be suitably protected against Lightning by deploying required number of Lightning Arrestors (LAs). Lightning protection should be provided as per NFC17-102:2011/IEC 62305 standard.
iii. The protection against induced high-voltages shall be provided by the use of Metal Oxide Arrestors (MOVs)/Franklin Rod type LA/Early streamer type LA.

iv. The current carrying cable from lightning arrestor to the earth pit should have sufficient current carrying capacity according to IEC 62305. According to standard, the minimum requirement for a lightning protection system designed for class of LPS III is a 6 mm^2 copper/ 16 mm^2 aluminum or GI strip bearing size 25*3 mm thick). Separate pipe for running earth wires of Lightning Arrestor shall be used.

c. Surge Protection

i. Internal surge protection, wherever required, shall be provided.
ii. It will consist of three SPD type-II/MOV type surge arrestors connected from +ve and –ve terminals to earth.

10. CABLES

a. All cables should conform to latest edition of IEC/equivalent BIS Standards along with IEC 60227/IS 694, IEC 60502/IS 1554 standards.
b. Cables should be flexible and should have good resistance to heat, cold, water, oil, abrasion etc.
c. Armored cable should be used and overall PVC type 'A' pressure extruded insulation or XLPE insulation should be there for UV protection.
d. Cables should have Multi Strand, annealed high conductivity copper conductor on DC side and copper/FRLS type Aluminium conductor on AC side. For DC cabling, multi-core cables shall not be used.
e. Cables should have operating temperature range of -10°C to +80°C and voltage rating of 660/1000 V.
f. Sizes of cables between array interconnections, array to junction boxes, junction boxes to Inverter etc. shall be so selected to keep the voltage drop less than 2% (DC Cable losses).
g. The size of each type of AC cable selected shall be based on minimum voltage drop. However; the maximum drop shall be limited to 2%.
h. The electric cables for DC systems for rated voltage of 1500 V shall conform to BIS 17293:2020.
i. All cable/wires are to be routed in a RPVC pipe/ GI cable tray and suitably tagged and marked with proper manner by good quality ferule or by other means so that the cable is easily identified.
j. All cable trays including covers to be provided.
k. Thermo-plastic clamps to be used to clamp the cables and conduits, at intervals not exceeding 50 cm.
l. Size of neutral wire shall be equal to the size of phase wires, in a three phase system.
m. The Cable should be so selected that it should be compatible up to the life of the solar PV panels i.e. 25 years.

11. DRAWINGS& MANUALS:

a. Operation & Maintenance manual/user manual, Engineering and Electrical Drawings shall be supplied along with the power plant.
b. The manual shall include complete system details such as array lay out, schematic of the system, inverter details, working principle etc.
c. The Manual should also include all the Dos & Don'ts of Power Plant along with Graphical Representation with indication of proper methodology for cleaning, Operation and Maintenance etc.
d. Step by step maintenance and troubleshooting procedures shall also be given in the manuals.
e. Vendors should also educate the consumers during their AMC period.

12. Miscellaneous:

a. Connectivity: The maximum capacity for interconnection with the grid at a specific voltage level shall be as specified in the SERC regulation for Grid connectivity and norms of TANGEDCO and amended from time to time.
b. Safety measures: Electrical safety of the installation(s) including connectivity with the grid must be taken into account and all the safety rules & regulations applicable as per Electricity Act, 2003 and CEA Safety Regulation 2010 etc. must be followed.
c. Shadow analysis: The shadow analysis report with the instrument such as Solar Pathfinder or professional shadow analysis software of each site should be provided and the consumer should be educated to install the system only in shadow free space. Lower performance of the system due to shadow effect shall be liable for penalty for lower performance.
d. Fire fighting system - Portable fire extinguishers/sand buckets shall be provided wherever required as per norms.

13. Metering and Connectivity

Metering and grid connectivity of the Solar Rooftop Plants under this scheme would be the responsibility of the Empanelled Vendor in accordance with the terms and conditions laid down in bid document and prevailing guidelines/regulation of TNERC and issued amendments

Quality Certification, Standards and Testing for Grid-Connected Rooftop Solar PV Systems/Power Plants

Solar PV Modules/Panels	
IEC61215 and IS14286	Design Qualification and Type Approval for Crystalline Silicon Terrestrial Photovoltaic(PV) Modules
IEC 61701:2011	Salt Mist Corrosion Testing of Photovoltaic(PV)Modules

IEC 61853-1:2011/ IS16170-1:2014	Photovoltaic (PV) module performance testing and energy rating–: Irradiance and temperature performance measurements, and power Rating.
IEC 62716	Photovoltaic(PV)Modules–Ammonia(NH3)Corrosion Testing (as per the site condition like dairies, toilets etc)
IEC61730-1,2	Photovoltaic(PV)ModuleSafetyQualification– Part1:Requirementsfor Construction,Part2:Requirements for Testing
IEC 62804	Photovoltaic (PV) modules – Test method for detection of potential-induced degradation. IEC 62804-1: Part 1: Crystalline Silicon
Solar PV Inverters	
IEC62109or IS: 16221	Safety of power converters for use in photovoltaic power systems –Part1:Generalrequirements, and Safety of power converters for use in photovoltaic power systems Part2:Particularrequirementsforinverters.Safetycompliance(Protection degreeIP65 or betterforoutdoormounting,IP54 or better for indoor mounting)
IS/IEC61683latest (as applicable)	Photovoltaic Systems – Power conditioners: Procedure for Measuring Efficiency(10%,25%,50%,75%&90-100%LoadingConditions)
IEC 60068-2 /IEC62093 (as applicable)	Environmental Testing of PV System–Power Conditioner sand Inverters
IEC 62116:2014/ IS16169	Utility-interconnected photovoltaic inverters - Test procedure of islanding prevention measures
Fuses	
IS/IEC60947 (Part 1, 2 &3),EN50521	Generalsafetyrequirementsforconnectors,switches,circuitbreakers(AC/DC): 1)Low-voltage Switch gear and Control-gear,Part1:Generalrules 2)Low-VoltageSwitchgearandControl-gear,Part2:CircuitBreakers 3)Low-voltageswitchgearandControl-gear,Part3:Switches,disconnectors switch-dis connector sand fuse-combination units 4)EN50521:Connectorsforphotovoltaicsystem-Safetyrequirementsandtests
IEC60269-6:2010	Low-voltagefuses-Part6:Supplementaryrequirementsforfuse-linksforthe protection of solar photovoltaic energy systems

Solar PV Roof Mounting Structure	
IS2062/IS4759/AA6063 T6	Material for the structure mounting
Surge Arrestors	
BFC17-102:2011/ NFC 102:2011/ IEC 62305	Lightening Protection Standard
IEC 60364-5-53/ IS15086-5(SPD) IEC 61643- 11:2011	Electricalinstallationsofbuildings-Part5-53:Selectionanderectionof electrical equipment-Isolation, switching and control Low-voltagesurgeprotectivedevices-Part11:Surgeprotectivedevices connected to low-voltage power systems-Requirement sand test methods
Cables	
IEC 60227/IS 694, IEC60502/IS 1554 (Part 1&2)/IEC69947(as applicable)	GeneraltestandmeasuringmethodforPVC(Polyvinylchloride)insulatedcables(forworkingvoltagesuptoandincluding1100V,anduV resistant for out door installation)
BSEN 50618	Electric cables for photovoltaic systems (BT(DE/NOT)258),mainly for DC Cables
Earthing /Lightning	
IEC 62561/IEC 60634 Series (Chemical earthing) (as applicable)	IEC 62561-1: Lightning protection system components (LPSC) - Part: Requirements for connection components IEC 62561-2: Lightning protection system components (LPSC) – Part 2:Requirementsfor conductor sand earth electrodes IEC 62561-7: Lightning protection system components (LPSC) - Part 7:Requirementsforearthingenhancingcompounds
Junction Boxes	
IEC 60529	Junction boxes and solar panel terminal boxes shall be of the thermo-plastic type with IP 65 or betterprotectionforoutdooruse,andIP54 or better protection for indoor use

Section- E
Format and Annexure

F.1 Techno Commercial Bid Format (Envelope-A)

All pages of the Techno commercial Bid shall be organized section-wise, annexed with proof documents, serially numbered and stitched/or spiral bound intact and submitted)Loose pages shall not be accepted.

F1.1 Profile of the Bidder

S. No	Particulars	Bidder
1.	Name of the Company	
2.	Year of incorporation	
3.	**Registered office**	
	Address	
	Office Telephone Number	
	Fax Number	
	Contact Person	
	Name	
	Personal Telephone Number	
	Mobile Number	
	Email Address	
5.	**Local office(s) in Tamil Nadu**	
	Address	
	Office Telephone Number	
	Fax Number	
6.	**Tender signing authority**	
	Name	
	Address	
	Personal Telephone Number / Mobile No	
	Email Address	
	Please enclose Authorisation or Power of Attorney to sign and submit the Tender	
7.	Address for communications under the current Tender	

8.	**Registration Details**	
	Permanent Account Number	
	GST Registration Number	
9.	Banker's Name, Address and Account Number	

F1.2 EMD Details

#	Particulars	Please furnish details
1.	Name of the Bank	
2.	Demand Draft (DD) / Banker's Cheque No	
3.	DD/ Banker's Cheque Date	
4.	DD/ Banker's Cheque Amount	

F1.3 Furnish details for meeting the Eligibility Criteria

1) Details about Incorporation / Registration

#	Description	Bidder
1	Year of Incorporation /Registration	
please enclose the certificate of Incorporation/Registration		

2) Details about Annual Turnover

#	Audited years (from 2018-19)	Turnover		
		Bidder		
1				
*	Please enclose audited Balance sheets and Profit and Loss accounts for all the three specified audited years from 2018-19 towards meeting annual turnover criteria as per Tender Eligibility criteria.			

3) Details about minimum quantity installed

#	W.O reference with Name , Address & contact details of the Client	Quantity Installed (Nos)	Date of Commissioning
1.			
2.			
*	Please enclose Copy of Work Orders along with proof for satisfactory completion of that work.		

4) Details about the Blacklisting, if any

#	Description	Bidder
1.	Has the Bidder been blacklisted by any of the State/Central Government organisations or under takings of the State/ Central Government or Union Territories of India.	
*	Bidder shall submit the undertaking letter.	

F-2 Bidder's undertaking covering letter

(Letter shall be submitted on Bidder(s) Letter Head)

Date:

To
The General Manager
Tamil Nadu Energy Development Agency
V Floor, EVK Sampath Maaligai
68 College Road, Chennai-600006,
Tamil Nadu, India.

Dear Sir,

Sub:	Rate Contract tender for Supply, Installation, Commissioning and 5 years Comprehensive Maintenance of Grid Connected Rooftop Solar Power plants for a cumulative capacity of 10MWp in various Government buildings, Tamil Nadu - Regarding
Ref:	Tender reference:1079/ TEDA/GB-CAPEX/ 2022

****

1. Rate Contract tender for Supply, Installation, Commissioning and 5 years Comprehensive Maintenance of Grid Connected Rooftop Solar Power plants for a cumulative capacity of 10MWp in various Government buildings, Tamil Nadu as specified in the Tender. We undertake to meet the requirements and services as required and as set out in the Tender document.

2. We attach our Techno commercial Bid and Price Bid in separate sealed covers as required by the Tender both of which together constitute our proposal, in full conformity with the said Tender.
3. We have read the provisions of Tender and confirm that these are acceptable to us. We further declare that additional conditions, variations, deviations, if any, found in our response shall not be given effect to.
4. We undertake, if our Bid is accepted, to adhere to the requirements as specified in the Tender or such modified plan as may subsequently be agreed.
5. We agree to unconditionally accept all the terms and conditions set out in the Tender document and also agree to abide by this Bid response for a period as mentioned in the Tender from the date fixed for bid opening and it shall remain binding upon us with full force and virtue, until within this period a formal contract is prepared and executed. This Bid response, together with your written acceptance thereof in your notification of award, shall constitute a binding contract between us and TEDA.
6. We affirm that the information contained in the Techno commercial Bid or any part thereof, including its schedules, and other documents, etc., delivered or to be delivered to TEDA is true, accurate, and complete. This proposal includes all information necessary to ensure that the statements therein do not in whole or in part mislead TEDA as to any material fact.
7. We agree that TEDA is not bound to accept the lowest or any Bid you may receive. We also agree that you reserve the right in absolute sense to reject all or any of the products/service specified in the bid response without assigning any reason whatsoever.
8. It is hereby confirmed that I/We are entitled to act on behalf of our company/ organization and empowered to sign this document as well as such other documents, which may be required in this connection.
9. We agree to use only indigenous PV modules& Cells in this project.
10. We agree to Supply, Installation, Commissioning and 5 years Comprehensive Maintenance of Grid Connected Rooftop Solar Power

plants of cumulative capacity for a cumulative capacity of 10MWp in various Government buildings, Tamil Nadu**,** as per the tender specifications.

11. We also declare that our Company/Organization is not blacklisted by any of the State or Central Government organizations or undertaking of the State or Central Government or union territories of India.
12. We undertake to use the as per the standard stipulated in Clause 15 of section D.
13. We agree to accept the entire quantity allotted to us.

Signature of the authorized person:
Name of the authorized person:
Designation:
Name and Address of Bidder
Stamp of bidder
CERTIFICATE TO AUTHORISED SIGNATORIES as

I, certify that I am (Name) …… (Designation) ……,and that (Name)…… who signed the above Bid has been duly authorized to sign the same on behalf of our Company / Organization.

Date:

Signature:

Seal:

F-3 Bidder's undertaking for minimum quantity offered

(Letter shall be submitted on Bidder(s) Letter Head)

Date:

To
The General Manager
Tamil Nadu Energy Development Agency
V Floor, EVK Sampath Maaligai
68 College Road
Chennai-600006

Sir/Madam

Sub:	Rate Contract tender for Supply, Installation, Commissioning and 5 years Comprehensive Maintenance of Grid Connected Rooftop Solar Power plants for a cumulative capacity of 10MWp in various Government buildings, Tamil Nadu -Regarding
Ref:	Tender reference: 1079/TEDA/GB-CAPEX/2022

I/We undertake to Design, Supply, Install, Commission and to provide 5 year Comprehensive Maintenance for the specified quantities of Grid Connected Solar Power plants quoted by us and for any additional allotment given to us.

I/We am/are aware that if I/We do not accept to, Supply, Installation, Commission and to provide the 5 year Comprehensive Maintenance for the Grid Connected Solar Power plants as mentioned above, my/our Bid is liable for rejection.

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

F-4 Model Form of Contract

To be executed in a Rs.100- Non-judicial Stamp paper bought in Tamil Nadu by the Successful Bidder for Rate Contract tender for Supply, Installation, Commissioning and 5 years Comprehensive Maintenance of Grid Connected Rooftop Solar Power plantsfor a cumulative capacity of 10MWp in various Government buildings, Tamil Nadu (NO FIGURES IN NUMERALS OR WORDS SHALL BE FILLED UP IN THIS SAMPLE FORM AT THE TIME OF SUBMISSION OF TENDER)

CONTRACT

This Contract is entered into at --------- on the ..... day of _____ 2022 between the TEDA ---------- having its Registered office ---------- Tamil Nadu, India, (Which term shall mean and include its successors and permitted assigns) herein after referred to as "Implementing Agency" and ....., a Company registered under .....and having its Registered office at ..... hereinafter referred to as the Contractor (Which term shall mean and include its successors and permitted assigns).

Whereas TEDA on behalf of Government Departments invited a tender vide Tender Ref. No. _____for Supply, Installation, Commissioning & 5 year Comprehensive Maintenance of Grid Connected Solar Rooftop Power plants for a cumulative capacity of 10MWp in various Government buildings, Tamil Nadu, the Contractor was selected as per the specified terms and conditions.

This document on having been signed by both the parties shall constitute a binding contract between the parties and shall remain in force for a period of five years. But in the event of any breach of the Contract at any time on the part of the Contractor, the contract shall be terminated by the Tamil Nadu Energy Development Agency without compensation to the Contractor. The contract may also be put to an end at any time by the Implementing Agency upon giving seven days notice to the Contractor.

The contractor agrees for the Supply, Installation, and Commissioning & 5 year Comprehensive Maintenance of Grid Connected Solar Rooftop Power plants for a -------capacity in -------Government buildings, Tamil Nadu as per the Terms & Conditions given below.

1. Installation & Completion Schedule

The entire work involving Supply, Installation, Commissioning & 5 year Comprehensive Maintenance of Grid Connected Solar Rooftop Power

plants of ----in ------ Government Department buildings, Tamil Nadu, should be completed within 90 days from the date of granting permission by the concerned officials for carrying out the works.

2. Insurance

The Successful Bidder(s) shall take an insurance policy for transit-cum-storage- cum-erection for all the materials to cover all risks and liabilities for supply of materials on site basis, storage of materials at site, erection, testing and commissioning. The Bidder shall also take appropriate insurance during the CMC period.

The Contractor has to submit the Insurance Policy covering CMC period risks as mentioned above for the period of five years to TEDA immediately after commissioning of the project, failing which, the payment towards installation and commissioning part will not be released till the insurance policy is submitted.

3. Price Schedule:

Sl.No.	Description	Capacity Range	Basic price (Rs) (A)	GST (Rs) (B)	Total Project Cost (Rs) C=(A)+(B)
1.	Supply, Installation, Commissioning & 5 year Comprehensive Maintenance of Grid Connected Solar Rooftop Power plants.	1kW -3kW			
2		>3kWupto 10kW			
3		>10kW upto100kW			
4		>100kW upto500kW			

4. Handing over

a) The Contractor should handover the Power plants in complete shape to the officials concerned of the concerned Government officials on the same day of Installation & Commissioning, through suitable handing over and taking over format.

b) Hands on Training on maintenance of Grid Connected Solar Rooftops Power Plant shall be arranged for the officials/ Staff of Government Department by the Contractor.

5. Comprehensive Maintenance Charges for 5 years.

a) Comprehensive Maintenance charge for 5 years is fixed at 10% of the total project cost @ 2% per year. CMC should begin from the very next month after the installation & commissioning and meticulous records of the same shall be maintained.

b) The Contractor should provide 5 years comprehensive maintenance of the Grid Connected Solar Rooftop Power Plants which should include corrective maintenance, repair (or) replacement free of cost at site.

c) The service personnel of the Contractor will make routine maintenance visits quarterly for first year & subsequently half yearly till the completion period of comprehensive maintenance. The maintenance should include thorough testing & replacement of any damaged parts. Apart from this, any complaint registered/ service calls received or faults notified, the service personnel should reach the site within 2daysandattendtothedefectsor fault sand rectify the same (or) replacethefaultysystemsifneededwithin7days.`

d) The deputed personnel should be in a position to check and test all the components regularly, so that preventive actions, if any, could be taken well in advance to save any component from damage.

e) Normal and preventive maintenance such as cleaning of module surface, tightening of all electrical connections of the Grid Connected Solar Rooftop Power Plants are also the duties of the deputed personnel during maintenance visits.

f) During the comprehensive maintenance period of the SPV rooftop systems, if there is any loss or damage to any component due to mismanagement/mishandling or due to any other reasons pertaining to the deputed personnel, what-so-ever, the Bidder should be responsible for immediate replacement/rectification. The damaged component may be repaired or replaced by a new component.

g) The maintenance should include replacement of all parts. If the Grid Connected Solar Rooftop Power plants are not functional, the same should be repaired / restored / replaced within 7 (seven) days.

h) TEDA reserves the right to claim damages and Costs for non-fulfillment of warranty, apart from forfeiting un-paid amount if any, in the event of unsatisfactory maintenance.

i) If the contractor fails to rectify the defect(s) and restore the SPV plants to good working condition within the period specified above, then a penalty of Rs. 500 per day of the breakdown period beyond 7 days will be levied.

j) The Contractor should furnish the routine maintenance reports within 15 days at the end of each maintenance period as mentioned above. Failure to do so, it will be presumed that no Comprehensive maintenance works were carried out by the Contractor and CMC charges will not be released or BG's will be en-cashed as the case may be.

6. Liquidated Damages

1) If the contractor fails to commission the plants as per the Installation & Completion schedule specified, Liquidated Damages at the rate of 1% per completed week on the value of the unfinished / non commissioned quantity of the work order will be levied subject to a maximum of 10%. The Liquidated Damages amount will be automatically deducted from the Bills submitted by the contractor. If the installation is not completed, Tamil Nadu Energy Development Agency will make alternate

arrangements and the cost incurred by Tamil Nadu Energy Development Agency for doing the same will be recovered from the contractor.

7. Warranty

1. (a) The SPV panel should carry a warranty of minimum 25 years.
   (b) The SPV panel must be warranted for their output peak watt capacity which should not be less than 90% at the end 10 years and 80% at the end of 25 years
   (c) The grid tie solar inverter should carry a warranty of minimum 5 years.
2. The Grid Connected Solar Rooftop power plants installed and commissioned should be under a warranty against any manufacturing defect for a period of 60 months from the date of Commissioning.
3. The mechanical structures, electrical works including /inverters/ maximum power point tracker units/ distribution boards/digital meters/ switchgear etc. and overall workmanship of the Grid Connected Solar Rooftop power plants must be warranted against any manufacturing/ design/ installation defects for a minimum period of 5 years.
4. The warranty will be against breakages, malfunctions, non fulfillment of guaranteed performance and breakdowns due to manufacturing defects or defects that may arise due to improper operation of electrical / electronic components of the plants but do not include physical damages by the end users.
5. The above warranty will take effect from the date on which the plant is taken over by the concerned govt. department after commissioning.
6. The contractor is liable to make good the loss by replacing the defective product during the warranty period for the entire plant free of cost, failing which TEDA will deduct the amount from the amount retained by TEDA as per Payment terms and also the bidder will be blacklisted.

7. The warranty will cover all the materials and goods involved in the installation and commissioning of Grid Connected Solar Rooftop plants by the contractor under this contract irrespective of the fact whether these have been manufactured by the Contractor or not. The decision in this regard by TEDA is final and binding on the successful bidder

8. Payment Terms

1.All payments will be made in INR only.
2.No advance will be paid or no letter of credit will be issued.

3.(a) 90% total project cost will be made on satisfactory Commissioning with net metering & completion certificate by TEDA.

(Or)

80% total project cost will be made on satisfactory installation provided that the delay on pending installation of net meter by TANGEDCO is beyond 30 days and 10% total project cost will be made after satisfactory commissioning with installation of net meter.

4.10% of the total project cost (ie) Comprehensive Maintenance Contract payment will be made annually @ 2% subject to fulfillment of Warranty or Comprehensive Maintenance obligations.

5. If the Duties and/or Taxes have been reduced retrospectively, the Contractor is liable to return the same.

6. The contractor will have full and exclusive liability for payment of all Duties, Taxes and other statutory payments payable under any or all of the Statutes/Laws/Acts etc now or hereafter imposed.

9. Product Take Back & Recycling

Proper decommissioning and recycling of SPV panels& electronics etc., are necessary to ensure that harmful materials are not released into the environment. Hence the Contractor should submit an under taking for product take back after expiry of their life.

10. Force Majeure

Neither TamilNadu Energy Development Agency nor the Contractor shall be liable to the other for any delay or failure in the performance of their respective obligations due to causes or contingencies beyond their reasonable control such as:

Natural phenomena including but not limited to earthquakes, floods and epidemics.

Acts of any Government authority, domestic or foreign including but not limited to war declared or undeclared, priorities and quarantine restrictions.

Accidents or disruptions including, but not limited to fire, explosions, breakdown of essential machinery or equipment, power and water shortages.

11. Workmen's Compensation Insurance

1) This insurance should protect the Contractor against all claims applicable under the Workmen's Compensation Act, 1948(Government of India). This policy shall also cover the Contactor against claims for injury, disability disease or death of its or its Sub-Contractor's employees, which for any reason are not covered under the Workmen's Compensation Act, 1948. The liabilities will not be less than that of Workmen's Compensation.
2) **Compensation:** The contractor should arrange to exercise effective supervision over the works so as to ensure safety to the men and materials. In the case of accidents to the workmen arising out of and in the course of employment, the contractor shall pay necessary compensation to them according to the workman's compensation act, besides arranging immediate medical aid. He shall indemnify TamilNadu Energy Development Agency against any liability whatsoever in this regard and execute a bond accordingly. In case, the contractor fails to pay the compensation within the reasonable time, the TamilNadu Energy Development Agency may settle the claim and arrange to recover the same from the contractor.

12. The following documents will be deemed to form and be read and constructed as part of this Contract.

a. Technical Specifications
b. Tender Terms and Conditions
c. Amendments issued by TEDA for the Tender document
d. Corrigendum/Clarifications issued by TEDA for the Tender document
e. Detailed final offer of the contractor
f. Work Order(s) issued by TamilNadu Energy Development Agency from time to time
g. Correspondence made by TamilNadu Energy Development Agency to the contractor from time to time during the period of the contract.

Wherever the offer conditions furnished by the Contractor are at variance with conditions of this contract or conditions stipulated in the work order, the latter shall prevail over the offer conditions furnished by the Contractor.

13. Waiver of any terms and conditions by TamilNadu Energy Development Agency in writing will not have the effect of waiving or abandoning other terms and conditions of the contract.

14. (a) Unless otherwise provided in the Contract, any notice, request, consent or other communication given or required to be given hereunder should be given by mailing the same by registered mail, postage prepaid to TamilNadu Energy Development Agency at its registered office

(b)Any notice to the Contractor will be deemed to be sufficiently served, if given or left in writing at their usual or last known place of abode or business.

15. Termination of Contract

15.1 Termination for Default

a) TEDA may without prejudice to any other remedy for breach of contract, by written notice of default with a notice period of 7 days, sent to the Successful Bidder, terminate the contract in whole or part with the forfeiture of EMD/SD, (i) if the Successful Bidder fails to supply, install and commission the Grid connected Rooftop systems within the time period(s) specified in the Contract, or fails to fulfil the requirements as per the Installation and Completion Schedule or within any extension thereof granted by the TEDA; or (ii) if the Successful Bidder fails to perform any of the obligation(s) under the contract; or (iii)The Bidder shall observe highest standard of ethics during execution of the project .The Tender Accepting Authority will terminate the contract if it is determined in the judgment of TEDA, the Bidder awarded with the contract, has engaged in fraudulent and corrupt practices in competing for or in executing the Contract.

b) In the event TEDA terminates the Contract in whole or in part, TEDA may opt upon terms and in such manner as it deems appropriate, the services of the other bidders and the Successful Bidder shall be liable to TEDA for any additional costs due to this. However, the Successful Bidder shall continue to perform the contract to the extent not terminated.

15.2 Termination for Insolvency

TEDA may at any time terminate the Contract by giving written notice with a notice period of 7 days to the Successful Bidder, if the Contractor becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the Contractor, provided that such termination will not prejudice or affect any right of action or remedy that has accrued or will accrue thereafter to TEDA

15.3 Termination for Convenience

TEDA may, by written notice, with a notice period of seven days sent to the Successful Bidder, may terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination should specify that termination is for TEDA's convenience, the extent to which performance of work under the Contract is terminated, and the date upon which such termination becomes effective. On termination, the Successful Bidder is not entitled to any compensation whatsoever.

1. In case of failure by the Contractor to commission the grid Connected solar Rooftop systems within the period specified as per the schedule or in case of installations made by them, not being of the stipulated quality and specifications, TEDA shall have the power to reject any such installations.
2. In case of any dispute, the matter will be referred to a sole Arbitrator to be appointed by TEDA in accordance with the Arbitration and Conciliation Act 1996. The arbitration shall be held in Chennai, India and the language English only.

16. Blacklisting

i) Under no circumstances should the contractor backs out after the award of work. The contractor who does so, resulting in recalling of tenders by the TamilNadu Energy Development Agency or any additional expenditure to TamilNadu Energy Development Agency, will not only lose his EMD/SD and also will be blacklisted by TamilNadu Energy Development Agency which reserves the right under the law to recover damages resulting there from.

ii) The Contractor will be banned from all business dealings with TamilNadu Energy Development Agency if the particulars produced by him/her such as Auditor Certificate, Annual Account, GST Clearance and if the Test Certificates furnished by him/her /are found to be false.

iii) The Contractor is liable to make good the loss by replacing the defective product during the CMC for the entire system free of cost, failing which TamilNadu Energy Development Agency will deduct the amount retained by TamilNadu Energy Development Agency as per payment terms and will blacklist the Contractor.

17. Generation Guarantee

a. The Contractor shall provide a minimum generation guarantee corresponding to a capacity utilization factor (CUF) of 17% (the "Guaranteed CUF") with respect to the DC capacity of the PV system.
b. This Guaranteed CUF shall be calculated on an annual-basis and shall be verified by the TEDA at the end of each year during the 5 (five) year guarantee period.
c. The TEDA will recover an amount at the rate of Rs. 8.00 per kWh/ TNERC fixed rate from the Contractor for such shortfall at the end of the contract year to compensate the same to the Government Department.
d. In case of energy generation corresponding to less than the Guaranteed CUF, It is clarified that the penalty for loss in generation shall not be duplicated with the penalty for delay in rectification of fault beyond 48 hours of complaint.

18. Contract Validity

The validity of the Contract is one year from date of issue of Letter of Intimation (LoI).

19. Subject to the above, the Courts at Chennai alone shall have Jurisdiction in the matter.

In Witness whereof the parties hereto have signed on the day, month and year above written in the presence of

For and on behalf of Tamil Nadu Energy Development Agency	For and on behalf of Successful Bidder
Witnesses: 1.	Witnesses: 1.
2.	2.

5 DRAFT UNDERTAKING IN LIEU OF E.M.D.

(To be furnished in non-judicial stamp paper of value not less than Rs.80/)

THIS DEED OF UNDERTAKING EXECUTED AT _____ ON THIS THE _____ DAYOF _____ TWO THOUSAND AND Nineteen BY M/S._____ a company registered under companies Act 1956, having its registered office at _____ hereafter called "Bidder" (which expression shall where the context so admits mean and include their Agents, Representatives, Successors-in-office and Assigns)

TO AND IN FAVOUR OF TAMIL NADU ENERGY DEVELOPMENT AGENCY having its office at 5th Floor, EVK Sampath Maaligai, 68, College Road, Chennai – 600 006, herein called the "TEDA" (which expression shall where the context so admits mean and include its successors in office and Assigns).

WHEREAS the Bidder is required to pay Earnest Money Deposit of Rs._____ for participation in the tender for supply and installation of _____in terms of specification No. _____

AND WHEREAS the Bidder is exempted from payment of EMD as per _____, subject to the Bidder executing an undertaking to the value of Rs._____ (Rupees _____only) representing the amount equivalent to the amount of EMD specified to be paid to TEDA in the event of non-fulfillment or breach of any of the conditions of the tender by the Bidder as mentioned hereunder.

AND WHEREAS in consideration of the acceptance by TEDA of the above proposal, the Bidder has agreed to pay to TEDA the said amount of Rs._____ in the event of :-

i. Withdrawing his tender before the expiry of the validity period
ii. Withdrawing his tender after acceptance or fails to remit the Security Deposit.
iii. Violating any of the conditions of the tender issued by the competent authority.

NOW THE CONDITION OF THE above written undertaking is such that if the Bidder shall duly and faithfully observe and perform the conditions specified as above, then the above written undertaking shall be void, otherwise it shall remain in full force.

The Bidder undertakes not to revoke this guarantee till the contract is completed under the terms of contract.

The expression, 'Bidder' and 'TEDA' hereinafter before used shall include their respective successors and assign in office.

IN WITNESS WHERE OF THIRU_____ acting for and on behalf of the Bidder has signed this deed on the day, month and year herein before first mentioned.

SIGNATURE

NAME IN BLOCK LETTERS

SEAL OF THE COMPANY

In the presence of Witnesses

Signature

Name and Address

Signature

Name and Address

F-6 Letter certifying the number of pages in bid documents

(Letter should be submitted on Bidder's Letter Head)

Date:
To
The General Manager
Tamil Nadu Energy Development Agency
V Floor, EVK Sampath Maaligai
68 College Road
Chennai-600006

Sub	Rate Contract tender for Supply, Installation, Commissioning and 5 years Comprehensive Maintenance of Grid Connected Rooftop Solar Power plants of cumulative capacity for a cumulative capacity of 10MWp in various Government buildings, Tamil Nadu
Ref:	Tender reference: 1079/TEDA/GB-CAPEX/2022

I hereby certify that our bid documents have been submitted in bound volumes as follow.

Techno Commercial bid Volume – I : Page 1 to Page _____
Volume – II(if any) : Page 1 to Page _____
Volume – III(if any) : Page 1 to Page _____

Price bid **:** Page 1 to Page _____

Signature of the authorized person:
Name of the authorized person:
Designation:

Name and Address of Bidder
Stamp of bidder

F-7 Price Bid (Envelope – B)

PRICE BID FOR SPV POWER PLANTS

The cost of SPV power plants shall include components as per the stipulated specification, including cables, MCBs, switches, fuses etc., as per the site requirement.

Sl. No.	Description	Capacity Range	Basic price (Rs) (A)	GST (Rs) (B)	Total Project Cost (Rs) C=(A)+(B)
1.	Supply, Installation, Commissioning & 5 year Comprehensive Maintenance of Grid Connected Solar Rooftop Power plants.	1kW -3kW			
2		>3kWupto 10kW			
3		>10kW upto100kW			
4		>100kW upto500kW			

- The price(s) indicated in price bid (Envelope-B) is only considered for Evaluation of price Bid.
- The cost breakup is only for reference.

Rupees in words for

1. 1kW upto 3kW System ----------

2.>3kW upto 10kW System----------

3. >10kW upto100kW----------

4. >100kW upto500kW----------

Cost is inclusive of all taxes, insurance, octroi, transportation, loading-unloading, installation, testing, commissioning & 5 years CMC and allied activities. The amount of GST and percentage shall be indicated explicitly & separately.

(Signature of the authorized signatory)

Date: **Name**_____

Designation_____

Place: Company seal

BILL OF MATERIAL

Supply, Installation and Commissioning & 5 year Comprehensive Maintenance of Grid Connected Solar Rooftop Power plant per kWp

Sl. No	Description	>3kW upto 10kW	>10kWupto 100kW	>100kWp upto500kWp
1.	SPV Module			
2.	Module Mounting Structure			
3.	Grid – Tie Solar Inverter			
4.	Cables			
5.	Others, if any (shall be indicated separately)			
6.	Ex-works price (sum of 1 to 5)			
7.	Packing & forwarding, Freight & Insurance for transit and 5 year CMC period charges etc.(shall be indicated separately)			
8.	Duties/Taxes (shall be indicated separately with %)			
9.	All inclusive price of system (sum of 6 to 8)			
10.	Installation & Commissioning Charges			
11.	System cost (sum of 9 & 10)			
12.	Comprehensive Maintenance charges for 5 years at 10% of the system cost**			
13.	Total project Cost for system including CMC for 5 years (sum of 11 & 12) (Rupees)			
14.	Total cost offered in Rs. (in Words)			

Note: 1. In case of discrepancy between the costs quoted in Words and in Figures, the lower of the two will be considered. (Total cost offered shall be both in figures and in words).

(Signature of the authorized signatory)

Date: **Name**_____

Designation_____

Place: Company seal

Note: 1. In case of discrepancy between the costs quoted in Words and in Figures, the lower of the two will be considered.(Total cost offered shall be both in figures and words).

Annexure-1: EMD EXEMPTION

i) The Small Scale Industrial units located within the State and Registered with the Tamil Nadu Small Industries Development Corporation/NSIC/MSME for the manufacture of items such as SPV Cells/Modules or PV System Electronics(Inverter only) manufactured by them

ii) The SSI units holding Permanent Registration certificate from the District Industries Centres of Directorate of Industries and Commerce in respect of manufacture of those items as stated in (i) above for which the Registration Certificate has been obtained.

iii) Departments of the Government of Tamil Nadu.

iv) Undertakings and Corporations owned by Government of Tamil Nadu.

v) Labour Contract Co-operative Societies registered within Tamil Nadu.

vi) Tiny Industries classified under SSI, registered with the State of Tamil Nadu, and Registration Certificate issued by Department of Industries and Commerce/Government of Tamil Nadu for the manufacture of items such as SPV Cells/Modules or PV System Electronics(Inverter only) manufactured by them.

vii) Small Scale Industrial units located outside the State but registered with National Small Industries Corporation (NSIC/MSME in respect of the items such as SPV Cells/Modules or PV System Electronics(Inverter only) manufactured by them.

viii) The Small Scale Industrial units located within the State and Registered with the Tamil Nadu Small Industries Development Corporation / NSIC / MSME as a PV System Integrator.

Annexure: 2

Tentative Location Details

Name of the Department	**Capacity (kW)**
10 Central Prisons	920
Various District Courts (Thanjavur,Theni,Tiruppur,Ramnadu, Perambalur,Karur,Pudukottai,Cuddalore & Vellore)	1247
Rurban Buildings, Singaperumal Koil Clusters,Kattankolathur Panchayat	67
VOC Port Trust	380
Medical ware house	500
National Health Mission	
Animal Husbandry	
Total	**2614**

Further locations will be intimated later.