



	<h1>Government of Tamil Nadu</h1>
	<p>Price Discovery Tender for empanelment for Supply, Installation and Commissioning of Grid tied Solar Rooftop Power plants in Tamil Nadu Under Hon'ble Chief Minister's Solar Rooftop Capital Incentive Scheme for 10,000 Domestic consumers International Price Discovery Bidding</p> <p>Tender reference: TEDA/ 3650 /SPV – 1kWp /CIS/2013-14 Advertised on 02.12.2013</p> <p>Tender Details</p>
	<p>Tamil Nadu Energy Development Agency</p> <p>V Floor, EVK Sampath Maaligai 68 College Road Chennai-600006(INDIA) Phone: +91-44-28224830/28236592 Fax: +91-44-28222971 Email: tender@teda.in Website: www.teda.in</p>

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ACRONYMS		
#	Parameter	Details
1.	AC	Alternating Current
2.	BIS	Bureau of Indian Standard
3.	BoS	Balance of System
4.	CMC	Comprehensive Maintenance Charges
5.	DC	Direct Current
6.	DIN	Deutsche Industrie Norm
7.	IEC	International Electro Technical Commission
8.	MPPT	Maximum Power Point Tracking
9.	NABL	National Accreditation Board for testing and calibration Laboratories
10.	PCU	Power Conditioning Unit
11.	PWM	Pulse Width Modulation
12.	RFID	Radio Frequency Identification
13.	STC	Standard Testing Conditions
14.	TEDA	Tamil Nadu Energy Development Agency
15.	THD	Total Harmonic Distortion

SHORT TITLES USED IN THE TENDER DOCUMENT		
1.	Bidder	Bidder means the party (or) Consortium of parties by parties 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.	Service Centre	Service Centre means the centre or place, wherein the Bidder, inter-alia undertakes and performs the service activities relating to the solar Rooftop systems indicated in the Tender and shall include a Direct service centre or Authorized service centre.
5.	Authorized Service Centre	Authorized Service Centre means a Service Centre run by the Bidder through another party by entering into a valid commercial agreement.
6.	Testing Agency	Testing Agency notified by TEDA for the purpose of

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		sample testing.
8.	Cost	Cost means the total cost to be incurred towards the supply, installation, commissioning and 5 years comprehensive maintenance of SPV Rooftop Systems.
9.	Purchaser	Purchaser means the domestic applicant for whom the price discovery made through this Tender.
10.	TEDA	Tamil Nadu Energy Development Agency - the Implementing agency on behalf of Government of Tamil Nadu for this scheme.
11.	Commissioning	Commissioning means the Rooftop would have to be energized through SPV system and the functioning has to be tested.
12	Domestic Applicant	Sanctioned applicant under this scheme who intends installing a grid tied solar rooftop power plants.

CHECKLIST FOR ENCLOSURES

(Bidder shall fill up YES or NO without fail)

#	Bid Enclosures	YES NO	or 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 F6.		
3.2	Letter certifying number of pages in bid document as per format F7		
3.3	Bidder's undertaking covering letter as per Format F3 in the Letter Head signed by the authority & stamped.		
3.4	Filled up Technical Bid signed by the authority & stamped		
3.5	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 or In case of Consortium, Certificate of Incorporation/ Registration of all the partners in the Consortium		

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#	Bid Enclosures	YES NO	or	Page No.
	b) In case of Consortium / Copy of Consortium Agreement / A letter of intent to execute a Consortium Agreement signed by all the partners along with the copy of the proposed Consortium Agreement .			
	c) Bidder's undertaking for using indigenous SPV modules			
	d) Relevant proof for manufacturer or PV System Integrator			
	e) Annual Report including Balance Sheet and Profit & Loss accounts for any one of the audited years from 2009 -10. In case of Consortium/ Annual Report including Balance Sheet and Profit & Loss accounts of the Consortium partners for any one of the audited years from 2009 – 10, towards meeting the annual turnover criteria. (or) Latest Annual Report including audited Balance Sheet and Profit & Loss accounts towards meeting the criteria on investment made on plant & machinery.			
	f) Copy of Work Orders along with proof for satisfactory completion of that work.			
	g) Bidder's undertaking letter for not currently blacklisted			
3.6	Following Test Certificates / Reports as per clause 15			
	i) SPV Modules			
	IEC 61215 / IS 14286			
	IEC 61730 Part 1 & 2			
	IEC 61701			
	STC Performance Report from accredited laboratories			
	ii) Solar Grid –Tie Inverter			
	IEC61683 & IEC60068-2(1,2,14,30)			
	Anti-Islanding protection As per VDE 0126-1-1 or IEC60255.5 or equivalent standards			
	Safety Compliance IEC 62103, IEC 62109-1 & 2 , Galvanic Isolation			
	iii) BALANCE OF SYSTEMS (Certificates or Letter of Undertaking)			
	a) Cables- IEC 60227/IS 694, IEC 60502/IS 1554(Pt.I& II)			

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#	Bid Enclosures	YES NO	or	Page No.
	b) Switches / Circuit Breakers/ Connectors – IS/ IEC 60947 part I,II,III & EN 50521			
	c) SPD – As per IEC 60364-5-53			
	d) Junction Boxes/Distribution boxes- IP 65 for Outdoor and IP 54 for indoor			
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?			

IMPORTANT NOTE:

Bidders must ensure that they submit 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 or test certificate are liable to be rejected. The data sheet for the critical components shall be submitted by the Bidder for the scrutiny.

Bid documents shall be **page numbered & bound**. Any loose documents or documents which are not page numbered shall not be accepted.

SECTION –A

TENDER ELIGIBILITY AND INSTRUCTIONS

1. INTRODUCTION

The Government of Tamil Nadu has issued orders vide G.O. Ms. No.102 Energy (E1)Department Dated 18.10.2013 , for implementation of “Hon'ble Chief Minister's Solar Rooftop Capital Incentive Scheme”. Under this scheme, a capital incentive of Rs. 20,000 will be provided towards installation of Grid tied battery less Solar Rooftop Photovoltaic power plants of 1kWp capacity for 10,000 Domestic consumers. The generated Solar power from the rooftop shall be consumed in the premises and the excess power if any , could be fed into the grid as per the grid connectivity specified in TNERC Order dated 13.11.2013 on Net metering.

On behalf of domestic consumers under this scheme therein after called purchasers, TEDA therefore calls for International Price Discovery Bidding for empanelment for Supply, Installation and Commissioning of Solar Rooftop Power plant in Tamil Nadu Under Hon'ble Chief Minister's Solar Rooftop Capital Incentive Scheme for 10,000 Domestic consumers. Bidders can quote for one or more of 1kWp,2 kWp,5 kWp & 10 kWp grid tied SPV systems.

The list of Successful bidder(s) along with their prices, installation experience and annual turnover shall be uploaded in the TEDA website so that each purchaser shall have the freedom to select the bidder of his/her choice from the final list uploaded by TEDA .The purchaser shall issue work order directly to the bidder.

The Successful Bidder(s) shall work closely with the Government of Tamil Nadu departments involved in implementing the above work and ensure success of the programme. Installations will have to be done within 90 days of receipt of work orders from the purchasers.

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The project pertains to a clean/ RE project (Solar Energy) intended to reduce carbon emissions. The project is not viable without consideration of the Clean Development Mechanism (CDM) revenue. The CDM benefit will be availed by TEDA.

2. TENDER DATA SHEET		
1	Tender inviting Authority, Designation and Address	The General Manager Tamil Nadu Energy Development Agency V Floor, EVK Sampath Maaligai, 68 College Road, Chennai-600006 (INDIA) Phone: +91-44-28224830/28236592 Fax: +91-44-28222971 Email: tender@teda.in Website: www.teda.in
2	Name of the Work	Price Discovery Tender for Supply, Installation and Commissioning of Grid tied Solar Rooftop Power plants in Tamil Nadu Under Hon'ble Chief Minister's Solar Rooftop Capital Incentive Scheme for 10,000 Domestic consumers.
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	Place of execution	Various residences/apartments of 10,000 domestic consumers all over TamilNadu(INDIA)
3	Place and due date for obtaining Tender documents	On all working days between 11.00 A.M. and 5.00 P.M. up to 02.01.2014 at the Address mentioned in (1) above. Alternatively, Tender documents can be downloaded free of cost from www.teda.in and www.tenders.tn.gov.in
	Cost of Tender Document	INR 1000/-(Rupees One Thousand only) per Tender Document for direct purchase from TEDA. The Tender document fee is waived for the downloaded Tender Document.
4	Earnest Money Deposit (EMD)	INR 1 Lakh EMD has to be paid in Indian Rupees by way of Demand Draft or Banker's Cheque only.
5	Pre-Bid meeting date and place	On 16.12.2013 @ 11.00 A.M. At the address mentioned in column (1) above
6	Due Date, Time and Place of submission of Tender	Upto 03.01.2014 at 2.00 P.M. At the address mentioned in column (1) above
7	Date, Time and Place of Tender opening	03.01.2014 at 2.00 P.M. At the address mentioned in column (1) above
8	Date, Time and Place of opening of Price Bids	Will be intimated only to the bidders qualified in Techno commercial bid.

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If any of the above dates happens to be a holiday, the 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 Earnest Money Deposit (EMD)

- a) An EMD amount as specified in the Tender Data sheet shall be paid in Indian Rupees by way of Demand Draft or Banker's Cheque only, from any of the Nationalized/ Scheduled /Foreign 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 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(s) 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/ by way of Bank Guarantee, 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 and to remit Security Deposit within the due dates specified in the tender.

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- 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 **A-2**.
- h) Industries exempted from payment of EMD shall enclose duly attested Photostat copy of their Registration Certificate showing the **materials (Solar)** they are permitted to manufacture/to do rendering services 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 E.M.D 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 F-6, 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 as specified in clause A-2 shall be kept in the EMD cover. TENDERS RECEIVED WITHOUT PROOF FOR EXEMPTION OF EMD AND UNDERTAKING WILL NOT BE READOUT AND WILL BE **REJECTED SUMMARILY**.

4. TENDER ELIGIBILITY CRITERIA

The Bidder(s) shall meet the following Eligibility Criteria to participate in the Tender and shall enclose documentary proof for fulfilling the Eligibility in the Techno commercial Bid.

S. No	Minimum Eligibility Criteria	Proof to be submitted for fulfilling the Eligibility Criteria
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S. No	Minimum Eligibility Criteria	Proof to be submitted for fulfilling the Eligibility Criteria
1.	<p>(a)The Bidder/its wholly owned subsidiary shall be A Registered Manufacturing Company/ Firm in India of SPV Cells/Modules OR Battery OR PV System Electronics. OR A Registered PV System Integrator in existence for at least past one audited year.</p>	<p>Certificate of Incorporation or Registration and relevant proof for manufacturing company or firm or PV system Integrator shall be submitted.</p>
	<p>b) Consortium not exceeding three partners. Each partner of the Consortium shall be a Registered Company / Firm in existence for at least past one audited year. The prime Bidder amongst the consortium partners shall be either a registered manufacturing company/ Firm in India of SPV cells / Modules or Battery or PV systems Electronics. OR a registered PV system integrator.</p>	<p>i. Certificate of Incorporation / Registration of all the partners shall be submitted. ii. Relevant proof for a prime bidder is a manufacturing company/firm or PV system Integrator shall be submitted. ii. Copy of consortium agreement shall be submitted (OR) A letter of intent to execute a consortium agreement in the event of a successful bid shall be signed by all the partners and submitted with the Bid together with the copy of the proposed consortium Agreement. iv. In case of Consortium, all partners of the consortium shall be liable jointly and severally for the execution of the contract in accordance to the contract terms and a statement to this effect shall be included in the letter of intent.</p>
2.	<p>The Bidder shall use only SPV modules manufactured in India</p>	<p>Necessary undertaking letter shall be submitted from the module manufacturer.</p>

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S. No	Minimum Eligibility Criteria	Proof to be submitted for fulfilling the Eligibility Criteria
3.	Bidder or Consortium shall have a minimum turnover of Rs. 50 Lakhs in any one of the audited years from 2009-10. Turnover of Parent Company is allowed.	<p>a) Annual Report(auditor report and Director report)</p> <p>b) Balance Sheet &</p> <p>c) Profit & Loss accounts</p> <p>For any one of the audited year from 2009-10 shall be submitted towards meeting annual turnover criteria.</p>
4.	Bidder shall have installation experience of 20 Solar Rooftop systems of min 1kWp each in India or cumulative 50kWp of Solar PV systems with a minimum of 5 installations spread across India in the last five years (SPV systems installed with a minimum period of 3 months prior to the date of bid submission will only be considered) & these systems shall be working satisfactorily. (Lanterns not allowed)	Copy of Work Orders and performance certificate for satisfactory function of those SPV systems obtained from the end user if the system cost was paid by the end user or from the government agency
5.	Various components of the SPV system shall conform to the MNRE standards as per Section-'D'	Copy of test certificates along with reports for SPV module, Solar Grid Tie inverter shall be submitted.
6.	Bidder(s) shall not be currently blacklisted by any of the State or Central Government or organizations of the State or Central Government or Union Territories of India as on date of submission of tender	Necessary Undertaking letter shall be furnished.

Special Conditions for the Consortium

- 1) Among the consortium partners, the Prime Bidder submits the Bid with the Power of Attorney signed by the legally authorized signatories of all the partners authorizing the Prime Bidder in this regard.
- 2) In case of a successful Bid, the Agreement shall be signed by the Prime Bidder so as to be legally binding on all the partners.

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- 3) The Prime Bidder shall be authorized by the Consortium partners to act on their behalf to incur liabilities and receive instructions for and on behalf of him and all partners of the consortium and entire execution of the contract including payment shall be done exclusively to the Prime Bidder.
- 4) All partners of the consortium shall be liable jointly and severally for the execution of the contract in accordance to the contract terms and a statement to this effect shall be included in the authorization mentioned above as well as in the Bid and in the agreement (in case of successful bid). The consortium agreement shall indicate precisely the role of the members of the consortium in respect of the contract.
- 5) Copy of the consortium agreement shall be submitted with the Bid. Consortium agreement shall be registered in India.
- 6) Alternatively a letter of intent signed by all the partners to execute a consortium agreement in the event of a successful bid shall be submitted with the bid together with the copy of the proposed agreement. The consortium agreement shall be registered before execution of agreement with TEDA so as to be legally valid and binding on all partners.
- 7) Auditor Certificate has to be submitted for share holding pattern
- 8) Only one Bid will be allowed from a Consortium. The partners of a Consortium are not allowed to bid individually or to be the partner of another Consortium.

Special Conditions for Foreign Companies

Foreign company shall participate in the bid only by forming Consortium with Indian company(s).

5. Instructions to the Bidder

5.1 General Instructions

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- a) 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 empanelment.
- b) The Bidder shall make all arrangements as part of the contract for Supply, Installation, Commissioning and 5 years Comprehensive Maintenance of SPV Rooftop systems and train the beneficiaries at various locations at their own cost.
- c) The list of Successful bidder(s) along with their prices, installation experience and annual turnover will be uploaded in the TEDA website so that the purchaser shall have the freedom to select the bidder of his/her choice from the final list uploaded by TEDA .The purchaser shall issue work order directly to the bidder.
- d) The Bidder shall be fully and completely responsible to Purchaser, for all the deliveries and deliverables. The bidder shall be responsible for the proper functioning of the finally erected systems.

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 Price quoted in any currency other than INR will be rejected.

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

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- under acknowledgement No clarifications will be offered by TEDA within 48 hrs prior to the 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 closing date of the Tender, clarifications and amendments if any will be notified in the government website mentioned in the Tender Data sheet. The Bidders shall periodically check for the amendments or corrigendum or information in the website till the closing date of this Tender. TEDA will not make any individual communication and will in no way be responsible for any ignorance pleaded by Bidders.
 - d) TEDA is not responsible for any misinterpretation of the provisions of this tender document on account of the Bidders failure to update the Bid documents based on changes announced through website.

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

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5.6. 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.

Since the purchaser shall directly select and issue a work order to the selected empanelled bidder TEDA shall in no way be responsible for any dispute arising between Bidder and the Purchaser.

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 documents. Failure to furnish information required by the Bid or submission of Bids not substantially responsive or viable in every respect 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 Test Certificates/Reports and Samples

1. The bidder shall submit the test certificates / reports of PV modules and Solar Grid tie Inverters for the 1kWp,2kWp,5kWp,10kWp grid tie system (whichever is applicable as per the quote of bidder) from the notified testing agencies, as per "Section D".
2. Any Bids received without the test certificates/reports will be summarily rejected for non-responsive to the tender condition.

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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 stage will be eligible for the Price bid opening. The Price Bids of Bidders who failed in the Techno commercial stage will not be opened.
- b) The Techno commercial Bid format as given in the Tender shall be filled, signed and stamped in all pages.
- c) The Techno commercial Bid shall strictly not contain any Price indications or otherwise the Bid will be summarily rejected.

7.1.1 Details to be furnished in the Techno Commercial Bid

- a) The EMD amount shall be submitted in the prescribed form.
- b) In case of Consortium, the Prime Bidder shall be authorized by submitting of Power of Attorney signed by the legally authorized signatories of all the partners.
- c) The Techno Commercial Bid shall be duly filled, signed by the authorized person and stamped in all the pages and shall be submitted.
- e) The supporting documents to prove Bidder's eligibility shall be duly attested by the authorized person and shall be submitted.
- f) Test certificates / reports shall be submitted for components of quoted grid tie systems from notified testing agencies, as per “Section – D ”.
- g) All the required documents insisted in the Tender shall be enclosed in the Techno Commercial Bid.

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7.1.2 Signing the Techno Commercial Bid

- a) The Bids 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 by 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) – **International Price Discovery Bidding for empanelment 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 asked 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 cost quoted by the Bidder shall include the breakup cost of the quoted grid – tie system viz., PV panel, Inverter, etc.,
- c) 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 empanelment period including the period of extension of time if any.

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7.2.2 Signing the Price Bid

- a) The Bids 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) Any alterations, deletions or overwriting shall be treated valid only if they are attested by full signature by the authorized person.

7.2.3 Sealing the Price Bid

The Price Bid shall be placed in a single separate cover (Envelope-B) and sealed appropriately. The Price Bid cover shall be super scribed with "Price Bid (Envelope B) – **International Price Discovery Bidding for empanelment 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 **International Price Discovery Bidding for empanelment Tender Ref.:**_____ **due on** _____." The "FROM" address and "TO" address shall be written without fail otherwise the Bid is liable for rejection.

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 Bid 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.

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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 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 representative(s) of the Bidder who chooses to attend Tender opening shall bring an authorization letter from the Bidder. A maximum of two representatives for each Bidder would 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 Tender 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 **not** submitted in two parts as specified in the Tender and signed and stamped in all pages of the Bid
- Tender where all documents are **not page numbered** and **not bound**

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

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8.4 Clarifications by TEDA

When deemed necessary, TEDA may seek bona-fide clarifications and call for supporting historical documents if required on any aspect from the Bidder. However, that would not entitle the Bidder to change or cause any change in the substance of the Bid or price quoted. During the course of Techno commercial Bid evaluation, TEDA may seek additional information or historical documents for verification to facilitate decision making. In case the Bidder failed to comply with the requirements of TEDA as stated above, such Bids may at the discretion of TEDA, shall be rejected as technically non-responsive.

8.5 Price Bid Opening

The Price Bids will be opened in the presence of the Bidders at TEDA. The Bidders or their authorized representatives (maximum two) will be allowed to take part in the Price Bid opening.

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 would terminate the empanelment as the case may be, 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 proof 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) 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 will be eligible for further processing.

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- b) The Tenders, which do not conform to the Technical Specifications or Tender conditions or Bids without Test certificates/reports on the components offered or Tenders from Bidders without adequate capabilities for supply & installation, will be rejected. The Eligible Bidders alone will be considered for further evaluation.

9.3 Price Bid Evaluation

1. The Price evaluation will include all Duties and Taxes
 - (i) In cases 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 of price break up and the total mentioned in the bid, the lower of the two will be considered.
2. TEDA reserves the right to negotiate with the bidders for further reduction of prices.
3. Under no circumstances shall a tenderer increase his price during the validity period after tenders are opened. Any tenderer who does so 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.

9.4 Award of Contract

- 1) No contract will be awarded by TEDA. Empanelled installers will have to canvass with the purchasers sanctioned by TEDA under this scheme and collect orders directly from them.
- 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;

Negotiate with the Bidders for further reduction of prices.

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9.6 Banning of business deal:

The bidder/consortium will be banned from business with TEDA if any of the particulars produced by the bidder such as Auditor Certificate, Annual account, VAT Clearance Certificate, Test certificate, etc. are found to be incorrect, or if there is breach of any of the conditions in the contract

Section- C

Award & Execution

10. AWARD OF WORK

10.1 Acceptance of the Tender

The final acceptance of the Tender for empanelment is entirely vested with TEDA 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 TEDA, the Bidder shall have no right to withdraw their Tender or claim higher price.

10.2 Letter of Empanelment

After acceptance of the Tender by TEDA, a Letter will be sent to the qualified bidder with an intimation to remit/furnish the SD within 10 days. On receipt the letter of empanelment will be sent to the Installer.

10.3 Payment of Security Deposit (SD)

- a) The Successful Bidder will be required to remit the Security Deposit of Rs. 5 lakhs (Rupees Five lakhs only). The SD shall be paid by way of Demand Draft drawn in **favour of "Tamil Nadu Energy**

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Development Agency” payable at Chennai or in the form of unconditional and irrevocable Bank Guarantee. The SD shall be paid within 10 days from the date of issue of letter regarding the qualification of the bidder for Empanelment by TEDA.

- b) The Security Deposit will be refunded to the Successful Bidder on expiry of empanelment under this scheme. The Security Deposit held by TEDA till it is refunded to the Successful Bidder will not earn any interest thereof.
- c) The Security Deposit/EMD will be forfeited if the Successful Bidder withdraws the Bid during the period of Bid validity specified in the Tender.

10.4 Execution of Agreement of Empanelment

- a) The Successful Bidder shall execute an agreement of empanelment in the INR 100 non-judicial stamp paper bought in Tamil Nadu only in the name of the Bidder, within 10 days from the date of Letter of Intimation about qualification by TEDA.
- b) The Successful Bidder shall not assign or make over the empanelment, 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. TEDA reserves its right to cancel the empanelment either in part or full, if this condition is violated.
- c) In case of the successful bidder fails to execute necessary agreements as prescribed, within the stipulated period, then his EMD shall be forfeited and his tender held as non responsive.

10.5 Issue of Letter of Empanelment

After execution of the Agreement and payment of Security Deposit, the name of successful bidder(s) with price will be displayed in website of TEDA and a letter of empanelment will be sent to the qualified installer.

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10.6 Installation & Completion Schedule

The entire work involving Supply, Installation and Commissioning of Grid tied Solar Rooftop power plants shall be completed within 90 days from the date of issue of work order by each purchaser.

11. EXECUTION OF WORK

11.1 Scope of Work

- a. Scope of work covers Design, Supply, Installation & Commissioning of SPV Rooftop as per the technical specification.
- b. Wiring upto Distribution Board from the SPV Rooftop system will be in the scope of the successful bidder(s). The maximum cable length of 25m for every Solar power plant installed shall be in the scope of the bidder and supply of excess cable length if required shall be in the scope of purchaser.
- c. Mounting Structure within the scope of this tender is for flat RCC roofs.
- d. Performance testing of the complete system.
- e. The empanelled installer will collect firm work order from the domestic purchasers. A copy of work order, invoice, commissioning report and bill of material has to be submitted to TEDA for release of State Capital Incentive.
- f. The empanelled installer shall undertake to supply spares free of cost for the maintenance of the offered items during the warranty period.
- g. A leaflet containing the details of the service centres shall be provided to each purchaser as well as to TEDA.

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- h. If the operation or use of the system proves to be unsatisfactory during the warranty period, the installer shall replace the faulty ones or carry out necessary repairs as per the warranty terms and conditions.
- i. For above 10 KWp systems, if the solar grid inverter operates at medium voltage (250V-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. For the procedure please visit: <http://www.tnei.tn.gov.in/OtherIns.php>

11.2 Inspection by Third Party Agency

All the SPV Rooftop systems installed will be inspected by the Third Party Agency nominated by TEDA within 30 days of receipt of Installation & Commissioning Certificate . The State Capital Incentive will be released only for the systems installed in compliance to the technical specification of TEDA. During Third Party Inspection, if the system installed is found faulty (or) not in compliance to the technical specification, the cost for re-inspection by Third Party after rectification/replacement shall be borne by the Installer.

11.3 Service Centres

Empanelled Installer shall have minimum of one service centre in Tamil Nadu. Additional service centres shall be opened in Tamil Nadu in different districts as follows. All service centres shall be operational till the expiry of 5 year warranty.

< 500 Installations	- 1 centre
500 – 1000 Installations	- 2 centres
	and so on.

11.4 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

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- (c) The PCU/Solar Grid tie Inverter shall carry a warranty of minimum 5 years.
2. The complete SPV rooftop systems installed and commissioned shall be under a warranty against any manufacturing or usage defect for a minimum period of 5 years from the date of Commissioning. The mechanical structures, electrical works including power conditioners/inverters/maximum power point tracker units/distribution boards/digital meters/ switchgear etc. and overall workmanship of the SPV rooftop systems must be warranted against any manufacturing/ design/ installation defects for a minimum period of 5 years.
 3. 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 system but do not include physical damages by the end users.
 4. The above warranty shall take effect from the date on which the system is taken over by the purchaser after commissioning.
 5. 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.
 6. The warranty will cover all the materials and goods involved in the installation and commissioning of SPV rooftop systems by the successful Bidder.

12 Payment Terms

1. Payment of the project cost, excluding both the State Incentive & the MNRE Subsidy, shall be paid by the Purchaser directly to the empanelled installer after satisfactory Third Party Inspection (TPI) & on submission of invoice to the purchaser.
2. Copies of invoices after TPI shall also be submitted to TEDA for payment of State Capital Incentive.

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3. MNRE subsidy shall be claimed directly by the bidder as per MNRE guidelines.

13 Validity of Empanelment

The validity of Empanelment and the price accepted will be for 1 year.

Section-D

14. Technical Specification

14.1 Introduction

In grid-connected Solar Photo-Voltaic (SPV) systems, solar energy is fed into the building loads that are connected to the public electricity grid through a service connection with surplus energy being fed into the grid and shortfall being drawn from the grid. Production of surplus energy may happen when solar energy produced exceeds building load energy demand. This surplus is fed into the grid. During the night, or when during the day energy demand in the building exceeds solar energy production, energy is drawn from the grid. Grid-connected solar PV systems have no battery storage and will not work during grid failure. For buildings with grid-connected solar PV systems, the service connection meter needs to be of the bidirectional type, whereby import kWh and export kWh are separately recorded.

A grid-connected Solar Photo Voltaic (SPV) power plant consists of SPV array, Module Mounting Structure, Solar Grid Inverter (SGI), control and protection devices, circuit breakers, interconnection cables and switches.

Components and parts used in the SPV power plants shall conform to the BIS or IEC or other international specifications, wherever such specifications are available and applicable.

14.2 Quality and Workmanship

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Solar PV modules are designed to last 25 years or more. It is therefore essential that all system components and parts, including the mounting structures, cables, junction boxes, distribution boxes and other parts also have a life cycle of at least 25 years. Therefore all works shall be undertaken with the highest levels of quality and workmanship. During inspection TEDA and its representatives will pay special attention to neatness of work execution and conformity with quality and safety norms. Non compliant works will have to be redone at the cost of the Installer.

14.3 System Configurations

Bidders can quote for one or more of the following four system configurations: 1 kWp, 2 kWp, 5 kWp and 10 kWp. The 1 kWp/ 2 kWp systems shall be used for individual homes while the 5 kWp and 10 kWp systems are applicable to collective housing projects such as apartment complexes.

System capacity →	1kWp	2 kWp	5 kWp	10 kWp
Total Power output of panel(s) under STC	shall not be less than 1,000Wp	Shall not be less than 2000Wp	shall not be less than 5,000Wp	shall not be less than 10,000Wp
Type of PV Module	Indigenous Crystalline module			
Minimum rated power of each module	74 Wp			
Solar Grid Inverter minimum KVA	1 kVA	2 KVA	5 kVA	10kVA

14.4 Specification of Solar PV Modules

Solar PV modules shall be of the crystalline silicon type, manufactured in India. Detailed specifications of the solar PV modules are given below:

<i>Type</i>	Crystalline silicon
<i>Origin</i>	Manufactured in India
<i>Efficiency</i>	>= 13%
<i>Fill factor</i>	>= 70%
<i>Degradation</i>	>=90% of design nominal power after 10 years,

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<i>warranty</i>	>=80% of design nominal power after 20 years.
<i>Module frame</i>	Non-corrosive and electrolytically compatible with the mounting structure material
<i>Termination box</i>	Thermo-plastic, IP 65, UV resistant
<i>Blocking diodes</i>	Schottky type
<i>Module minimum rated power</i>	The nominal power of a single PV module shall not be less than 74Wp.
<i>RF Identification tag for each solar module</i>	Yes. Must be able to withstand environmental conditions and last the life of the solar module and shall be kept inside the module. As per guidelines issued for off-grid and decentralized applications programme under JNNISM, the RFID tag must be inside of the module from 01.07.2013 onwards.
<i>RF Identification tag data</i>	<ul style="list-style-type: none"> a) Name of the manufacturer of PV Module b) Name of the Manufacturer of Solar cells c) Month and year of the manufacture (separately for solar cells and module) d) Country of origin (separately for solar cells and module) e) I-V curve for the module f) W_m, I_m, V_m and FF for the module g) Unique Serial No and Model No of the module h) Date and year of obtaining IEC PV module qualification certificate i) Name of the test lab issuing IEC certificate j) Other relevant information on traceability of solar cells and module as per ISO 9000 standard
<i>Power output rating</i>	To be given for standard test conditions (STC). I_V curve of the sample module should be submitted.
<i>Compliance with standards and codes</i>	IEC 61215 / IS 14286 IEC 61730 Part 1 and 2
<i>Salt Mist Corrosion Testing</i>	As per IEC 61701

14.5 Solar PV Module Mounting Structure

The PV modules shall be mounted on fixed metallic structures of adequate strength and appropriate design, which can withstand the

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load of the modules and high wind velocities up to 150 km per hour. The support structure shall be hot dip galvanized steel or aluminium.

Detailed specifications for the mounting structure are given below:

<i>Wind velocity withstanding capacity</i>	150 km / hour
<i>Structure material</i>	Hot dip galvanised steel with galvanisation thickness of min 120 micron or aluminium alloy.
<i>Bolts, nuts, fasteners, panel mounting clamps</i>	Stainless steel SS304
<i>Mounting arrangement for flat roofs</i>	With Removable concrete ballast made of Pre-fabricated PCC (1:2:4), M15
<i>Mounting arrangement for metal sheet roofs</i>	Mounting directly on the sheet metal, ensuring stability and wind withstanding capacity, or penetrating the sheet metal and fixing to the sub-structure, ensuring that the roof remains water proof and ensuring stability and wind withstanding capacity.
<i>Mounting arrangement for elevated structures</i>	The elevated structure has to be securely anchored to the supporting surface. Concrete foundations of appropriate weight and depth for elevated structures mounted directly on the ground; Bolted with anchor bolts of appropriate strength for elevated structures mounted on RCC surfaces.
<i>Mounting arrangement for ground installations</i>	With removable concrete ballast made of pre-fabricated PCC (1:2:4), M15; assuring enough ground clearance to prevent damage of the module through water, animals and other environmental factors.

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<i>Installation</i>	The structures shall be designed for simple mechanical on-site installation.
<i>Minimum distance between roof edge and mounting structure (Horizontal Clearance)</i>	>= 0.60 m
<i>Minimum clearance between lowest part of panel and mounting structure (Vertical Clearance)</i>	Shall not be less than 100mm
<i>Access for panel cleaning and maintenance</i>	All solar panels must be accessible from the top for cleaning and from the bottom for access to the junction box.
<i>Panel tilt angle</i>	North – south orientation with a fixed tilt angle of 11 – 13 degrees (depending on location) south facing.

The prospective Installer shall specify installation details of the solar PV modules and the support structures with lay-out drawings and array connection diagrams. The work shall be carried out as per the designs approved by TEDA.

14.6 Solar Array Fuse

The cables from the array strings to the solar grid inverters shall be provided with DC fuse protection. Fuses shall have a voltage rating of 1,000V DC, current rating as required and shall have DIN rail mountable fuse holders and shall be housed in thermoplastic IP 65 enclosures with transparent covers

14.7 Solar Grid Inverter

The solar grid inverter converts the DC power of the solar PV modules to grid-compatible AC power.

The detailed specification of the solar grid inverter is given below.

<i>Total output power (AC)</i>	To match solar PV plant capacity while achieving optimum system efficiency
<i>Input DC voltage range</i>	As required for the solar grid inverter DC input
<i>Maximum power point (MPPT) tracking</i>	Yes

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<i>Number of independent MPPT inputs</i>	1 or more
<i>Output AC voltage</i>	Single phase 230V or Three phase 415V (+ 12.5%, -20%)
<i>Operating Frequency range</i>	47.5 – 52.5 Hz
<i>Nominal frequency</i>	50 Hz
<i>Power factor of the inverter</i>	>0.98 at nominal power
<i>Total harmonic distortion</i>	Less than 3%
<i>Built-in Protection</i>	AC high / low voltage; AC high /low frequency
<i>Anti-islanding protection</i>	As per VDE 0126-1-1 or IEC 60255.5 or IEC 62116 or equivalent standards
<i>Operating ambient temperature range</i>	-10 °C - +60 °C
<i>Humidity</i>	0 – 95% Rh
<i>Inverter efficiency</i>	:>=95%
<i>weighted efficiency</i>	:94%
<i>Protection degree</i>	IP 65 for outdoor mounting, IP 54 for indoor mounting
<i>Communication interface</i>	RS 485 / RS 232 and RJ45
<i>Safety compliance</i>	IEC 62103, IEC 62109-1, IEC 62109-2 Galvanic Isolation
<i>Cooling</i>	Convection
<i>Display type</i>	LCD for data display. LCD / LED for status display
<i>Display parameters to include</i>	Output power (W), cumulative energy (Wh), DC voltage (V), DC current(A), AC voltage(V), AC frequency(Hz), AC current(A); cumulative hours of operation,
<i>Compliance with standards and codes</i>	IEC 61683 / IS 61683 & IEC 60068 -2(1,2,14,30)

14.8 DC Distribution Box

A DC distribution box shall be mounted close to the solar grid inverter. The DC distribution box shall be of the thermo plastic IP65 DIN rail mounting type and shall comprise the following components and cable terminations:

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-
- Incoming 2 core(Positive and negative DC) cables from the DC Combiner Box;
 - DC circuit breaker, 2 pole (the cable from the DC Combiner Box will be connected to this circuit breaker on the incoming side);
 - DC surge protection device (SPD), class 2 as per IEC 60364-5-53;
 - Outgoing 2 core cable(Positive and negative DC) to the solar grid inverter.

As an alternative to the DC circuit breaker a DC isolator may be used inside the DC Distribution Box or in a separate external thermoplastic IP 65 enclosure adjacent to the DC Distribution Box. If a DC isolator is used instead of a DC circuit breaker, a DC fuse shall be installed inside the DC Distribution Box to protect the DC cable that runs from the DC Distribution Box to the Solar Grid Inverter.

14.9 AC Distribution Box

An AC distribution box shall be mounted close to the solar grid inverter. The AC distribution box shall be of the thermo plastic IP65 DIN rail mounting type and shall comprise the following components and cable terminations:

- Incoming 3 core / 5 core cable from the solar grid inverter
- AC circuit breaker, 2 pole / 4 pole
- AC surge protection device (SPD), class 2 as per IEC 60364-5-53
- Outgoing cable to the building electrical distribution board.

14.10 Connection to Building Electrical System

- a. The AC output of the solar grid inverter shall be connected to the building's electrical system after the TANGEDCO service connection meter and main switch on the load side. The solar grid inverter output shall be connected to a dedicated module in the Main Distribution Board (MDB) of the building. It shall *not* be connected to a nearby load or socket point of the building. The connection to the electrical system of the building shall be done as shown in typical wiring diagram 1 in A-1.
- b. For buildings or loads with diesel generator backup, the wiring of the solar grid inverter shall be such that the solar grid inverter *cannot* run in parallel with the diesel generator. This implies that the solar grid inverter must be connected to a distribution board on the grid side of the automatic or manual change-over switch as shown in typical wiring diagram 2 in A-1.

14.11 Cables

All cables shall be supplied conforming to IEC 60227/ IS 694 & IEC60502/ IS 1554 Voltage rating: 1,100V AC, 1,500V DC

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For the DC cabling, XLPE insulated and PVC sheathed, UV stabilised single core flexible copper cables shall be used. Multi-core cables shall not be used.

For the AC cabling, PVC or XLPE insulated and PVC sheathed single or multi-core flexible copper cables shall be used. Outdoor AC cables shall have a UV-stabilised outer sheath.

The total voltage drop on the cable segments from the solar PV modules to the solar grid inverter shall not exceed 2.0%.

The total voltage drop on the cable segments from the solar grid inverter to the building distribution board shall not exceed 2.0%

The DC cables from the SPV module array shall run through a UV-stabilised PVC conduit pipe of adequate diameter with a minimum wall thickness of 1.5mm.

Cables and wires used for the interconnection of solar PV modules shall be provided with solar PV connectors and couplers.

All cables and conduit pipes shall be clamped to the rooftop, walls and ceilings with thermo-plastic clamps at intervals not exceeding 50 cm. The minimum DC cable size shall be 4.0 mm² copper. The minimum AC cable size shall be 4.0 mm² copper. In three phase systems, the size of the neutral wire size shall be equal to the size of the phase wires. The following colour coding shall be used for cable wires:

- DC positive: red (the outer PVC sheath can be black with a red line marking)
- DC negative: black
- AC single phase: Phase: red; neutral: black
- AC three phase: Phases: red, yellow, blue; neutral: black
- Earth wires: green

Cables and conduits that have to pass through walls or ceilings shall be taken through a PVC pipe sleeve.

Cable conductors shall be terminated with tinned copper end-ferrules to prevent fraying and breaking of individual wire strands. The termination of the DC and AC cables at the Solar Grid Inverter shall be done as per instructions of the manufacturer, which in most cases will include the use of special connectors.

14.12 Earthing

The PV module structure components shall be electrically interconnected and shall be grounded.

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Earthing shall be done in accordance with IS 3043-1986, provided that earthing conductors shall have a minimum size of 6.0 mm² copper, 10 mm² aluminium or 70 mm² hot dip galvanised steel . Unprotected aluminium or copper-clad aluminium conductors shall not be used for final underground connections to earth electrodes.

A minimum of two separate dedicated and interconnected earth electrodes must be used for the earthing of the solar PV system support structure with a total earth resistance not exceeding 5 ohm.

The earth electrodes shall have a precast concrete enclosure with a removable lid for inspection and maintenance. The entire earthing system shall comprise non-corrosive components.

14.13 Surge Protection

Surge protection shall be provided on the DC side and the AC side of the solar system.

The DC surge protection devices (SPDs) shall be installed in the DC distribution box adjacent to the solar grid inverter.

The AC SPDs shall be installed in the AC distribution box adjacent to the solar grid inverter.

The SPDs earthing terminal shall be connected to earth through the above mentioned dedicated earthing system. The SPDs shall be of type 2 as per IEC 60364-5-53

14.14 Junction Boxes

Junction boxes and solar panel terminal boxes shall be of the thermo plastic type with IP 65 protection for outdoor use and IP 54 protection for indoor use.

Cable terminations shall be taken through thermo-plastic cable glands. Cable ferrules shall be fitted at the cable termination points for identification.

14.15 Caution Signs

In addition to the standard caution and danger boards or labels as per Indian Electricity Rules, the AC distribution box near the solar grid inverter and the building distribution board to which the AC output of the solar PV system is connected shall be provided with a non-corrosive caution label with the following text:

**WARNING – DUAL POWER SOURCE
SECOND SOURCE IS SOLAR SYSTEM**

Tender reference: TEDA/ 3650 /SPV – 1kWp /CIS/2013-14

The size of the caution label shall be 105mm (width) x 20mm (height) with white letters on a red background.

14.16 Metering

The existing service connection meter needs to be replaced with a bidirectional (import kWh and export kWh) service connection meter (the “Solar Service Connection Meter”) for the purpose of net-metering.

Installation of the Solar Service Connection Meter will be carried out by TANGEDCO and is not in the scope of the work of the Installer.

14.17 Documentation

The Installer shall supply the following documentation:

- a) System description with working principles.
- b) System single line diagram.
- c) Solar PV array lay-out.
- d) Routing diagram of cables and wires.
- e) Data sheets and user manuals of the solar PV panels and the solar grid inverter.
- f) A system operation and maintenance manual.
- g) Name, address, mobile number and email address of the service centre to be contacted in case of failure or complaint.
- h) Warranty cards.
- i) Maintenance register.

14.18 Test Certificates and Reports to be Furnished

Test Certificates / Reports from IECQ / NABL accredited laboratory for relevant IEC / equivalent BIS standard for quoted components shall be furnished. Type Test Certificates shall be provided for the solar modules and the solar grid inverter to provide evidence of compliance with standards as specified in articles 14.4 and 14.7 of this Technical Specification. TEDA reserves the right to ask for additional test certificates or (random) tests to establish compliance with the specified standards.

Section- E

Format and Annexure

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

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

F 1.1 Profile of the Bidder

S. No	Particulars	Bidder /Prime Bidder	Consortium / Partner-1	Consortium/ Partner-2
1.	Name of the Company			
2.	Year of incorporation			
3.	Registered office			
	Address			
	Office Telephone Number			
	Fax Number			
4.	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			

Tender reference: TEDA/ 3650 /SPV – 1kWp /CIS/2013-14

	Personal Telephone Number			
	Email Address			
7.	Address for communications under the current Tender			
8.	Registration Details			
	Permanent Account 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 Date	
4.	DD Amount	

F1.3 Furnish details for meeting the Eligibility Criteria

1) Details about Incorporation / Registration

#	Description	Bidder / Prime Bidder /	Consortium/ Partner-1	Consortium/ Partner-2
1.	Year of Incorporation /Registration			
2.	Enclose Certificate of Incorporation/Registration			

2) Details about the components to be used in this Scheme

#	Description	Name of the Manufacturer	Manufacturing plant address
1.	PV Module		
2..	Solar Grid Tie Inverter/PCU		

Tender reference: TEDA/ 3650 /SPV – 1kWp /CIS/2013-14

3) Details about Annual Turnover

#	Audited years (from 2009-10)	Bidder /Prime Bidder /	Consortium/ Partner-1	Consortium/ Partner-2
1.				
2.				
3.				
4.	Enclose audited Annual Reports evidencing annual turnover criteria			

4) Details about minimum quantity installed

#	W.O reference with Name , Address & contact details of the Client	Quantity Installed (Nos)	Date of Commissioning	Bidder/In case of Consortium, Name of the Consortium partner who has executed the work
1.				
2.				
3.				
	Enclose copies of related Work Orders along with proof for satisfactory completion of that work			

5) Details about the Blacklisting, if any

#	Description	Bidder /Prime Bidder	Consortium/ Partner-1	Consortium/ Partner-2
1.	Has the Bidder or in case of Consortium/, any of the Consortium partners/ have been blacklisted by any of the State/Central Government or organisations of the State/ Central Government			
2.	Bidder or in case of Consortium, all the Consortium partners shall submit the undertaking letter.			

F1.4 TECHNICAL BID

Sl.No	Description	To be furnished by the tenderer
A.	SPV MODULE	
1.	Type of Module	Mono/ Poly crystalline

Price Discovery Tender for empanelment for Supply, Installation and Commissioning of Grid tied Solar Rooftop Power plants in 10,000 Houses in Tamil Nadu Under Hon'ble Chief Minister's Solar Rooftop Capital Incentive Scheme

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2.	Make	
3.	(a) Availability of RFID tag (b) Whether inside the module	
4.	Max power at STC Pmax (W)	
5.	Max power voltage Vmp(V)	
6.	Max power current Imp(A)	
7.	Open circuit voltage Voc (V)	
8.	Short circuit current Isc (A)	
9.	Load voltage Vld (V)	
10.	Conversion Efficiency	
11.	No of cells per module	
12.	No of bypass diodes in module	
13.	Solar module frame material	
14.	Module Dimension	
15.	Module Weight	
16.	No of Modules	
17.	Series/ parallel combination	
18.	Other details, if any	
B.	MODULE MOUNTING STRUCTURE	
1.	Material of Structure	
2.	Material of supporting leg	
3.	Length, thickness & Dia of leg	
4.	Foundation size, if grouted	
5.	Other details, if any	
C.	SOLAR GRID TIE INVERTER/PCU	
1.	Type	
2.	Nominal Capacity	
3.	Input Voltage	
4.	Output voltage	
5.	Voltage Regulation	
6.	Output frequency	
7.	Over load capacity	
8.	Efficiency @ 60% load	
9.	Voltage THD	
10.	Current THD	
11.	Crest Factor	
12.	Operating Temp	
13.	Protections	
	i. Over load	
	ii. Short circuit	
	iii. Over & Under frequency	
	iv. Over i/p & o/p voltage	
	v. Over i/p & o/p current	
	vi. Others	
	i. PV Charging ON	
	ii. Fault indicators	

Price Discovery Tender for empanelment for Supply, Installation and Commissioning of Grid tied Solar Rooftop Power plants in 10,000 Houses in Tamil Nadu Under Hon'ble Chief Minister's Solar Rooftop Capital Incentive Scheme

Tender reference: TEDA/ 3650 /SPV – 1kWp /CIS/2013-14

14.	Anti – Islanding Protection	
15.	Safety Compliance	
16.	Construction Insulation Coordination	
D.	DC CABLES	
1.	Make	
2.	Size & Type	
3.	Standard	
4.	Other details, if any	
E.	AC WIRING	
	Make	
	Size	
	Other details, if any	
F.	EARTHING	
1.	Details of points to be earthed	
2.	Earth resistance	

Signature of the authorised person:

Name of the authorised person:

Designation:

Name and Address of Bidder

Stamp of bidder

Tender reference: TEDA/ 3650 /SPV – 1kWp /CIS/2013-14

F.2 Price Bid (Envelope-B)

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

Sl. No.	Capacity	1 kWp	2 kWp	5 kWp	10 kWp
1	Total Cost of SPV Power Plant with 5 year warranty (Rs)				
2	Extended CMC for additional five years beyond the warranty period (Rs)				

Note:

- Total Cost to be quoted above is without deducting the State Incentive and MNRE Subsidy. Purchaser shall pay total cost minus State Incentive (@Rs 20,000 per KWp limited to one KWp per domestic purchaser) and minus MNRE subsidy (limited to 30% of MNRE benchmark of Rs 1 lakh per KWp limited to one KWp per domestic purchaser. Both State Incentive and MNRE Subsidy shall be collected by the Installer directly from TEDA/MNRE.**
- Purchaser may or may not opt for extended CMC. If opted for and if this is collected upfront then MNRE subsidy can be calculated including extended CMC limited to benchmark cost.**
- In cases of discrepancy between the cost quoted in Words and in Figures, the lower of the two will be considered. (Total cost offered shall be both in words and figures)**

For Eg,

Sl. No.	Capacity (kWp)	1	2	5	10	10
1	No. of Applicants	1	1	5	5	7
2	Total Cost of Grid tied Solar Power Plant, say (Rs)	100000	170000	350000	600000	600000
3	State Incentive (Rs)	20000	20000	100000	100000	140000
4	MNRE Subsidy (Rs)	30000	30000	105000	150000	180000
5	Net Cost which can be directly collected from the purchasers (Rs) (=2-3-4)	50000	120000	145000	350000	380000

Tender reference: TEDA/ 3650 /SPV – 1kWp /CIS/2013-14

3. Bill of Material of Grid tied Solar Rooftop power plants

		1 kWp	2 kWp	5 kWp	10 kWp
Sl.No.	Description	Amount in (Rs.)	Amount in (Rs.)	Amount in (Rs.)	Amount in (Rs.)
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 charges etc.(shall be indicated separately)				
8.	Duties/Taxes (shall be indicated separately with %)				
9.	All inclusive price per system (sum of 6 to 8) (in Rs)				
10.	Installation & Commissioning Charges				
11.	Total cost per system (sum of 9 & 10) (Rupees in figures)				
12.	Total cost per System (Rupees in words)				
13.	Extended CMC for additional five years				

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

Tender reference: TEDA/ 3650 /SPV – 1kWp /CIS/2013-14

F-3 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: Supply, Installation and Commissioning of Grid tied Solar Rooftop Power plants in Tamil Nadu Under Hon'ble Chief Minister's Solar Rooftop Capital Incentive Scheme for 10,000 Domestic consumers- reg.

Tender Reference: TEDA/3650/SPV – 1 kWp/CIS/2013-14

1. We have examined the Price Discovery Tender for Supply, Installation and Commissioning of Grid tied Solar Rooftop Power plants 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

Tender reference: TEDA/ 3650 /SPV – 1kWp /CIS/2013-14

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 empanelment, 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 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 in this project.
10. We also declare that our Company/Organisation is not blacklisted by any of the State or Central Government and organisations of the State or Central Government
11. We undertake to use the BoS components other than PV Modules and Solar grid tie Inverters as per the standard stipulated in Section D.

Signature of the authorised person:

Name of the authorised person:

Designation:

Name and Address of Bidder

Stamp of bidder

CERTIFICATE AS TO AUTHORISED SIGNATORIES

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

Date:

Signature:

Seal:

Tender reference: TEDA/ 3650 /SPV – 1kWp /CIS/2013-14

F-4 Bank Guarantee Format

(To be executed in Rs.100/- Stamp Paper)

To
The General Manager
Tamil Nadu Energy Development Agency
V Floor, EVK Sampath Maaligai
68 College Road Chennai-600006
Bank Guarantee No:
Amount of Guarantee:
Guarantee covers from:
Last date for lodgement of claim:

This Deed of Guarantee executed by (Bankers Name & Address) having our Head Office at (address) (here in after referred to as "the Bank") in favour of The General Manager, Tamil Nadu Energy Development Agency, V Floor, EVK Sampath Maaligai, 68 College Road Chennai-600006(hereinafter referred to as "the Implementing Agency") for an amount not exceeding Rs._____/ - (Rupees _____ Only) as per the request of M/s. _____ having its office address at _____ (hereinafter referred to as "Installer") against Letter of Empanelment reference _____ dated __/__/__ of M/s. Tamil Nadu Energy Development Agency. This guarantee is issued subject to the condition that the liability of the Bank under this guarantee is limited to a maximum Rs._____/ - (Rupees _____ Only) and the guarantee shall remain in full force up to 60 months from the date of Bank Guarantee and cannot be invoked otherwise by a written demand or claim by the Implementing Agency under the Guarantee served on the Bank upto_____

AND WHEREAS it has been stipulated by you in the said ORDER that the Installer shall furnish you with a Bank Guarantee by a Scheduled/ Nationalized Bank for the sum specified therein as security for compliance with the Installer's performance obligations for a period in accordance with the contract.

AND WHEREAS we have agreed to give the Installer a Guarantee.

THEREFORE, we (Bankers address)....., hereby affirm that we are Guarantors and responsible to you on behalf of the Installer up to a total of Rs._____/ - (Rupees _____ Only) and we undertake to pay you, upon your first

Tender reference: TEDA/ 3650 /SPV – 1kWp /CIS/2013-14

written demand declaring the Contractor/ Supplier to be in default under the contract and without any demur, cavil or argument, any sum or sums within the limit of Rs._____/ - (Rupees _____ Only) as aforesaid, without your needing to prove or show grounds or reasons for your demand or the sum specified therein. We will pay the guaranteed amount notwithstanding any objection or dispute whatsoever raised by the Supplier.

Notwithstanding, anything contained herein

Our liability under this guarantee shall not exceed Rs._____/ - (Rupees _____ Only). This Bank Guarantee shall be valid up to _____ and we are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only if you serve upon us a written claim or demand on or before_____

In witness whereof the Bank, through its authorised Officer, has set its, hand and stamp on this at _____.

Witness:
(Name in Block Letters)

(Signature)

F-5 Model Form of Agreement

To be executed on a Rs.100- Non-judicial Stamp paper bought in Tamil Nadu by the Successful Bidder for Supply, Installation and Commissioning of Solar Grid -Tie Rooftop Systems (NO FIGURES IN NUMERALS OR WORDS SHALL BE FILLED UP IN THIS SAMPLE FORM AT THE TIME OF SUBMISSION OF TENDER)

AGREEMENT

This Agreement is entered into at Chennai on the day of _____ 2013 between Tamil Nadu Energy Development Agency, a wholly owned Government of Tamil Nadu Undertaking, registered under the Societies Act 27 of 1975, and having its Registered Office at V Floor, EVK Sampath Maaligai, 68 College Road Chennai-600006, Tamil Nadu, India, hereinafter referred to as "TEDA" (Which term shall mean and include its successors and permitted assigns) on behalf of Government of Tamil Nadu, hereinafter referred to as "Implementing Agency" and

Tender reference: TEDA/ 3650 /SPV – 1kWp /CIS/2013-14

....., a Company registered underand having its Registered office at hereinafter referred to as the “Installer” (Which term shall mean and include its successors and permitted assigns)

Whereas TEDA on behalf of the Government of Tamil Nadu invited a tender vide Tender Ref. No. TEDA/ _____for Supply, Installation, Commissioning of Grid Tie SPV Rooftop Systems throughout the State of Tamil Nadu and the Installer was selected as per the following 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 Installer, the contract shall be terminated by TEDA without compensation to the Installer. The contract may also be put to an end at any time by the Implementing Agency upon giving seven days notice to the Installer.

The Installer agrees for Supply, Installation, Commissioning of ____SPV Rooftop with 60 months warranty as per clause “ 11.4 “ and as per the Terms & Conditions given below.

1. Installation & Completion Schedule

The entire work involving Supply, Installation and Commissioning of SPV Rooftop shall be completed **within 90 days** from the date of issue of work order by the purchaser.

2. Service Centres:

The Empanelled Installer shall set up a minimum of one service centre in Tamil Nadu. Additional service centres shall be opened in Tamil Nadu as follows.

< 500 Installations	- 1 centre
500 – 1000 Installations	- 2 centres
	and so on.

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3. Installation and Commissioning locations

The Grid tied Solar Rooftop power plants shall be installed and commissioned in the houses of purchasers who issue the workorder for the Installer selected from the finalized list of TEDA in the State of Tamil Nadu.

4. PAYMENT TERMS:

- a. Payment of the project cost, excluding both the State subsidy & the MNRE subsidy, shall be paid by the Purchaser directly to the successful bidder after satisfactory Third Party Inspection & submission of invoice to the purchaser.
 - b. Copies of Invoice have to be submitted to TEDA , after clearance obtained from the TPI Agency for payment of state subsidy
 - c. MNRE subsidy shall be claimed directly by the bidder as per MNRE guidelines.
5. The validity of Empanelment and the price accepted will be for 1 year.
6. The following documents shall 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 Successful Bidder
 - f) Correspondence made by TEDA to the successful Bidder from time to time during the period of the contract.
7. Waiver of any terms and conditions by TEDA / Purchaser in writing shall not have the effect of waiving or abandoning other terms and conditions of the contract.

Tender reference: TEDA/ 3650 /SPV – 1kWp /CIS/2013-14

8. (a) Unless otherwise provided in the Contract, any notice, request, consent or other communication given or required to be given hereunder shall be given by mailing the same by registered mail, postage prepaid to TEDA at its registered office.
- (b) Any notice to the Installer shall be deemed to be sufficiently served, if given or left in writing at their usual or last known place of abode or business. In case of failure by the Installer to commission the 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.
9. TEDA is no way responsible for any dispute arising between the Installer & Purchaser.

Subject to the above, the Courts at Chennai alone only shall have jurisdiction in the matter of empanelment.

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.

2.

Witnesses:

1.

2.

Tender reference: TEDA/ 3650 /SPV – 1kWp /CIS/2013-14

F-6 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 _____ DAY OF _____ TWO THOUSAND AND 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 68, College Road, EVK Sampath Maaligai, 5th Floor, 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.

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-
- 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

Price Discovery Tender for empanelment for Supply, Installation and Commissioning of Grid tied Solar Rooftop Power plants in 10,000 Houses in Tamil Nadu Under Hon'ble Chief Minister's Solar Rooftop Capital Incentive Scheme

Tender reference: TEDA/ 3650 /SPV – 1kWp /CIS/2013-14

F-7 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

Dear Sir,

Sub:

Sub: Price Discovery Tender for Supply, Installation and Commissioning of Grid tied Solar Rooftop Power plants in TamilNadu – Reg.

Ref: TEDA/ 3650 /SPV – /CIS/2013-14

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

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 authorised person:

Name of the authorised person:

Designation:

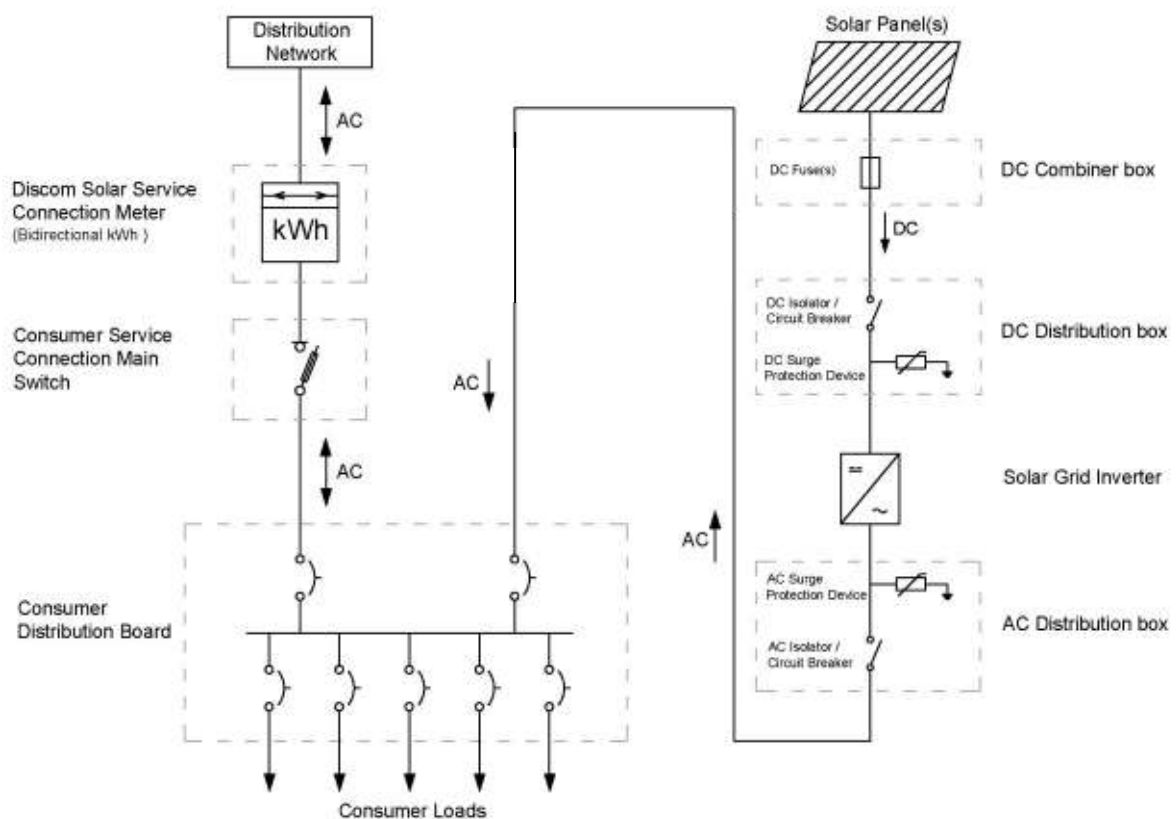
Name and Address of Bidder

Stamp of bidder

Tender reference: TEDA/ 3650 /SPV – 1kWp /CIS/2013-14

A-1. Typical Wiring Diagrams for Grid-Connected Solar System

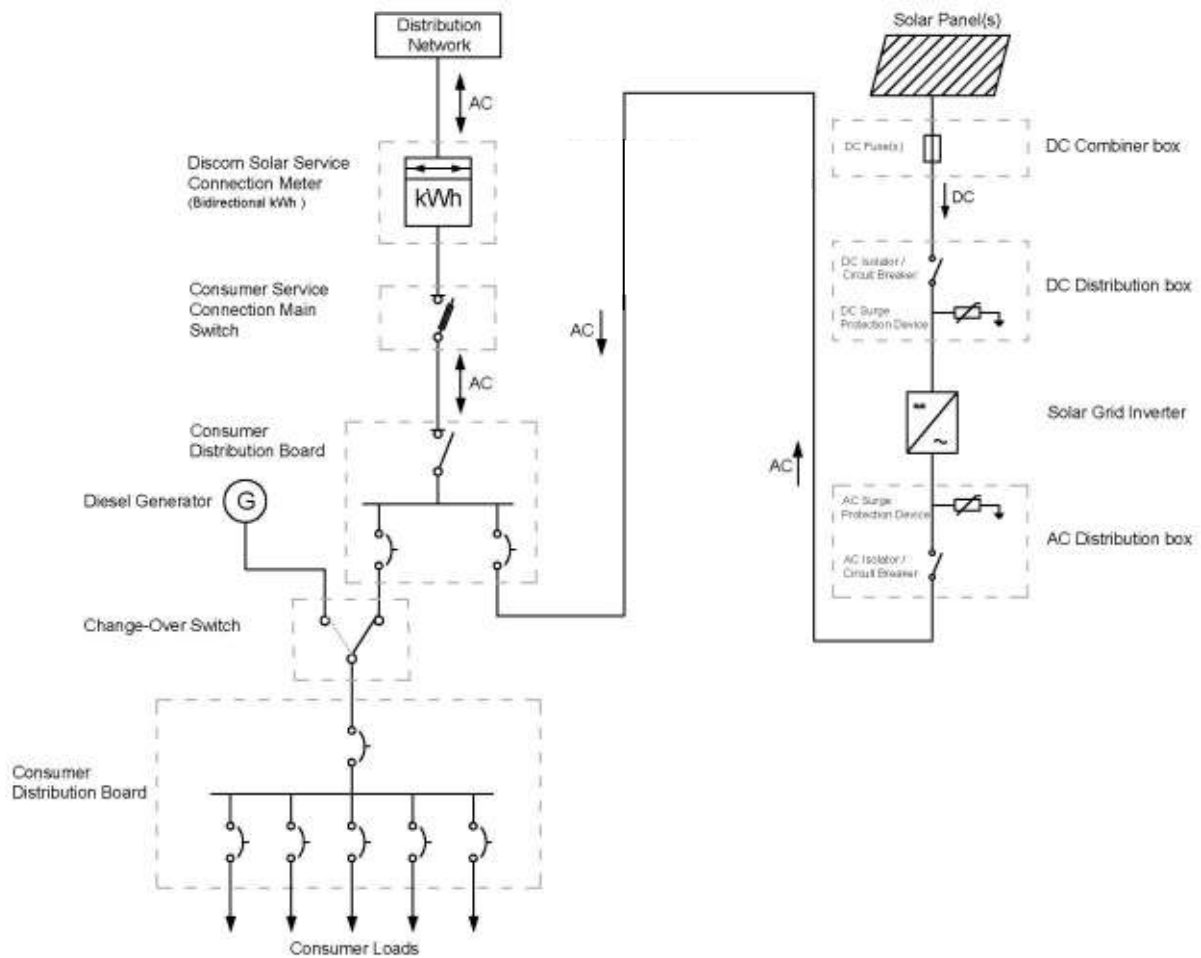
1. Typical wiring diagram for grid-connected solar PV system *without* diesel generator.



Price Discovery Tender for empanelment for Supply, Installation and Commissioning of Grid tied Solar Rooftop Power plants in 10,000 Houses in Tamil Nadu Under Hon'ble Chief Minister's Solar Rooftop Capital Incentive Scheme

Tender reference: TEDA/ 3650 /SPV – 1kWp /CIS/2013-14

2. Typical wiring diagram for grid-connected solar PV system with diesel generator.



A-2 EMD EXEMPTION

- i) The Small Scale Industrial units located within the State and Registered with the Tamil Nadu Small Industries Development Corporation.
- ii) The Small Scale Industrial units located within the State and Registered with National Small Industries Corporation(NSIC)
- iii) The SSI units holding Permanent Registration certificate from the District Industries Centres of Directorate of Industries and Commerce in respect of those items for which the Registration Certificate has been obtained.
- iv) Departments of the Government of Tamil Nadu.
- v) Undertakings and Corporations owned by Government of Tamil Nadu.
- vi) Labour Contract Co-operative Societies registered within Tamil Nadu.
- vii) 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.
- viii) Small Scale Industrial units located outside the State but registered with National Small Industries Corporation (NSIC) in respect of the items manufactured by them.

GENERAL MANAGER / TEDA