

# **Eol for additional Empanelment of Channel Partners for Supply, Installation & Commissioning of Residential Solar Rooftop Systems in the State of Gujarat**



**GEDA**

**Gujarat Energy Development Agency**  
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**A. NOTICE**

Gujarat Energy Development Agency – A State Nodal Agency for Promotion & Popularization of Renewable Energy Technologies & Systems and Energy Conservation in the State, invites sealed offers for implementation of Residential Solar Rooftop Systems:

<b>Sr. No</b>	<b>Description</b>	<b>Document Fee</b>
1	Expression of Interest (Eol) for additional Empanelment of Channel Partner (CP) for Supply, Installation and Commissioning of <b>Residential Grid Connected Solar Rooftop Systems</b> in the State of Gujarat up to 30 th June 2017	Rs.15,000/-

Expression of Interest document can be obtained from GEDA's website - [www.geda.gujarat.gov.in](http://www.geda.gujarat.gov.in).

Director, GEDA reserves the right to reject any/all offers without assigning any reasons thereof.

**Director**  
**Gujarat Energy Development Agency,**  
**Gandhinagar**

**B. Letter inviting offer**

Ref. No. GEDA/SOL-ROOFTOP/EOI/2016/1

Date: April 1, 2017

To,

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Sub : **Expression of Interest (Eol) for additional Empanelment of Channel Partner (CP) for Supply, Installation & Commissioning of Residential Solar Rooftop Systems in the State of Gujarat.**

Dear Sir,

Gujarat Energy Development Agency – A State Nodal agency of Govt. of Gujarat invites offers for **Empanelment of CP for Supply, Installation & Commissioning of Residential Solar Rooftop Systems in the State of Gujarat.**

Offers are invited from **Registered MNRE Channel Partners (CP) including New Entrepreneurs and PSUs Channel Partners under grid connected Solar Rooftop Programme**, and having adequate infrastructure facilities for manufacturing, marketing and to provide prompt & reliable after sales service and eligibility criterion as per the Offer Evaluation Criteria (OEC) of this document. Offers received from CP will only be taken in to consideration. Offers received from others will not be taken in to consideration and will be summarily rejected.

Offers submitted should be accompanied by non-refundable document fee of Rs. 15,000/- and an **Earnest Money Deposit of Rs.5,00,000/-** in the form of Demand Draft drawn in the form of Demand Draft drawn on any Nationalized Bank, ICICI Bank, IDBI Bank, AXIS Bank, HDFC Bank, Kotak Mahindra Bank, Yes Bank, IndusInd Bank , Saurashtra Gramin Bank, Baroda Gujarat Gramin Bank, Dena Gujarat Gramin Bank, The Kalupur Commercial Co-operative Bank Ltd. , Rajkot Nagrik Sahakari Bank Ltd. , The Ahmedabad Mercantile Co-operative Bank Ltd., The Mehsana Urban Co-operative Bank Ltd. separately in favor of **Gujarat Energy Development Agency** payable at **Gandhinagar**. Offers received without requisite Earnest Money Deposit will be summarily rejected.

(Sign. & Seal of the CP)

Offers submitted should include the following:

**Technical & Financial**

Containing original document duly signed and sealed on every page, Earnest Money Deposit in the prescribed form, details of manufacturing & infrastructure facilities as per the document, Technical Specifications and Brochures on the models proposed, Documents in support of Offer Evaluation Criteria, any other documents/ papers in support of claims made by the party.

Letter of acceptance to completely adhere to the terms & condition and technical specifications, as per the discovered price of Rs. 69/- per watt.

Offers submitted by the CP should be valid up to June 30 , 2017.

Sealed offers, duly super scribed on the envelop as “**Empanelment of CP for Supply, Installation & Commissioning of Residential Solar Rooftop Systems in the State of Gujarat**”

GEDA may at its discretion change the date & time of opening of the offers without assigning any reasons thereof. In the event of any change in the schedule, the same shall be communicated to you in time.

Director, GEDA reserves the right to reject any/all offers without assigning any reasons thereof.

Thanking you,

Yours faithfully,

**S.B.Patil**  
**Dy. Director**

(Sign. & Seal of the CP)

**C. CHECK LIST**

To ensure that your offer submitted to GEDA is complete in all respects, please go through the following checklist and tick mark for the enclosures attached with your offer:

<b>Sr. No</b>	<b>Description</b>	<b>Attached/ Not attached</b>	<b>Page No. if Attached</b>
1	Earnest Money Deposit in the prescribed form		
2	Document Fee in the prescribed form.		
3	The original document duly signed and sealed on every page, as a confirmation of acceptance of the terms and conditions of the document.		
4	A copy VAT and CST Number, Permanent Account Number (PAN) & Company Registration Certificate		
5	Relevant IEC certificates for SPV panels, PCU and all the other machineries valid upto 30 <sup>th</sup> Sept., 2017.		
6	General Information about bidder as per <b>Annexure - 1</b>		
7	Declaration of the Bidders about any relatives working with GEDA as per <b>Annexure - 2</b> of the Eol document		
6	Name and address of <b>dealers/ distributors/ service</b> stations in Gujarat along with copy of agreements as per <b>Annexure - 3</b> .		
9	<b>SPV instruction manual copy</b>		
10	<b>All the pages of Eol documents/ attachments numbered and entire document spiral bound.</b>		

**DETAILS OF EARNEST MONEY DEPOSIT AND EOI FEE ATTACHED**

<b>S.No.</b>	<b>Description</b>
1	<p><b><u>Earnest Money Deposit</u></b></p> <p>Earnest Money Deposit of <b>Rs.</b> .....submitted in the form of Demand Draft/ Banker's Cheque, drawn on Bank, _____ Branch, bearing DD/BC No. _____ dated _____ is attached herewith.</p>
2	<p><b><u>Eol Document Fee</u></b></p> <p>Eol Document Fee of <b>Rs.</b> .....submitted in the form of Demand Draft/ Banker's Cheque, drawn on _____ Bank, _____ Branch, bearing DD/BC No. _____ dated _____ is attached herewith.</p>

(Sign. &amp; Seal of the CP)

## **1.0 INTRODUCTION**

### **1. Background**

With the help of Financial Assistance from Government of Gujarat and/ or MNRE under their SPV Roof Top Programme,, GEDA wishes to select competent, experienced and financially sound CP/ Channel Partner (CP) registered under grid connected rooftop of MNRE; to supply, install, commissioning and to maintain Rooftop Solar Photovoltaic Grid connected Systems in the State of Gujarat. GEDA would release the subsidy to the eligible CP after installation of systems as per terms and conditions of this EOI.

Above work is to be carried out on '**Turn Key Basis**' which includes identification of beneficiaries in the State of Gujarat, collection of their share of cost after adjusting GEDA/ MNRE financial assistance, design, supply of SPV systems with all accessories and equipments, installation, testing, commissioning and maintenance services for 5 years with free replacement warranty on spare parts against manufacturing defects for five years. It also includes obtaining concern DISCOM and Chief Electrical Inspector (CEI) approvals.

**The total capacity of Rooftop SPV systems shall be about 25 MW for Residential Consumers. This quantity may further increase as per availability of allocations from State and CFA from MNRE for this programme.**

### **2. Mode of Execution of Programme:**

The basis of evaluation of the bids shall be the cost/rate quoted in the Price Schedule. To further clarify, installation and commissioning cost and taxes etc. shall be inclusive to the cost of supply of complete system including FIVE years comprehensive maintenance for comparison and evaluation. Proposers are required to quote rate / cost on firm basis and no price variation on any account shall be considered.

The selected authorized CP shall identify beneficiaries to supply, install, commission systems and **provide maintenance services for 5 years with free replacement warranty on spare parts against manufacturing defects for five years.** They shall also be required to set up their repair and maintenance centers for providing effective repair/maintenance services to the beneficiaries / users and meet conditions as given Scope of Work.

The Programme shall be carried out as per guidelines and as given hereunder:-

(i) The CP shall be allowed to install the systems conforming to the GEDA/ MNRE specifications / guidelines after authorization by GEDA.

(ii) For this GEDA shall give specific targets / limits to each selected CP and fix prices for sale of systems to the user (beneficiaries).

(iii) The subsidy sanction letter shall be issued to the CP on identifying the beneficiaries and submitting the complete list of beneficiaries.

(iv) The bidder may claim subsidy from GEDA by submitting complete list of beneficiaries along-with full addresses, date of installation, models and makes and serial numbers of systems & PV modules and BOS supplied along with the photographs of installed system duly verified by GEDA and/or its authorized agency/ies as per the norm of GEDA.



## **2.0 SCOPE OF WORK**

Scope of work covers identification of beneficiaries as per GEDA's conditions, Design, supply, installation, testing, commissioning and maintenance of SPV Grid connected Roof Top Systems in the State of Gujarat conforming to technical specification enumerated in relevant GEDA/ MNRE guidelines amended from time to time.

Detailed scope of work is given here under:-

### **2.1 Work of installation of SPV grid connected Systems shall involve :**

- (i) Identification and motivation of prospective beneficiaries.
- (ii) Preparation of Detailed Project Report (DPR) of the proposed Proposal of SPV Power Plant.
- (iii) Obtaining No objection certificate from concerned DISCOM for grid connectivity and CEI's approval.
- (iv) Collection of balance cost payable by beneficiary after deducting subsidy payable by GEDA.
- (v) Entering into supply and comprehensive maintenance contract (CMC) agreements with beneficiaries. CMC shall be for five years as per Maintenance services for 5 years with free replacement warranty on spare parts against manufacturing defects for five years..
- (vi) Design, supply, civil work, erection, testing and commissioning of SPV grid connected Power Plant as per schedule given at the time of allotting targets.
- (vii) The work covers Design, supply, installation, commissioning and comprehensive maintenance for FIVE years.
- (viii) **Establishing "After sales service centres" in concerned area to cater the maintenance needs of beneficiaries.**

GEDA reserves the right to allot any area(s) / districts to any authorized CP firm among the all authorized CP.

### **2.2 PROJECT COST**

- 2.2.1 The Project cost shall include all the costs related to above Scope of work. Bidder shall quote for the entire facilities on a "single responsibility" basis such that the total Bid Price shall cover the obligations mentioned in the Bidding Documents in respect of Design, Supply, Erection, Testing and Commissioning including Warranty, Operation & Maintenance for a period of 5 years goods and services including spares required if any, during the

O&M period. The Bidder has to take all permits, approvals and licenses etc., provide training and such other items and services required to complete the scope of work mentioned above.

- 2.2.2 The price quoted is on lump sum turnkey basis including all taxes & duties applicable and the bidder is responsible for the total scope of work described as above.
- 2.2.3 The project cost shall remain firm and fixed and shall be binding on the Successful Bidder till completion of work for payment of subsidy amount irrespective of his actual cost of execution of the project. No escalation will be granted on any reason what so ever. The bidder shall not be entitled to claim any additional charges, even though it may be necessary to extend the completion period for any reasons what so ever.
- 2.2.4 The cost shall be inclusive of all duties and taxes etc. The prices quoted by the firm shall be complete in all respect and no price variation/adjustment shall be payable.
- 2.2.5 The operation & maintenance of Solar Photo voltaic Power Plant would include warranty against wear, tear, overhauling, machine breakdown and replacement of defective modules, invertors/ Power Conditioning Unit(PCU), spares, consumables & other parts for a period of 5 years.
- 2.2.6 The discovered **Project cost is @ Rs. 69/- per Wp (Watt peak)**. The project cost is in accordance with all terms, conditions, specifications and other conditions of the Contract as accepted by the GEDA and incorporated into the Agreement. The discovered price is exclusive of fee and other charges such as GEDA application registration fee, security deposit payable to office of DISCOM and will be payable either by beneficiary or the CP separately.
- 2.2.7 The Bidder shall be responsible and 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.
- 2.2.8 The Bidder shall also take insurance for Third Party Liability covering loss of human life, engineers and work men and also covering the risks of damage to the third party / material/ equipment/ properties during execution of the Contract. Before commencement of the work, the Bidder will ensure that all

its employees and representatives are covered by suitable insurance against any damage, loss, injury or death arising out of the execution of the work or in carrying out the Contract. Liquidation, Death, Bankruptcy etc., shall be the responsibility of bidder.

### 2.3 Net metering of Power :

Net metering is the concept which records difference between export of generated energy and import of energy from DISCOM grid during billing cycle. The SPV power consumer shall pay for the net energy in a billing period as per applicable retail supply tariff as determined by regulatory commission, if the supplied energy by the Discom is more than the injected energy by the solar PV sources of the consumer(s).

Gujarat Electricity Regulatory Commission (GERC) had issued “**Regulation for net metering Rooftop Solar PV Grid Interactive Systems**” no. 5 of 2016 dated 18/06/2016. The SPV Power generators/beneficiaries going for installation of SPV Power Plants under this scheme will be governed by the rules & regulations of Net Metering scheme and other related regulations as notified by GERC and amended time to time.

The Empanelled CP shall bear the entire cost of metering arrangement provided including its accessories. The installation of meters, wherever applicable, shall be carried out by the CP as per the procedures in vogue of the Discom(s) with their permission.

### 2.4 Eligible Beneficiary for SPV Grid connected Systems:

As per present norms for eligibility for subsidy under SPV Roof Top programme of GEDA/ MNRE, following are the eligible for getting subsidy as admissible:

S. No.	Category	Coverage
1	<b>Residential*</b>	All type of private residential consumers, subject to Solar PV capacity not exceeding 50% of the Sanctioned load specified in the Electricity Bill.

\* with State subsidy + MNRE subsidy, if available.

### 2.5 PROJECT ALLOCATION AND SANCTION :

2.5.1 The identification of the projects (roof tops) at the time of bidding is not mandatory.

2.5.2 The Successful Bidders selected shall be allocated capacity/ targets.

(Sign. & Seal of the CP)

2.5.3 The bidders who have been notified as eligible Bidders, shall be given 3 months from the date of issue allocation of targets for identification of rooftops and submission of Project sanction documents as per GEDA/ MNRE requirements amended from time to time:

1. Detailed Project Report
2. No objection Certificate from the concerned DISCOM for grid connectivity

Further, eligible Bidders can start submitting their Project sanction documents as soon as they receive target allocation from GEDA. If the successful bidders fail to identify the projects for allocated capacity in full or part, within the time limit, in such case, it will be assumed that the bidder is not capable to complete the allocated work and in this situation penalty will be imposed and this balance allocation will be awarded to another bidder.

2.5.4 If there is some left out quantity found due to incapability of the bidder at any time from the date of issue of allocation, this will be offered to other Successful Bidder(s) having ready proposals with them.

2.5.5 For identification of projects, GEDA may provide help such as publicity etc and will also make available the list of interested beneficiaries available with GEDA, However the entire responsibility of finding the beneficiaries lies with the Bidder.

2.5.6 GEDA will issue the Sanction Letter(s) for the Project(s) indicating the subsidy amount(s) which will be disbursed in line with the provisions of the EoI document. The Bidder shall complete the design, engineering, manufacture, supply, storage, civil work, erection, installation, testing & commissioning of each project within 3 months period from the date of issue of sanction letter.

## **2.6 Subsidy Pattern:**

A Subsidy of Rs. 10,000/- per kW would be disbursed by GEDA after successful installation and commissioning of Rooftop Solar System by private **Residential Consumers** with maximum limit of Subsidy of Rs. 20,000/- per consumer. The subsidy would be limited to installation of 2 kW Rooftop Solar System only. The total capacity of the rooftop Power plant could be higher subject to ceiling of 50% of contracted load as per the Gujarat Solar Power Policy 2015.

The minimum capacity of rooftop SPV Power Plant to be installed shall be **not less than 1kW for single site.**

Note: (i) All provisions as amended by GEDA/ MNRE, GoI from time to time in respect of subsidy, norms of admissible beneficiary and allowable capacity of PV systems shall be applicable to this scheme accordingly.

(ii) Remaining cost will be borne by beneficiary.

### **2.7 Model of SPV Systems and tentative Quantities:**

GEDA proposes to take up installation of grid connected PV Power Plants { without Battery Back up} under this programme. The details of tentative quantities are as under :

S.No.	PV System Models:	Individual system PV Capacity eligible for subsidy	Total Tentative Targets
1.	SPV Grid connected Power Plants without Battery Bank:	Above 1 kW to 2 kW	25 MW { This capacity can further increased as per allocation by State/ MNRE}

### **3.0 ELIGIBILITY AND EXPERIENCE**

- ELIGIBILITY:** MNRE Channel Partner including channel partner under category of New Entrepreneurs & PSU for grid connected Solar Rooftop programme registered as MNRE CPs (listed online).
- SPECIFICATIONS:** The specifications of SPV systems, for which Eols are invited, are annexed. The notarized Test Report(s) of each of the components/ systems mentioned should be attached with the Eol and the same should be installed at site.
- AFTER SALES SERVICES:** Bidders should have well established network of service centers within the state and should have adequately trained staff available at service stations for repair and maintenance of Solar PV Systems.
- Bidders will ensure that necessary spares are always available with their service centers to provide necessary after sales service to the customers during the warranty period.

#### **4.0 INSTRUCTIONS TO THE CHANNEL PARTNERS**

- A.1** Offer should be submitted complete in all respects with all schedules, documents etc. of the Eol document. Offers shall be received in GEDA office upto the date and time as mentioned in the Eol form.
- A.2** GEDA reserves the rights to reject any or all the Offers or accept any Offer in total or in part or may divide the work among various Bidders, without assigning any reason thereof.
- A.3** Eols should be accompanied with requisite Document fee and Earnest Money Deposit (EMD). Any Eol not accompanied by required Earnest Money Deposit (EMD) shall be disqualified and no further consideration shall be given to such Eol. Bidders may note that no relaxation in this regard shall be made.
- A.4** Earnest Money Deposit (EMD) of unsuccessful Bidders shall be returned back upon finalization of Eols. **Earnest Money Deposit of successful Bidder will be retained as Security Deposit.**
- A.5** If any information provided by the Bidders is found to be concealed, suppressed or incorrect at later date or during finalization of the Eol or the Bidders withdraws their offer during finalization of the Eol, the Eol shall be liable to be rejected and company shall be debarred from executing any business with GEDA for the period of 3 years and the EMD of such Bidders shall be forfeited.
- A.6** **Validity of the offer should be at least up to June 30, 2017 Without this validity the Offers shall be rejected.**
- A.7** Before submission of the Offer, Bidders are required to make themselves fully conversant with the scope of the work, technical requirements and specifications, etc., so that no ambiguity arises on a later date in this respect.
- A.8** All information in the Offer shall be in English. Information in any other language should be accompanied by its certified/ notarized translation in English. Failure to comply with this may disqualify the Bidders.
- A.9** If the Bidders finds discrepancies in, or omissions from the specifications or other documents or if he is in doubt as to their meaning, he should at once intimate GEDA and obtain clarification in writing within 7 days from the date of announcement of Eol, prior to submitting his Offer. Any representation/ requests after 7 days from the date of announcement of Eol shall not be entertained.

- A.10** Any approach from the Bidders, his representative or his agent to influence the decision on the Offer, officially or otherwise, shall render the Offer liable to be summarily rejected.
- A.11** Offer should be submitted in sealed envelopes super scribed with as **"Additional Empanelment of CP for Supply, Installation & Commissioning of Residential Solar Rooftop System in the State of Gujarat"**. All the papers of Eol documents duly signed should be submitted in the envelope. Requisite Earnest Money Deposit and Eol Document Fee in the form of Demand Draft drawn on a nationalized bank, ICICI Bank, IDBI Bank, AXIS Bank, HDFC Bank, Kotak Mahindra Bank, Yes Bank, IndusInd Bank , Saurashtra Gramin Bank, Baroda Gujarat Gramin Bank, Dena Gujarat Gramin Bank, The Kalupur Commercial Co-operative Bank Ltd. , Rajkot Nagrik Sahakari Bank Ltd. , The Ahmedabad Mercantile Co-operative Bank Ltd., The Mehsana Urban Co-operative Bank Ltd. pledged in the name of "Gujarat Energy Development Agency", payable at Gandhinagar should be attached with this bid.
- A.12** Erases and other changes shall be initialed by the person/persons signing the Offer.
- A.13** Each page of the Offer document should be signed and stamped by the Bidders as a token of acceptance to terms and conditions mentioned herein.
- A.14** Offers of only those firms or individuals, who are themselves technically capable and sound for providing such services and who give satisfactory evidence of such experience shall only be considered.
- A.15** The general technical requirements mentioned are mainly for the guidance of the Bidders. These requirements are not intended to preclude ingenuity of designs or other improvements. If the Bidders proposes any deviation from these requirements those shall be considered provided they are necessary either to improve the utility, performance and efficiency or to secure over all economy. The Bidders shall give a separate list containing points of deviations in his offer from the specifications asked for.
- A.16** The Bidders shall declare the name of the employee of GEDA and his relationship with him in case any employee of GEDA is a relative of the Bidders.
- A.17** In the event, the successful Bidders fails to sign the agreement with GEDA or accept the work order within specified time or withdraws his offer within the validity period or fails to accept the order for any reason whatsoever, then the earnest money deposited by the Bidders shall be forfeited by GEDA.
- A.18** GEDA reserves the right to accept any offer based on its merits and GEDA is not bound to allocate targets with the party having submitted the lowest offer.

Thus party merely on the ground that their financial offer is lowest, does not necessarily qualify them for receiving the allocation of targets.

- A.19** Only Notarized copies of documents will be submitted in support of claims made by the party. Party shall bring the original copies of documents for verification by GEDA officials, if called for. Details of similar work done ONLY in last three years along with copies of the orders and certificates from the end user to be attached with the Eol. **Extra copies/ documents which are not specified in the document may not be attached to the offer.**



## **5.0 GENERAL TERMS AND CONDITIONS**

B-1 In this deed of agreement/ Offer, unless the context otherwise requires:-

GEDA shall mean the Director or his representative of Gujarat Energy Development Agency, with Head Office at 4<sup>th</sup> floor, Block No. 11 and 12, Udyog Bhavan, Sector - 11, Gandhinagar – 382 017, and shall include his successors and assignees.

The Bidders shall mean valid MNRE registered channel partners for grid connected rooftop programme. Consortium or Joint Venture is not allowed in this Eol.

B-2 The Bidders shall be deemed to have carefully examined all the papers, drawings, etc. attached in the contract. If he has any doubt as to the meaning of any portion of any condition/ specification, etc. he shall before signing the contract submit the particulars thereof to GEDA in order that such doubts are removed.

B-3 The work, shall be completed within the completion period as mentioned in the agreement, failing which penalty shall be imposed as time is the essence of the contract. If the Bidders fails to complete the work within time limit, GEDA reserves the right to cancel the allocations. This excludes delay in the completion of the work due to unforeseen reasons beyond the control and without fault and negligence of the Bidders including (but not restricted to) act of God or public anomie action of Government in its sovereign capacity, floods, epidemics, strikes, lockouts, fires and accidents. In the event of any of the aforesaid contingencies GEDA may be promptly kept informed by the Bidders by Fax/Telex/Telegram followed by confirmation in writing with documentary proof within fifteen days of commencement and cessation of Force Majeure circumstances. Under such circumstances reasonable extension of time shall be granted by GEDA. Application for such extension must be made before the due date of completion of work as per agreement. In the event of termination of the agreement, GEDA shall be at liberty to get the remaining part of the work done through any other agency/Bidders in the manner and on the terms it thinks proper. If the cost of executing the work as aforesaid shall exceed the balance due to the Bidders, and the Bidders fails to make good the deficiency, GEDA may recover it from the Bidders in any lawful manner.

B-4 The Bidders shall have to comply with all rules, regulations, laws and bylaws enforced by local and State Govt. and also the organization in whose premises the work has to be done.

- B-5 The Bidders shall not, without the consent in writing of GEDA, transfer, assign or sublet the work under this contract or any substantial part thereof to any other party.
- B-6 If the Bidders neglects to execute the work with due diligence and expedition or refuses or neglect to comply with any reasonable orders within two days notice given in writing to the Bidders and if he fails to comply with the notice, then in such a case GEDA shall be at liberty to get the work or any part of it, executed through any other agency/Bidders in the manner and on the terms it thinks proper. If the cost of executing the work as aforesaid shall exceed the balance due to the Bidders, and the Bidders fails to make good the deficiency, GEDA may recover it from the Bidders in any lawful manner.
- B-7 GEDA shall have at all reasonable time access to the works being carried out by the Bidders under this contract. All the works shall be carried out by the Bidders to the satisfaction of GEDA.
- B-8 Any question, dispute or difference whatsoever arises between GEDA and Bidders, in connection with this agreement except as to matters, the decision for which has been specifically provided, either party may forthwith give to the other notice in writing of existence of such questions, dispute, difference and the same shall be referred to the sole arbitration of a person nominated by Director GEDA. This reference shall be governed by Indian Arbitration Act prevailing at the time of dispute and the rules made there under. The award in such arbitration shall be final and binding on all the parties. Work under the agreement shall continue during the arbitration proceedings unless the GEDA or the Arbitrator directs otherwise.
- B-9 GEDA may at any time by notice in writing to the Bidders either stop the work altogether or reduce or cut it down. If the work is stopped altogether, the Bidders shall only be paid for work done and expenses legitimately incurred by him as on preparation of the execution of the work upto the date on which such notice is received by him. Such expenses shall be assessed by GEDA whose decision shall be final and binding on the Bidders. If the work is cut down the Bidders shall not be paid for the work as so cut down, but in neither case shall be paid any compensation what so ever for the loss or profit which he might have made if he had been allowed to complete all the work included in the contract.
- B-10 Prior to dispatch, the materials in lots may be inspected and tested by GEDA at the Bidder's works.
- B-11 The system supplied or installed shall be guaranteed by the Bidders for a minimum period of **five years** in regard to quality of material, workmanship, performance, efficiency, installation, etc. Defects developed in the system within guarantee period, shall be rectified by the Bidders at his own expense

promptly. In case the defects are not rectified within 2 days of the receipt of the complaint by the Bidders, GEDA shall have full liberty to remove such defect or undertake such repairs as may be necessary to restore the system in working condition. The expenditure so incurred by GEDA shall be deducted from Bidder's pending claims, security, etc. and if necessary may be recovered in other mode provided under the law. In the event of failure of the complete system, if necessary, the whole system shall be replaced by the Bidders promptly.

B-12 Notices, Statements and other communications sent by GEDA through registered post or telegram or telex or to the Bidders at his specified address shall be deemed to have been delivered to the Bidders.

B-13 The work shall be carried out by the Bidders with prior approval of GEDA. Work carried out without GEDA's approval shall not be accepted and the GEDA shall have right to reject it and to recover the cost as so incurred, from the Bidders.

B-14 All equipment/material shall be suitably packed for transport/carriage at site and outdoor storage during transit **as per best industrial practices and appropriate standards**. The Bidders shall be responsible for any damage to the equipment during transit due to improper or inadequate packing. The cases containing easily damageable material shall be very carefully packed and marked with appropriate caution symbols i.e. 'FRAGILE, HANDLE WITH CARE' etc. The contents of each package shall bear marking that can be readily identified from the package list and packing shall provide complete protection from moisture, termites and mechanical shocks during shipment/transportation to site. Adequate protection must be provided for outdoor storage at site in tropical humid climate, wherever necessary proper arrangement for attaching signs for lifting shall be provided and all packages clearly marked with gross weight, signs showing 'UP' and 'DOWN' sides of boxes, contents of each package, order no. And date, name of the plant/equipments to which the material in the package forms the part of, and any handling and unpacking instructions considered necessary. The Bidders without any extra cost shall supply any material found short inside intact packing case. The Bidders shall ascertain prior to shipment, from concerned authorities, the transport limitations like weight and maximum allowable package size for transportation. All packing cases and packing material shall become the property of the purchaser.

B-15 The Bidders shall provide one copy of the instruction manual and routine maintenance manual in Gujarati with each system supplied or installed. These manuals should contain all the relevant details and drawings required for proper maintenance of the system supplied or installed.

B-16 The Bidders shall not display the photograph of the work and shall not take advantage through publicity of the work without written permission of GEDA.

B-17 The inspection as mentioned in clause No. B-10 by GEDA's representative shall not relieve the Bidders from full responsibility of completing the work confirming to the requirement of this contract.

B-18 Conditional Eols shall not be accepted.

## **6.0 GUIDELINES & SPECIFIC TERMS AND CONDITIONS**

1. Supply, Installation & Commissioning of grid connected Solar Rooftop Systems - 25 MW in the State of Gujarat shall be done through Direct Sales by CP authorized by GEDA as per the rates fixed by GEDA. The quantity mentioned herein is indicative only and it may vary depending on allocation of funds and target for the project.
2. The successful Bidder will be required to enter in to an agreement with the agency as per the draft agreement of this document. The programme implementation guidelines of GEDA/ MNRE, as declared from time to time, for SPV programme shall also be followed at all times.
3. CP will be responsible to provide adequate training on repair and maintenance to their dealers of Solar PV Systems for which Empanelment is granted by the agency.
4. CP will ensure that necessary spares are always with their dealers to provide necessary after sales service to the customers during the guarantee period.
5. CP will ensure that the SPV systems are marketed by them and their dealers as per the rates fixed by GEDA. GEDA reserves the right to cancel the Empanelment of CP, if any dealer appointed by them is found to be marketing systems at rates other than those fixed by GEDA. In such event, the Security Deposit of the CP will be forfeited.
6. GEDA shall allocate targets to various CP after the finalization of Empanelment of CP up to June 30, 2017. The targets allocated for identifying & registering of beneficiaries shall be completed within a period of 4 months, failing which the targets shall be reallocated to other CP and necessary penalty shall be imposed, upon review of the progress by GEDA.
7. SPV Rooftop Systems shall be manufactured and marketed by the CP and the prevailing subsidy shall be paid to the CP on behalf of the beneficiaries. The prices of SPV Rooftop Systems shall be fixed by GEDA.
8. To avail reimbursement of subsidy, application for SPV Rooftop Systems shall be submitted by the authorized CP along with the necessary details as per GEDA / MNRE requirements.
9. After the issuance of sanction letter by GEDA for the beneficiary, beneficiary will not be permitted to change the CP. Change in the name of beneficiary is also not allowed. Fresh application has to be made for new beneficiary. Subsidy once cancelled due to any reasons shall not be reconsidered.
10. Empanelled CP, to whom targets are allocated, will be required to deposit security deposit of Rs.5,00,000/- or 5% of subsidy value of the target allocated to them, whichever is more. The Security Deposit will be accepted in the form of

Demand Draft issued by Scheduled Bank in favour of Gujarat Energy Development Agency payable at Gandhinagar. The Security Deposit can also be submitted in the form of Bank Guarantee issued by Scheduled Bank as per GEDA's format with validity up to September 30 th , 2017. The Security Deposit submitted in the form of Demand Draft will be retained till September 30 th 2017. No interest will be paid on the Security Deposit. The Earnest Money Deposit of the successful bidders will be adjusted as security deposit and will form part of the total security deposit required to be deposited by the successful bidder.

11. In the event of granting additional targets, the CP will be required to deposit additional Security Deposit on prorata basis within one week of the issuance of the additional target.
12. **It is very critical to Install & Commission systems as per the targets set by the agency before June 30, 2017.** To ascertain the manufacturing capabilities of each CP, no. of systems that could be supplied, installed and commissioned by the CP in the state, every CP is required to submit with their Technical offer, information about manufacturing capacity of their factory and no. of systems that could be supplied by March 2017 in the State under agreement with GEDA as per the Annexure – A. In the event of failure to supply no. of systems as committed by the CP as per Annexure – A as accepted by them while receiving the targets, will lead to forfeiture of the Security Deposit up to 100% and will lead to disqualification of the CP for transacting business with GEDA for atleast five years or the time duration as may be decided by the Director, GEDA.
13. GEDA, at its discretion, may allocate target to more than one CP and will decide the targets to be allocated to them. Decision of GEDA in this matter, will be binding to all the CP.
14. In case of any type of misappropriations, cheating or intention of cheating, frauds, irregularities, malpractice, etc. the Director GEDA reserves the right to cancel the Empanelment without giving reasons thereof and forfeit the security deposit.
15. Rates discovered by the CP will be inclusive of taxes, levies, duties, packing, forwarding, freight, insurance, loading unloading, supply, installation, commissioning, and any/ all charges for successful Supply & Installation of the system at any locations in the State of Gujarat and all expenses of marketing, commissions etc
16. The rates discovered by the CP will be inclusive of Service Tax, Work Contract Tax, VAT or any other taxes applicable for such work. Any escalation in such taxes/ levies during the tenure of the contract/ Empanelment will not be paid by GEDA and CP are advised to take in to consideration any such escalations in the prevailing taxes/levies/duties.
17. During site inspection by GEDA staff/ authorized representative, if the systems are found uninstalled and false report of installation & commissioning is

submitted to GEDA for claiming payment, Director, GEDA is empowered to forfeit Security Deposit up to 100%.

## **7.0 OFFER EVALUATION CRITERIA**

Offers are invited from CP having adequate infrastructure facilities for manufacturing, marketing and to provide prompt & reliable after sales service and satisfying criterion as per the following Offer Evaluation Criteria (OEC). Offers of only those parties who are found qualifying based of following Offer Evaluation Criteria will be taken in to further consideration and prices of only those parties qualifying based of these criterion will be opened.

### **TECHNICAL**

- 1) Offers received from only those parties having adequate infrastructure to Supply, Market and provide after sales services in the state will be taken in to consideration and offers received from others will be summarily rejected. Documentary evidences in support of the same should be enclosed with the offer. GEDA may visit manufacturing facilities to ascertain the claims made by the CP.
- 2) The party should be Registered MNRE Channel Partners (CP) including CP under the category of New Entrepreneurs and PSUs for grid connected Solar Rooftop Programme.
- 3) The CP should have a valid test certificate from MNRE Authorized Test Centers for the systems offered by them. A Notarized copy of the same should be attached with the offer.
- 4) Parties must have authorized dealers. A Notarized copy of such dealership or tie-up agreement should be attached with the offer.
- 5) The party should have sufficient technically qualified and well-experienced manpower for Manufacturing, Marketing, Installation and after sales service of the systems. Brief bio-data of the key personnel be enclosed with the offers as per Annexure-II of the Document.

### **GENERAL**

- 1) The party should declare if any relatives working with GEDA.
- 2) As an acceptance of terms and conditions, the document duly signed and sealed on every page should be returned along with the offer.
- 3) 60% of the total capacity of the project shall be allocated between the all eligible bidders and balance 40% of the capacity shall be allocated upon the review of the progress and successful completion of allocated targets.

Offers not satisfying any of the above mentioned criteria will be liable for rejection.



## 8.0 DRAFT AGREEMENT OF EMPANELMENT

*ON RS.100 NON-JUDICIAL STAMP PAPER*

### **AGREEMENT FOR SUPPLY, INSTALLATION & COMMISSIONING OF ROOFTOP SPV SYSTEMS IN GUJARAT BETWEEN CHANNEL PARTNER (CP) AND GUJARAT ENERGY DEVELOPMENT AGENCY, GANDHINAGAR FOR 2016-17 ROOFTOP SPV PROGRAMME.**

Validity : From \_\_\_\_\_ to 01/04/2017.

This agreement made at Gandhinagar on this .....day of ....., 2017 between Gujarat Energy Development Agency having its registered office at 4<sup>th</sup> floor, Block No. 11 & 12, Udyog Bhavan, Sector-11, Gandhinagar – 382 017 hereinafter referred to as “GEDA” which expression shall (Unless be repugnant to the context or meaning thereof) will deem to include, its successors, heirs, executors & assignees of the first party.

**A N D**

....., hereinafter referred to as the “CP” which expression shall unless be repugnant to the context of meaning thereof deem to include its successors, heirs, executors & assignees of the second party for implementation of GEDA/ MNRE Solar Photovoltaic programme in the State of Gujarat.

#### ***PREAMBLE***

Marketing of SPV systems at subsidized prices will be done by CP authorized by GEDA. GEDA will grant prevailing subsidy as per guidelines of GEDA/ MNRE on Rooftop Solar PV Systems marketed by CP as per terms & conditions mentioned hereunder.

It is hereby agreed by GEDA and the CP desirous of supply, installation and commissioning the Rooftop Solar PV Systems as per the scheme of GEDA/ MNRE, to implement the SPV programme with following terms and conditions :

#### **1. GENERAL TERMS AND CONDITIONS**

1.1 The CP shall supply Rooftop Solar PV System as per specifications of GEDA/MNRE, and shall install them throughout the state through dealers/ distributors network created by them only after the issuance of sanction by GEDA.

(Sign. & Seal of the CP)

- 1.2 The CP shall give **five year warranty** for Rooftop Solar PV Systems and **ten year warranty** for Solar Module to the beneficiaries from the date of installation & Commissioning of Rooftop Solar PV System and undertake repairs/replacements free of cost against any manufacturing or material defects directly or through their dealer during the warranty period. Format of warranty card to be supplied with each Rooftop Solar PV System shall be as per GEDA/ MNRE requirement.
- 1.3 The CP shall arrange to provide to each beneficiary, a SPV instruction manual as per GEDA/ MNRE requirement. The CP shall also arrange to instruct each beneficiary about routine maintenance procedure.
- 1.4 All repairing work shall be completed within one week after receipt of complaint from the user. The CP shall arrange to provide spares required by the user at user's cost even after the guarantee period is over for atleast a period of five years.
- 1.5 It is mandatory for the CP to achieve targets allocated to them in all the areas of the State.
- 1.6 It is very critical to Install & Commission systems as per the targets set by the agency before the end of financial year i.e. **before June 30 , 2017**. In the event of failure to supply no. of systems, as committed by the CP as per Annexure – A of the EoI, and as accepted by them while receiving the authorization, will lead to forfeiture of the Security Deposit up to 100% and will lead to disqualification of the CP for transacting business with GEDA for atleast five years or the time duration as may be decided by the Director, GEDA.

## **2. GUIDELINES FOR APPOINTMENT OF DEALERS**

- 2.1 Dealer should have permanent office premises preferably with a phone connection.
- 2.2 The dealership commission will be paid by the CP. After Sales Services shall be provided by the respective dealers. They should maintain a work register for complaint received and those attended. The complaints received by GEDA will be considered while reviewing the performance and allotment of targets.
- 2.3 Dealers should maintain sufficient stock of spare parts for Rooftop Solar PV System at any given time. Working hours should be displayed on board.

## **3 MANUFACTURING/ SUPPLYING OF ROOFTOP SPV SYSTEMS**

- 3.1 GEDA will not issue any formal orders but GEDA will allocate targets for sanction of subsidy of Rooftop SPV Systems fixed for that year. Each CP shall be given a target, of which the overall achievement should be **atleast 70% by 31 st May 2017 and 100% by 15<sup>th</sup> June 2017**. The targets allocated will be reviewed every month. However, if the progress is not found satisfactory, Director, GEDA reserves the right to reallocate the targets and impose penalty.

3.2 The CP shall at all times follow the specifications of GEDA/ MNRE for Rooftop Solar PV System. Subsidy and other benefits shall be available only on those Rooftop Solar PV System designs of which are tested and found satisfactory by DISCOM/ GEDA.

3.3 Serial Number (identification mark) must be permanently marked on all major components (PCU, Module etc.) of the Rooftop Solar PV System.

#### **4 INSPECTION OF SPV SYSTEMS**

4.1 GEDA reserves the right to inspect any number of SPV systems, any number of times at the addresses of the beneficiaries given by the CP.

#### **5. IDENTIFICATION OF BENEFICIARIES**

5.1 CP shall be responsible for the identification of genuine beneficiary. CP shall select the suitable beneficiaries after visiting the site and check the pre-feasibility for installation of systems. All applications of beneficiaries need to be registered with GEDA as per the provision of Gujarat Solar Power Policy – 2015. Necessary application form is available on GEDA website.

5.2 Private residential consumers shall be eligible for subsidy. No individual would be given more than one system.

5.3 Installation of the systems shall be done only after the issuance of sanction by GEDA.

5.4 All Rooftop Solar PV System will be manufactured & installed strictly in accordance with the specifications given by GEDA in the EoI. All wiring shall be concealed/ in Rigid PVC pipe/ PVC *patti* as per the requirement of site.

5.5 After the issuance of sanction letter by GEDA change of beneficiary is not allowed and beneficiary cannot change the CP. Fresh application has to be made for new beneficiary. Subsidy once cancelled due to any reason shall not be reconsidered.

#### **6 PAYMENTS**

6.1 No mobilization advance would be paid by GEDA to the CP.

6.2 Subsidy shall be paid as explained below :

The State subsidy amount for a Solar PV systems shall be fixed by GEDA and subsidy shall be released to the CP as per the following:

100 % after submission of the following necessary documents **in duplicate** at GEDA & after on-site verification/ inspection of the systems by GEDA and/or its authorized inspection agency/ies, as per norms of GEDA and after Commissioning:

a) Bills.

b) Beneficiary-wise record of system duly typed in English as per GEDA/MNRE requirement.

The MNRE subsidy shall be released upon receipt of its sanction and release of funds to GEDA.

Any dispute between the CP and GEDA regarding Supply, Installation & Commissioning of Rooftop Solar Photovoltaic Systems shall be settled through negotiations and arbitration under Indian Arbitration's Act -(1996), failing which it will be settled in the court of Law for which the jurisdiction will be Gandhinagar.

In witness whereof the parties set their hand in token of confirmation and acceptance of the terms and conditions therein above written & mentioned.

Signature of Authorized Signatory  
Name of Authorized Signatory :

Signature of Authorized Signatory  
Name of Authorized Signatory

On behalf of (Name of CP)

On behalf of

Gujarat Energy Development Agency

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## **9.0 TECHNICAL SPECIFICATIONS**

### **TECHNICAL SPECIFICATIONS FOR GRID CONNECTED SPV SYSTEMS**

**The proposed projects shall be commissioned as per the technical specifications given below. Any short comings will lead to cancelation of subsidy in full or part as decided by GEDA. The specifications, if any, in the GERC Regulation on Net Metering shall also be applicable.**

#### **1. DEFINITION**

A Grid Tied Solar Rooftop Photo Voltaic (SPV) power plant consists of SPV array, Module Mounting Structure, Power Conditioning Unit (PCU) consisting of Maximum Power Point Tracker (MPPT), Inverter, and Controls & Protections, interconnect cables, solar meter, bi-directional energy meter and switches. PV Array is mounted on a suitable structure. Grid tied SPV system is without battery and should be designed with necessary features to supplement the grid power during daytime. Components and parts used in the SPV power plants including the PV modules, metallic structures, cables, junction box, switches, PCUs etc., should confirm to the BIS or IEC or international specifications, wherever such specifications are available and applicable.

Solar PV system shall consist of following equipments/components.

- Solar PV modules consisting of required number of **Crystalline** PV modules.
- Grid interactive Power Conditioning Unit with Remote Monitoring System.
- Mounting structures.
- Junction Boxes.
- Earthing and lightening protections.
- IR/UV protected PVC Cables, pipes and accessories.
- Solar Meter and Bi-directional Energy Meter

#### **a. SOLAR PHOTOVOLTAIC MODULES:**

1.1.1 The PV modules used should be made in India, as per MNRE requirements.

1.1.2. The PV modules used must qualify to the latest edition of IEC PV module qualification test or equivalent BIS standards Crystalline Silicon Solar Cell Modules IEC 61215/IS14286. In addition, the modules must conform to IEC61730 Part-2-requirements for construction & Part 2 – requirements for testing, for safety qualification or equivalent IS.

a) For the PV modules to be used in a highly corrosive atmosphere throughout their lifetime, they must qualify to IEC 61701/IS 61701

b) The total solar PV array capacity should not be less than allocated capacity (kWp) and should comprise of solar crystalline modules of minimum **200** Wp and above wattage. Module capacity less than minimum **200** watts should not be accepted

c) Protective devices against surges at the PV module shall be provided. Low voltage drop bypass diodes shall be provided.

d) PV modules must be tested and approved by one of the IEC authorized test centers.

e) The module frame shall be made of corrosion resistant materials, preferably having anodized aluminum.

f) The bidder shall carefully design & accommodate requisite numbers of the modules to achieve the rated power in his bid.

g) Other general requirement for the PV modules and sub systems shall be the following:

- I. The rated output power of any supplied module can have tolerance of +/-3%.
- II. The peak-power point voltage and the peak-power point current of any supplied module and/or any module string (series connected modules) shall not vary by more than 2 (two) per cent from the respective arithmetic means for all modules and/or for all module strings, as the case may be.
- III. The module shall be provided with a junction box with either provision of external screw terminal connection or sealed type and with arrangement for provision of by-pass diode. The box shall have hinged, weather proof lid with captive screws and cable gland entry points or may be of sealed type and IP-65 rated.
- IV. I-V curves at STC should be provided by bidder.

1.1.3. Modules deployed must use a RF identification tag. The following information must be mentioned in the RFID used on each modules (This can be inside or outside the laminate, but must be able to withstand harsh environmental conditions).

- a) Name of the manufacturer of the PV module
- b) Name of the manufacturer of Solar Cells.
- c) Month & year of the manufacture (separate for solar cells and modules)
- d) Country of origin (separately for solar cells and module)
- e) I-V curve for the module Wattage,  $I_m$ ,  $V_m$  and FF for the module
- f) Unique Serial No and Model No of the module
- g) Date and year of obtaining IEC PV module qualification certificate.
- h) Name of the test lab issuing IEC certificate.
- i) Other relevant information on traceability of solar cells and module as per ISO 9001 and ISO 14001

**1.1.4. Warranties:**

a) **Material Warranty:**

- i. Material Warranty is defined as: 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 sale to the original customer ("Customer")
- ii. Defects and/or failures due to manufacturing
- iii. Defects and/or failures due to quality of materials
- iv. Non conformity 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

**b) Performance Warranty:**

- i. The predicted electrical degradation of power generated not exceeding 20% of the minimum rated power over the 25 year period and not more than 10% after ten years period of the full rated original output.

**2. ARRAY STRUCTURE**

- a) Hot dip galvanized MS mounting structures shall be used for mounting the modules/ panels/arrays. Each structure should have angle of inclination as per the site conditions to take maximum insolation. However to accommodate more capacity the angle inclination may be reduced until the plant meets the specified performance ratio requirements.
- b) 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 in Gujarat (150 km/hr). It may be ensured that the design has been certified by a recognized Lab/ Institution in this regard. Suitable fastening arrangement such as grouting and calming should be provided to secure the installation against the specific wind speed.
- c) The mounting structure steel shall be as per latest IS 2062: 1992 and galvanization of the mounting structure shall be in compliance of latest IS4759, material thickness should be minimum 2.5 mm.
- d) Structural material shall be corrosion resistant and electrolytically compatible with the materials used in the module frame, its fasteners, nuts and bolts. Aluminium structures also can be used which can withstand the wind speed of respective wind zone. Necessary protection towards rusting need to be provided either by coating or anodization.
- e) The fasteners used should be made up of stainless steel. The structures shall be designed to allow easy replacement of any module. The array structure shall be so designed that it will occupy minimum space without sacrificing the output from the SPV panels
- f) Regarding civil structures the bidder need to take care of the load bearing capacity of the roof and need arrange suitable structures based on the quality of roof.
- g) The total load of the structure (when installed with PV modules) on the terrace should be less than **60 kg/m<sup>2</sup>**.

h) The minimum clearance of the structure from the roof level should be **300 mm**.

### **3. JUNCTION BOXES (JBs)**

a) The junction boxes are to be provided in the PV array for termination of connecting cables. The J. 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.

b) Copper bus bars/terminal blocks housed in the junction box with suitable termination threads conforming to IP65 standard and IEC 62208 Hinged door with EPDM rubber gasket to prevent water entry. Single /double compression cable glands. Provision of earthings. It should be placed at **5 feet** height or above for ease of accessibility.

c) Each Junction Box shall have High quality Suitable capacity Metal Oxide Varistors (MOVs) / SPDs, suitable Reverse Blocking Diodes. The Junction Boxes shall have suitable arrangement monitoring and disconnection for each of the groups.

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

### **4. DC DISTRIBUTION BOARD:**

a) DC Distribution panel to receive the DC output from the array field.

b) DC DPBs shall have sheet from enclosure of dust & vermin proof conform to IP 65 protection. The bus bars are made of copper of desired size. Suitable capacity MCBs/MCCB shall be provided for controlling the DC power output to the PCU along with necessary surge arrestors.

### **5. AC DISTRIBUTION PANEL BOARD:**

a) AC Distribution Panel Board (DPB) shall control the AC power from PCU/inverter, and should have necessary surge arrestors. 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 IEC60947, part I, II and III/ IS60947 part I, II and III.

c) The changeover switches, cabling work should be undertaken by the bidder 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 three phase / single phase, 415 or 230 volts, 50 Hz

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 IP54 or better. All outdoor panels will have protection of IP65 or better.

g) Should conform to Indian Electricity Act and rules (till last amendment).



h) All the 415 AC or 230 volts devices / equipment like bus support insulators, circuit breakers, SPDs, VTs etc., mounted inside the switchgear shall be suitable for continuous operation and satisfactory performance under the following supply conditions

Variation in supply voltage : +/- 10 %

Variation in supply frequency : +/- 3 Hz

#### 6. PCU/ARRAY SIZE RATIO:

a) The combined wattage of all inverters should not be less than rated capacity of power plant under STC.

b) Maximum power point tracker shall be integrated in the PCU/inverter to maximize energy drawn from the array.

#### 7. PCU/ Inverter:

As SPV array produce direct current electricity, it is necessary to convert this direct current into alternating current and adjust the voltage levels to match the grid voltage. Conversion shall be achieved using an electronic Inverter and the associated control and protection devices. All these components of the system are termed the "Power Conditioning Unit (PCU)". In addition, the PCU shall also house MPPT (Maximum Power Point Tracker), an interface between Solar PV array & the Inverter, to the power conditioning unit. Inverter output should be compatible with the grid frequency. Typical technical features of the inverter shall be as follows:

- Switching devices : IGBT/MOSFET
- Control : Microprocessor /DSP
- Nominal AC output voltage and frequency : 415V, 3 Phase, 50 Hz(In case single phase inverters are offered, suitable arrangement for balancing the phases must be made.) or Single phase as per consumer requirements.
- Output frequency : 50 Hz
- Grid Frequency Synchronization range : + 3 Hz or more
- Ambient temperature considered : -20° C to 50° C
- Humidity : 95 % Non-condensing
- Protection of Enclosure : IP-20(Minimum) for indoor.  
: IP-65(Minimum) for outdoor.
- Grid Frequency Tolerance range : + 3 or more
- Grid Voltage tolerance : - 20% & + 15 %
- No-load losses : Less than 1% of rated power
- Inverter efficiency(minimum): >95%
- THD: < 3%
- PF : > 0.9

- a) Three phase/ single phase PCU/ inverter shall be used with each power plant system.
- b) PCU/inverter shall be capable of complete automatic operation including wake-up, synchronization & shutdown.
- c) The output of power factor of PCU inverter is suitable for all voltage ranges or sink of reactive power, inverter should have internal protection arrangement against any sustainable fault in feeder line and against the lightning on feeder.
- d) Built-in meter and data logger to monitor plant performance through external computer shall be provided.
- e) The power conditioning units / inverters should comply with applicable IEC/equivalent BIS standard for efficiency measurements and environmental tests as per standard codes IEC 61683/IS 61683 and IEC 60068-2(1,2,14,30) /Equivalent BIS Std.
- f) The charge controller (if any) / MPPT units environmental testing should qualify IEC 60068-2(1, 2, 14, 30)/Equivalent BIS std. The junction boxes/enclosures should be IP 65(for outdoor)/ IP 54 (indoor) and as per IEC 529 specifications.
- g) The PCU/ inverters should be tested from the MNRE approved test centres /NABL /BIS /IEC accredited testing- calibration laboratories. In case of imported power conditioning units, these should be approved by international test houses.

#### **8. INTEGRATION OF PV POWER WITH GRID:**

The output power from SPV would be fed to the inverters which converts DC produced by SPV array to AC and feeds it into the main electricity grid after synchronization. In case of grid failure, or low or high voltage, solar PV system shall be out of synchronization and shall be disconnected from the grid. Once the grid comes into service PV system shall again be synchronized with grid supply and load requirement would be met to the extent of availability of power. 4 pole isolation of inverter output with respect to the grid power connection need to be provided, as per regulation.

#### **9. DATA ACQUISITION SYSTEM / PLANT MONITORING**

- i. Data Acquisition System shall be provided for each of the solar PV plant.
- ii. Remote Monitoring and data acquisition through Remote Monitoring System software at the owner /GEDA location with latest software/hardware configuration and service connectivity for online / real time data monitoring/control complete to be supplied and operation and maintenance/control to be ensured by the CP. Provision for interfacing these data on GEDA server and portal in future shall be kept.

#### **10. METERING:**

- a) The bi-directional electronic energy meter (0.5 S class) shall be installed for the measurement of import/Export of energy as per guidance of DISCOM .

c) The bidder must take approval/NOC from the Concerned DISCOM for the connectivity, technical feasibility, and synchronization of SPV plant with distribution network and submit the same to GEDA before commissioning of SPV plant.

d) Reverse power relay shall be provided by bidder (if necessary), as per the local DISCOM requirement.

**11. POWER CONSUMPTION:**

a) Regarding the generated power consumption, priority need to give for internal consumption first and thereafter any excess power can be exported to grid at APPC.

**12. PROTECTIONS**

The system should be provided with all necessary protections like earthing, Lightning, and grid islanding as follows:

**12.1. LIGHTNING PROTECTION**

The SPV power plants shall be provided with lightning & over voltage protection. The main aim in this protection shall be to reduce the over voltage 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 The entire space occupying the SPV array shall be suitably protected against Lightning by deploying required number of Lightning Arrestors. Lightning protection should be provided as per IEC62305 standard. The protection against induced high-voltages shall be provided by the use of metal oxide varistors (MOVs) and suitable earthing such that induced transients find an alternate route to earth.

**12.2. SURGE PROTECTION**

Internal surge protection shall consist of three MOV type surge-arrestors connected from +ve and -ve terminals to earth (via Y arrangement)

**12.3. EARTHING PROTECTION**

i. Each array structure of the PV yard should be grounded/ earthed properly as per IS:3043-1987. In addition the lightning arrester/masts should also be earthed inside the array field.

ii. Earth resistance shall not be more than 5 ohms. It shall be ensured that all the earthing points are bonded together to make them at the same potential.

**12.4. GRID ISLANDING:**

i. 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 immediately. 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.

ii. A manual disconnect 4pole isolation switch (RCCB) beside 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.

### 13. CABLES

Cables of appropriate size to be used in the system shall have the following characteristics:

i. Shall meet IEC 60227/IS 694, IEC 60502/IS1554 standards

ii. Temp. Range:  $-10^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$ .

iii. Voltage rating 660/1000V

iv. Excellent resistance to heat, cold, water, oil, abrasion, UV radiation

v. Flexible

vi. Sizes of cables between array interconnections, array to junction boxes, junction boxes to Inverter etc. shall be so selected to keep the voltage drop (power loss) of the entire solar system to the minimum. The cables (as per IS) should be insulated with a special grade PVC compound formulated for outdoor use.

vii. Cable Routing/ Marking: 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 easily identified.

viii. The Cable should be so selected that it should be compatible up to the life of the solar PV panels i.e. 25 years.

ix. The ratings given are approximate. All the cables required for the plant are to be provided by the bidder. Any change in cabling sizes if desired by the bidder/approved after citing appropriate reasons.

x. Multi Strand, Annealed high conductivity copper conductor PVC type 'A' pressure extruded insulation or XLPE insulation. Overall PVC/XLPE insulation for UV protection Armoured cable for underground laying. All cable trays including covers to be provided. All cables conform to latest edition of IEC/equivalent BIS Standards as specified below: BoS item / component Standard Description Standard Number  
Cables General Test and Measuring Methods, PVC/XLPE insulated cables for working Voltage up to and including 1100 V,UV resistant for outdoor installation IS /IEC 69947.

xi. The size of each type of DC cable selected shall be based on minimum voltage drop however; the maximum drop shall be limited to 1%.

xii. 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 %.

### 14. CONNECTIVITY

The maximum capacity for interconnection with the grid at a specific voltage level shall be as specified in the GERC regulation for Grid connectivity and norms of DISCOM and amended from time to time.

**15. DRAWINGS & MANUALS:**

- i. Two sets of Engineering, electrical drawings and Installation and O&M manuals are to be supplied. Bidders shall provide complete technical datasheets for each equipment giving details of the specifications along with make/makes in their bid along with basic design of the power plant and power evacuation, synchronization along with protection equipment.
- ii. Approved ISI and reputed makes for equipment be used.

**16. SOLAR PV SYSTEM ON THE ROOFTOP FOR MEETING THE ANNUAL ENERGY REQUIREMENT**

The Solar PV system on the rooftop of the selected buildings will be installed for meeting the annual energy requirements of PV capacity permissible by Discom as per regulation issued by GERC.

**17. SAFETY MEASURES:**

The bidder shall take entire responsibility for electrical safety of the installation(s) including connectivity with the grid and follow all the safety rules & regulations applicable as per Electricity Act, 2003 and CEA guidelines etc.

**Annexure - A**

**10.0 SUPPLYING CAPACITY**

<b>Name of the CP</b>	
<b>Address of the Manufacturing Facility</b>	

<b>Sr. No.</b>	<b>Item</b>	<b>Capacity of systems committed to be supplied, installed and commissioned in the State before June , 30 , 2017. (in kW)</b>
<b>1</b>	<b>Rooftop Solar PV System 1 kW to 2 kW</b>	

**Name of the Authorized Signatory:**

**Signature of the Authorized Signatory:**

**Seal of the Company :**

(Sign. & Seal of the CP)

**Annexure 1: GENERAL INFORMATION ABOUT THE BIDDERS**

1.	<b>Name of the Company</b>	
2.	<b>Postal Address</b>	
3.	<b>Telephone nos.</b> <b>Fax no.</b>	
4.	<b>e-mail address and URL</b>	
5.	<b>Type of Company</b> Attach Proof of Company Registration alongwith a copy of the Partnership Deed/ Article of Association and Memorandum of Understanding	Proprietorship/ Partnership/ Private Limited/ Public Limited  (Pl. tick appropriately)
6.	Name and designation of the representative of the Bidders to whom all reference shall be made to expedite technical co-ordination.	
7.	Details of workmen on muster roll Skilled/ unskilled. <b>(attach copy of muster roll)</b>	
8.	<b>Has the company/firm to pay arrear of income tax? If yes upto what amount.</b>	
9.	Has any Govt. Dept./ Undertaking ever debarred the company/ firm from executing any work?	

**It is certified that the information provided above is true to the best of my knowledge and belief. If any information found to be concealed, suppressed or incorrect by GEDA at later date, our EoI shall be liable to rejected and our company debarred from executing any business with GEDA.**

Date:

Sign. and Stamp of the CP

(Sign. &amp; Seal of the CP)

**ANNEXURE – 2**

**DECLARATION**

(strike off whichever is not applicable)

This is to declare that Mr/Ms. \_\_\_\_\_,  
employee of GEDA at \_\_\_\_\_(place), is related to our  
\_\_\_\_\_(designation &  
name).

OR

This is to declare that none of the Proprietors/ Partners/ Directors are having any relatives employed or working with Gujarat Energy Development Agency at any of its offices or its parent Department i.e. Energy & Petrochemicals Dept., Govt. of Gujarat.

Date :

**Sign. & Stamp of the CP**

(Sign. & Seal of the CP)



**Annexure - 3**

**Marketing Network addresses**

<b>Name &amp; Address</b>	<b>Contact person, mobile number, fax no., email</b>

(Sign. & Seal of the CP)

**MEMORANDUM OF UNDERSTANDING (format)**

(to be signed in 3 copies, one for User Agency, one for Supplier and one for GEDA)

This memorandum of understanding is made today on \_\_\_\_\_ between M/s.  
\_\_\_\_\_  
\_\_\_\_\_ (address)  
\_\_\_\_\_ (**Supplier**)  
and \_\_\_\_\_  
(hereafter referred as "**User Agency**") for installation of Grid connected Solar PV Rooftop System (GCRT) under SHS subsidy scheme 2016-2017 of MNRE/ GEDA.

It has been agreed upon by and between the said parties as under:

1. User Agency has registered the project under Gujarat Solar Power Policy – 2015 with registration number \_\_\_\_\_ for installation of GCRT under MNRE/ GEDA's subsidy scheme through the above authorized Supplier of GEDA.
2. A Subsidy of Rs. 10,000/- per kW would be disbursed by GEDA after successful installation and commissioning of Rooftop Solar System by private **Residential Consumers** with maximum limit of Subsidy of Rs. 20,000/- per consumer. The subsidy would be limited to installation of 2 kW Rooftop Solar System only. The total capacity of the rooftop Power plant could be higher subject to ceiling of 50% of contracted load as per the Gujarat Solar Power Policy 2015.
3. GCRT installed under GEDA subsidy scheme will not be transferred/ sell/ disposed without prior approval of GEDA for a period of five years.
4. GEDA will not be responsible or party for any dispute with the manufacturer selected by the user agency.
5. User Agency shall follow the instructions given by Supplier for proper function of the system and its upkeep; and shall inform the Supplier immediately for its non – functioning. Supplier shall provide necessary service for the breakdown maintenance of the system for the **period of 5 years**.

**This memorandum of understanding commencing from the date of signing of this Memorandum of Understanding will be valid for the period of five years.**

In witness whereof these parties have set their hands in token of affirmation and acceptance of the terms and conditions herein above written and mentioned.

Signature on behalf of user agency:  
stamp  
Date:

On behalf of Supplier with rubber

## **PART - II**

### **FINANCIAL OFFER**

- Rates discovered are FOR destination prices inclusive of taxes, levies, duties, packing, forwarding, freight, insurance, loading unloading, supply, installation, commissioning, and any/ all charges for successful Supply & Installation of the systems at any locations in the State of Gujarat and all expenses of marketing, commissions etc
- The rates discovered are to be inclusive of Service Tax, Work Contract Tax, VAT or any other taxes applicable to such work. Any escalation in such taxes/ levies during the tenure of the contract/ order, will not be paid by GEDA and Bidder are advised to take in to consideration any such escalations in the prevailing taxes/levies/duties. However, bidder can avail Concessional Custom Duty and Excise Duty Exemption as per MNRE notification & guidelines on behalf of GEDA in a lot of 500 kW aggregate capacity of Rooftop Solar PV System.
- The rates discovered shall be exclusive of GEDA Registration fee, DISCOM connectivity fees.
- In no circumstances, escalation in the prices will be entertained.
- You agree to completely adhere to the terms & condition and technical specifications as per the enclosed proforma of schedule of rates with discovered price.
- No Road Permit shall be given by GEDA to the CP regarding transportation of materials to site.

**SCHEDULE OF RATES**

<b>Name and address of CP</b>	
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<b>S.No.</b>	<b>Item</b>	<b>Discovered Rate per Watt in figure (Rs./ Wp)</b>	<b>Discovered Rate per Watt in words (Rs./ Wp)</b>
1	Rooftop Solar PV System 1 kW to 2 kW	69/-	Sixty nine only

**Name of the Authorized Signatory:**

**Signature of the Authorized Signatory:**

**Seal of the Company :**

(Sign. & Seal of the CP)