

**Tender for Supply and Installation, Commissioning
with 5-year CMC of Grid Connected Solar Photovoltaic
Systems in the govt. Building of M.S. Electrical sub
division, Ahmedabad.**

**Executive Engineer,
Ahmedabad electrical division No. 1,
R & B Deptt., Ahmedabad.**

TENDER AT A GLANCE

Tender for installation of Grid Connected Solar Photovoltaic System on the govt. Building of M.S. Electrical sub division Building, Ahmedabad. The salient features and key provisions of the Tender:

In view of the requirement of the Government Building, Ahmedabad for installation of Grid tied Solar Photovoltaic rooftop system, tenders are invited from the reputed and experienced vendors for design, supply, installation, commissioning and 5 years' comprehensive maintenance contract (CMC).

The assorted rating of the solar rooftop system for which the rates shall be discovered are as follows:

>25 to 50 kW. (Project capacity will be considered in AC KW. Payment to Bidder will be done on AC KW Capacity Registered, DC KW Capacity Installed, Inverter Installed, whichever will be less.)

The broad specifications of the system (Detailed Specifications are given in the Tender elsewhere) shall be as follows:

- 1) **Solar PV Modules:** - Bi-Facial/Poly Crystalline /Mono Crystalline/P type or N-type Topcon solar module not less than 500 Wp each and having valid IEC certificate. (Certificate to be submitted on shortlisting of successful Tenders). **The PV Cell and the modules shall be of INDIAN MAKE.** Necessary documents in this regard must be provided to R & B Department.
- 2)

The bidder shall be required to submit the Self declaration, regarding the Modules and Solar cells used under this supply are “**Made in India**”, from the concerned manufacturer of Solar Modules, before commissioning of the System. Such firm and Shortlisted bidder, those violate the requirement of Indian Make Solar Cell and Module shall be put under the black list, and or stop deal list as may be decided by the Executive Engineer, R & B Deptt.

Violation of norms of Domestic Content Requirement (DCR) Under Solar PV projects will lead to penalties and action as mentioned in office memorandum of MNRE GOI vide letter no. 283/2018-GRID SOLAR dated 20th February, 2018.

The ALMM list is published by the MNRE vide Notification No. 283/54/2018-Grid Solar- Part (1) Dated 30-12-2021 and thereafter time to time updated ALMM list by MNRE. The Model and Manufactures of the Module and Cell shall be from the ALMM only used in the SPV System in this project.

- 3) **Inverter:** - IEC certified inverter with in-built anti-islanding facility of Rated capacity equal to Project registered capacity

- 4) **Mounting structure:** - The mounting (Rectangular pipe / square pipe / circular pipe) with requisite cross bars, nuts and bolts, etc. shall be pre-galvanized or galvanized. The Rectangular / square /circular hollow pipe section used for the structure should have a minimum thickness of 2.0 mm. other than above, the material thickness should be minimum 2.5 mm. A certificate of a structural engineer certifying the strength and stability of the mounting structure to withstand the weight and wind speed of 150 km/hour shall be submitted by the vendors. The ground clearance of the bottom most edge of solar panel shall not be less than 300 mm to 1200 mm as per site requirement.
- a. Column –The minimum section (thickness) should be 60MM*40MM
 - b. Rafter – The minimum section (thickness) should be 60MM*40MM
 - c. Purlin – The minimum section (thickness) should be 40MM * 40MM
- 5) AC, DC cable shall be of ISI mark and reputed make.
- 6) Lightning arrestor shall be provided for each of the Solar Rooftop installations covering entire solar photovoltaic modules. It shall be of ISI mark and reputed make. Each 50 Kw system shall be provided separate Lightning arrestor.
- 7) The system cost shall be inclusive of supply of solar modules, invertors, mounting structure, AC DC cables in **UPVC** conduit as per requirement on location (Rate include supply of minimum AC Cable Length Up to 50 Meter/Building), AC - DB, DC – DB, earthing, LA, Bidirectional meter, Solar AC Meter and its installation. If AC cable to be lay outside of the building, then only excess cable charges above 50-meter length will be payable on case-to-case basis.

In Case of HT Connection, as per DISCOM Norms, Charges for HT Bidirectional Meter & Other associated electrical component (i.e. Modem, TTB, CT Coils, Ferrules etc.) paid by Bidder **will be reimbursed as actual** (Standard Market Rates). No any differential/additional Charges for LT Bidirectional meter will be reimbursed.

The rate quoted per kW for the project should be Exclusive of all taxes. No rate revision under this tender will be allowed in any circumstances.

- 8) The scope of regular cleaning of the modules for five years shall also be in the scope of Bidder. The arrangement of required water etc. for regular cleaning of the modules shall be in the scope of the Bidder.

9) The Tender fee, EMD, Performance Security and Add. Performance security: As per Attached Standard Bid Document (SBD)

* EMD and Performance security and Additional Performance securities are accepted in FDR Form only.

No Bidders shall be exempted from payment of Tender fee and EMD, if any Bidders not fulfilled the condition shall be outright rejected.

10) Payment terms: As Per Attached SBD

Note: Performance Security shall be released after successfully completion of five years comprehensive maintenance period.

- 11) Time Limit :-** The project completion period shall be 120 days which includes first 60 days for feasibility+Drawing from the date of placement of order, completion should mean, feasibility verification of site, registration of project, TFR generation and payment to DISCOM (estimate generation and payment to DISCOM), the Single Line Diagram (SLD) drawing, submission and approval to CEI, and application submission remaining 60 day includes for approval of CEI for charging of system, Signing of PPA and commissioning of the system, meaning commencement of injection of power to the grid. R & B Deptt. reserve the rights to cancel/reduce /transfer the work order capacity for the sites whose any/all aforesaid stage not cleared within approved time limit. The delay if any in the specific completion period in any activity shall be considered/dealt with on the basis of the certified documentary evidence of the Single Line Diagram (SLD) drawing, submission and approval to CEI, estimate generation and payment to DISCOM and application submission and approval of CEI for charging of system. The date of completion/commissioning of the project as prescribed in the tender will be considered / calculated from the date of letter of allotment of site to contractor by R & B Deptt. Total work order period for the feasibility evaluation, allotment of site, installation and commissioning will no case exceed 120 days (120 days includes 60 days for feasibility period, TFR generation and payment of TFR, 60 days for commissioning work with all other approval).

- 12) Scope of Maintenance work:** It shall be the responsibility of the bidder to clean the modules throughout the five-year CMC period to ensure the Performance Ratio is more than 70% on

Quarterly basis to be measured at inverter side, until the end of fifth year, inclusive of degradation, if any, of the module and /or inverter. The bidder shall ensure shadow free **installation and easy access to the system monitoring, repairs/replacement of system component etc.**

- It shall be mandatory for the vendor to visit the project site on quarterly basis after the successfully commissioning of system and submit a Quarterly Maintenance & Servicing Reports to R & B Deptt. duly signed and sealed by the beneficiary/Govt. office for the 5 years Comprehensive Maintenance Contract (CMC) period in prescribed format (including the electricity generation record of inverter, the solar meter and Bi-directional meter reading.) The capacity utilization factor (CUF) of the solar power plant shall not be less than 19.50% on annual basis, during the five-year CMC period. The capacity utilization factor (CUF) shall be maintained at 19.50% and necessary efforts shall be made to achieve it by the bidder. Out of 5 years CMC period, vendor have to achieve 19.50% CUF **in any three years.**

- The Performance Ratio of Grid Connected Systems shall be more than 70%, and necessary efforts shall be made to achieve it by the bidder. In case the system fails to attain the required Performance Ratio, the system shall be deemed to non-performing and R & B Deptt. may invoke up to 100% Performance Bank Guarantees (PBG) as decided by Executive Engineer, R & B Deptt..

12) Conditional Tender or Tender with deviations shall be outright rejected at discretion of Executive Engineer, R & B Deptt.

GUIDELINES AND ELIGIBILITY CRITERIA FOR BIDDERS

1. **SCOPE OF WORK:** The work is to be carried out on 'Turn Key Basis' which includes survey, design, estimate generation, estimate payment, supply of SPV systems with all accessories and equipment, metering, installation, testing, commissioning and maintenance services for 5 years, of the R & B Deptt.'s allotted sites with free replacement warranty on spare parts against manufacturing defects for five years. It also includes obtaining estimate generation, estimate payment, and other permission of concern DISCOM and Chief Electrical Inspector (CEI) approvals. i.e.
 - a) Survey of allotted, physical and technical verification of sites for feasibility, undertaking and ownership documents of beneficiary, other necessary Documents require for registration of the project on GEDA. Online portal.
 - b) Preparation of Detailed Project Report (DPR) of the proposed Proposal of SPV Power Plant.
 - c) Registration of the Project on GEDA. online portal with necessary fees, Obtaining No objection certificate, net metering connectivity agreements from concerned DISCOM for grid connectivity and CEI's approval and payment of CEI Inspection Chagres, Connectivity charges, Meter charges, Meter testing and SMC box charges etc. EXCEPT charges for Strengthening of the DISCOM Network, if required.
The payment of the Registration Fees of GEDA shall be in the scope of the BIDDER, thus the cost to be quoted by the bidder shall be inclusive of the GEDA Registration fees. (Rs. 1000/- + GST per application)
 - d) The work covers Design, supply, installation, commissioning and comprehensive maintenance for FIVE years, including grid connectivity charges, meter charges etc.
 - e) Design, supply, civil work, erection, testing and commissioning of SPV grid connected Power Plant as per schedule given in the work order.
 - f) Installation of solar meter and bi-directional meters along with second line of protection in the system such as SPD etc.
 - g) Installation of Remote Monitoring facility along with necessary dongle etc. for the period of 5 years.
 - h) The scope of the work covers cleaning and washing of the Solar Photovoltaic Modules regularly to ensure that (i)annual Capacity Utilization Factor (CUF) of the system is 19.5% (ii) the Performance Ratio of the system is more than 70% in each quarter during the five years CMC Period.
 - i) Insurance: The bidder in its own interest shall be responsible to take an insurance policy, for all the materials to cover all risks including all calamities and liabilities for supply, storage of materials at site, installation, testing, installation of solar, Bi-directional meter, commissioning and including 5-year CMC period of the systems.

2. Eligibility Criteria: As per attached separate sheet

3. It is mandatory for all bidders to submit their PRICE-BID only through online (e-tendering). Price Bid submitted in physical form shall not be considered for its opening and only online submitted Price Bid will be considered for evaluation. Bidders to note that Price of those bidders shall be opened (Online/e-tendering) who is found technically qualified and is found reasonably responsive to R & B Deptt.'s Tender terms and conditions and Scope of Works.

4. All the Bidders shall fulfil the pre-qualification criteria as stipulated.

5. R & B Deptt. reserve the rights to accept/reject any or all Bids without assigning any reasons thereof. Bidders are requested to be in touch with above-mentioned websites till opening of the Price Bid to know the latest status.

6. SPECIFICATIONS: The specifications of SPV systems, for which Tenders are invited, are annexed. The Test Report(s) of each of the components/ systems mentioned shall be uploaded/ attached with the Tender.

7. LOI: Letter of Intent (LOI) shall be issued to the shortlisted Bidder and the security deposit amount to be deposited by him with R & B Deptt. Shortlisted Bidder will be required to deposit the requisite security deposit within one week of issuance of Letter of Intent, failing which the letter of intent will stand as cancelled. The order will be issued to the shortlisted Bidder only after receipt of requisite security deposit.

8. PERFORMANCE SECURITY: Performance Security and Additional Performance security as per attached SBD

9. The Bidder shall arrange to provide to each beneficiary, a SPV instruction manual. The Bidders shall also arrange to impart training about routine maintenance procedure. **Copy of the same to be submitted to R & B Deptt. with the physical documents.**

10. INSPECTION OF MATERIAL: The Bidder will offer complete Solar PV Systems for inspection at their works by R & B Deptt. or its authorized quality inspection agency before dispatch of material to site. Inspection can also be offered at one place in India (main distributor's place), where equivalent inspection facilities are available. The call for Pre-Dispatch Inspection for complete material shall include providing I-V curves countersigned by manufacturer of panels. R & B Deptt. may carry out random testing of SPV systems at Bidder's factory for various parameters as per the specifications laid by R & B Deptt. Visual inspection shall be carried for 100% of SPV systems. Bidders will intimate to R & B Deptt. in writing in advance for such inspections. R & B Deptt. may inspect the material at site, if during the inspection the percentage of rejections exceeds 10% then the whole lot would be rejected. The rejected material is to be replaced with new material as per the specifications. The systems shall be offered for inspection again after necessary rectification. Expenses for such inspection and re-inspection shall be borne by the Bidders.

11. The rates quoted by the Bidders will be Exclusive of GST or any other taxes

applicable for such work. Any escalation in such taxes/ levies during the tenure of the offer/ order will not be paid by R & B Deptt. and Bidders are advised to take in to consideration any such escalations in the prevailing taxes/levies/duties.

Bidders are required to quote rates inclusive of Comprehensive Maintenance Contact (CMC) for the period of five years for the system which include module cleaning. The rates quoted shall be inclusive of charges for providing Routine Maintenance services at the beneficiary's end as per site requirements to ensure smooth and satisfactory performance of the system. Replacement of any components of the system is included in the scope of work of CMC. As per the format given in the bid document quarterly report shall be prepared and submitted to R & B Deptt. after providing necessary services. The capacity utilization factor (CUF) of the solar power plant shall not be less than 19.5% on annual basis, during the five-year CMC period. The capacity utilization factor (CUF) shall be maintained at 19.5% and necessary efforts shall be made to achieve it by the bidder. Out of 5 years CMC period vendor has to achieve 19.5% CUF in any three years.

The PR ratio of the solar power plant shall not be less than 70 % on quarterly basis, during the five-year CMC period. The PR ratio shall be strictly maintained at more than 70% and necessary efforts shall be made to achieve it by the bidder. Out of 5 years CMC period if vendor fails to achieve more than 70% PR Ratio, up to 100% PBG will be forfeited as decided by Executive Engineer, Ahmedabad electrical division No. 1, R & B Deptt., Ahmedabad the calculation of PR RATIO shall be on the basis of the generation recorded by the inverter at AC side.

12. After the five years CMC period of system the R & B Deptt. may extend the O & M period as per mutual consent with the supplier.

13. Training of representative of the beneficiary on the aspect of primary trouble shooting and Do's & Don'ts of the SPV systems, including general operation and maintenance, including lodging complaints & primary reporting.

Technical Inspection Report for Solar PV Rooftop Project**(Submitted by TPI/Agency)****Report No .****Date of Inspection:****Name of EA :****Basic System Information**

A.	R & B Deptt. Registration Number / Consumer No.	:	
B.	Name of Beneficiary Organization	:	
C.	Contact Person	:	
D.	Address	:	
E.	District	:	

A. PV Module and Inverter Specification :

Sr.	Equipment	Rated Capacity of Solar Module in Watt(peak) More than 500 Wp	Make of Solar PV Module	No. of Modules	Type PV of Modules (Crystalline)	Model No.
1	PV Module					

B. Are the modules of Indian Make: YES / NO**If No, Please Provide to requisite details with supporting notes/documents.**

Sr.	Equipment	Nominal / Rated A.C. Output of Invertor in kilo Watt. kW/KVA	Make of Inverter	No. of Inverters	Type of Inverter (Single/Thre e phase)	Model No.
2	Inverter					

Total Capacity of Solar PV System in kW DC:

Total Rated output of Inverters in kW/KVA AC:

Strings	Polarity (OK/ NOTOK)	V (Volts)	I (Amps)	Power (Watt)	Remarks
String-1					
String-2					
String-3					

Details of Solar PV modules Installed

Sr. No.	Observation		Tick either of the one	Remarks
1.	PV Module complying IEC certificate	IEC61215/IS14286 IEC61853-I, IS 16170-I IEC 61730 IEC 61701	OK Not OK	
2.	Are any Module broken/damaged		YES /NO	
3.	Physical Presence of snail, trail, micro cracks, white patch, browning		YES / NO	
4.	Module Earthing Properly done?		Yes/ No	
5.	Module Protection	Min. IP 65	OK Not OK	
6.	Module Interconnection cable connectors are protected against environment		OK Not OK	
7.	PV module are neat and clean		OK Not OK	
8.	PV Modules electrical connections are tight and secure		OK Not OK	

Details of AC Cable between Invertor & Meter supplied: Length in Meter _____

Cable Type & Size _____ Aluminum or Copper _____

Weather: ☐ Clear Sky ☐ Cloudy ☐ Hazy ☐ Rainy

Notes:

Details of Module Mounting Structure (MMS)

Sr.	Observation		Please Mark/ Enter Relevant Block		Remarks
1.	Structure Material	Pre-Galvanized /Hot Dip Galvanized Iron	OK	Not OK	
2.	Fasteners	Stainless Steel	OK	Not OK	
3.	Structure Steel Thickness hollow section/other than hollow section	Min 2.0 MM / Min. 2.5 MM	OK	Not OK	
4.	Structure Installed Properly		OK	Not OK	
5.	Minimum height of bottom edge of PV modules from roof level in meter			meter	
6.	Maximum height of PV modules from roof level in meter			meter	
7.	Structure grouting/ Foundation		OK	Not OK	

Any other observation, if any:

Details of DCDB

Sr.	Observation	Please Mark/ Enter Relevant Block		Remarks
1.	DCDB Installation	Outdoor		
		Indoor		
2.	Fuse/MCB/ MCCB Protection	OK	Not OK	
3.	Surge Protection device available	OK	Not OK	
4.	DCDB Installed and mounted Properly	OK	Not OK	
5.	Cables terminated properly through glands on gland plate	OK	Not OK	

Details of ACDB

Sr.	Observation	Please Mark/ Enter Relevant Block			Remarks
1.	ACDB Installation	Indoor	Outdoor		
2.	MCB/ MCCB/RCCB Protection	OK	Not OK		
3.	Surge Protection device available	Yes	No		
4.	No Volt Relay (NVR) for 10 kW above	Yes	No	N.A.	
5.	ACDB Installed Properly	OK	Not OK		
6.	Cables terminated properly through glands on gland plate	Yes	No		

Voltage Measurement

Phase to Phase Voltage	R-N	Y-N	B-N	Total

Time: _____AM or PM

Performance Ratio of the System

1.	Instantaneous AC Power in Watt at Inverter	:	
2.	Instantaneous Irradiance (Watt/m ²)	:	
3.	Module Area (m ²)	:	
4.	Total number of modules	:	
5.	Module Efficiency in %	:	
6.	Performance Ratio of the System (If PR is less than 70% than technical reason should be given)	:	

Calculation of Performance Ratio: *Formula* {Sr. 1/(Sr. 2x Sr. 3x Sr. 4)x Sr.No.5/100} x 100

Details of Inverter

1.	Inverter Serial No:			
2.	Inverter IP Protection			
3.	Inverter Installation		Outdoor Indoor	
4.	Automatic Operation Including Wake-up, Synchronization And Shut Down		OK Not OK	
5.	Marking Of Inverter Capacity, Rating, Technical Specification	IEC 61727, IEC 61730, IEC 61683, IEC 60068-II (1,2,14,30)/ Equivalent BIS standard	OK Not OK	
6.	Inverter Installed Properly		Yes No	
7.	Cables Terminated Properly (Crimping And Lugging)		Yes No	
8.	DC Disconnect Available		Yes No	
9.	Terminal Earthing Effectively Earthed		OK Not OK	

Details of Earthing provided

Earth Conductor Material : Copper Galvanized MS Aluminium

Total Nos.of Earthing : _____ Nos.

Earthing Conductor : As per IS 3043/IEEE80

Earthpit Construction : Chemical Charcoal-Salt

Lightning Arrester (LA) : Franklinrode ES

LightningArrester(IEC62305) : OK Not OK

LA height from Installation : _____ meter

Building	Earth Pit	Earth Strip Connection	
Building-1	Body Earthing Pit-1 ($R < 0.50\Omega$)	OK	Not OK
	Body Earthing Pit-2 ($R < 0.50\Omega$)	OK	Not OK
	Lightning Earthing Pit-1 ($R < 0.50\Omega$)	OK	Not OK
	Lightning Earthing Pit-2 ($R < 0.50\Omega$)	OK	Not OK

Details of Cables used

1.	Solar DC Cable	UV Protected	OK	Not OK	
2.	Solar DC Cable	Multi stranded Tinned Copper	OK	Not OK	
3.	Voltage Grade	600/ 1000 V	OK	Not OK	
4.	AC cable Insulation		PVC	XLPE	
5.	String Cable Size (mm ²)		1)	—	
6.	AC Cable Sizes (mm ²)		1) _____ 2) _____		
7.	AC Cable Length (Meter)		Total length: _____meter Length from Ground plinth to DISCOM Energy meter: _____meter		

Site Image 1: Solar PV Modules showing height of the installation from the roof: +

Upload

Site Image 2: Invertor, preferably with User or his representative:

+Upload

Observation and Conclusion:

Note:

It is certified the system is installed / not installed satisfactory and is found to be as per / not as per the specification of GEDA.

	Report Prepared by	Checked by
Name		
Signature		
Stamp of TPI / Agency		

----End of the document----

QUARTERLY MAINTENANCE & SERVICING REPORT FORMAT

(To be submitted on end of each quarter)

Date:

DETAILS OF SOLAR PHOTOVOLTAIC SYSTEM INSTALLED**1. Details of Beneficiary**

Name of Beneficiary: _____

Address: _____ Ta. _____ Dist. _____

Discom Consumer No.: _____

R & B Deptt. Registration No.: _____

2. Details of EPC Agency

1. Name of Agency:

2. Work Order No & Date.:

3. Solar System Capacity (KW):

4. Date of Commissioning :

5. Servicing period : From _____ to _____

3. TECHNICAL DETAILS

1. Module Capacity, Make and No of Module:

2. Inverter Capacity, Make and Sr no:

4. CHECK OF THE SYSTEM

1. Cleaning of dust from SPV panel :

2. Interconnection of modules, PCU etc. :

3. Fuse of distribution boxes, switches :

5. DIFFICULTIES IN OPERATION/ PROBLEM FACED BY USER, IF ANY:**6. DIAGNOSIS DETAILS/ REPAIR ACTION:****7. IS THE SYSTEM WORKING SATISFACTORILY: YES / NO.**

If 'NO', please give the reason & remedies.

8. GENERATION READING OF GRID CONNECETD SYSTEM ON THE DATE OF THE REPORT:**METER INSTALLATION DATE:** _____

Metering Point	Last quarter reading (kWh) Date: _____	Present quarter reading (kWh) Date: _____	Difference in kWh	Quarterly CUF (%)
Meter reading at Solar Meter (in kWh)				
Solar generation reading at Inverter (in kWh)				

Meter Reading of Bi-Directional Meter (Import and Export) (In KWh):

Formula for Quarterly Capacity Utilization Factor (CUF) = Energy measured (difference in kWh) / (90*24*installed capacity of the plant)

9. PERFORMANCE RATION OF GRID CONNECTED SYSTEM:

Calculation of Performance Ratio:

1.	Instantaneous AC Power in Watt at Inverter	:	
2.	Instantaneous Irradiance (Watt/m ²)	:	
3.	Module Area (m ²)	:	
4.	Total number of modules	:	
5.	Module Efficiency in %	:	
6.	Performance Ratio of the System (If PR is less than 70% than technical reason should be given)	:	

Calculation of Performance Ratio: *Formula* {Sr. 1/(Sr. 2x Sr. 3x Sr. 4)x Sr.No.5/100} x 100

User Name & Signature
Signature

Date: (with rubber stamp)

Technician's Name &

(with rubber stamp)

Note: At end of 5 year following Document will have to submit with last Quarterly Maintenance and Servicing Report (QMR)

1. Photograph of Solar Rooftop System: - Yes/ No
2. Instantaneous AC Power in Kilo Watt at Inverter (Kw): -
3. Photograph of Inverter Generation E –total (KWh)
4. Photograph of irradiation of solar system by pyrometer (Kw/m2)
5. Photograph of Solar Meter Generation (Kwh)
6. Photograph of Bi Directional Meter Import reading (Kwh)
7. Photograph of Bi Directional Meter Export reading (Kwh)
8. Latest electricity bill of beneficiary
9. Performance Satisfactorily letter duly signed and sealed by the beneficiary against 5 years CMC Completion of Solar Rooftop System

FORMAT FOR WARRANTY CARD TO BE SUPPLIED WITH EACH SOLAR PV SYSTEM

1. Name & Address of the Vendor
2. Name & Address of Beneficiary Agency
3. Date of Commissioning of the system
4. Solar Roof Top system capacity in kW.
5. Details of PV Module/s
Make of PV Module
Rating in Watts of each Module
Total numbers of modules installed
Serial No(s)
Warranty valid up to
6. Details of Invertor
Make of Invertor
Rated Output of Invertor, kW (AC)
Total number of Invertors
Serial No(s)
Warranty valid up to
7. Designation & Address of the person to be Contacted for claiming Warranty obligations.

We hereby provide aforesaid warranty and undertake to replace free of cost the PV MODULES, Invertor if found to be mal functioning due to manufacturing defect.

(Signature)
Name & Designation
Name & Address of the Bidders
(SEAL)

Place & Date:

(During the warranty period State Agencies/users reserves the right to cross check the performance of the systems with the minimum performance levels specified in the specifications).

To,
Executive Engineer,
Ahmedabad elect. Div-1,
Vastrapur, Ahmedabad.

Subject: Structural stability, sustainability against wind pressure and safety related aspects of mounting structure deployed in solar rooftops.

Sir,

<Name of the Company/Firm> (the "Company/Firm") is SUCCESSFUL BIDDER of R & B Deptt. for implementation of the solar roof tops programme in Government sector by the virtue of being technically qualified for solar roof top Tender floated by R & B Deptt. during year 2025- 26 (the "Tender"). I, the undersigned <Name>, <Designation>, the Owner of Company/Firm have also agreed to abide by the terms and conditions and the technical specifications of the solar roof top PV system provided in the Tender document.

In accordance with the provision of the Tender, the minimum ground clearance of the bottom most edge of solar panel from roof level has been specified as 300 mm to 1200mm. Further that the structure design shall be such that it withstands the wind speed of 150 kmph and that the thickness of the structure material shall not less than 2.0 mm in case of GI Rectangular / Square / Circular hollow Pipe section and other than above the material thickness should be minimum 2.5 mm as per tender terms and conditions.

I/we hereby declare that the module mounting structure and all its components including but not limited to fixing of the solar panels to the structure, welded joints, fasteners, zinc spray, grouting/fixing of the structure to the roof surface etc. installed by us at all the solar roof systems registered with R & B Deptt. under the Tender, have been designed to provide adequate stability to bear the load and to withstand the wind speed of 150 kmph. Further I/we certify that I/we have ascertained and vetted the design of the structure ourselves and by a Structural Engineer to ensure stability and safeness of each of the installation to sustain the wind pressure throughout the lifespan of the installation.

In this regard, we have also obtained the certificate of the Structural Engineer for the installation at <Name of Site> Capacity <KW> regarding the stability of the structure and its strength to sustain a wind speed of 150kmph. The copy of the certificates of the Structural Engineer is attached herewith.

I/we further undertake and assure you that the structural stability of the module mounting structure including all the components installed by us at above mentioned site is our responsibility throughout the life span of the solar rooftop PV system.

I/We also absolve R & B Deptt. of any such responsibility of the safety and the stability of the structure and the solar panels, whatsoever that may arise during the lifespan of the solar rooftop PV system.

Thanking you,

Yours faithfully,

Signature

Name

Designation

Stamp of the Company/Firm

Encl: Certificates of the Structural Engineer

(CONCERN FORM)

To WHOSOEVER IT MAY CONCERN

The undersigned, a Structural Engineer/ FIRM, registered with <Name of the registering/licensing authority> (registered with any of the Municipal Corporation/ Municipality, Urban Development Authority) and having valid License/Registration Number

<_____>. The undersigned has analyzed the design of the mounting structure of the solar roof top PV system and its fixing with i) the roof surface and ii) the solar panels, installed by M/s. <Name of the Vendor> at the address mentioned below.

Address of the Installation: <Name of the beneficiary>

<Address #1>

<Address #2>

<City>

<R & B Deptt. Registration Number>

Upon satisfying myself on the analysis of the design of the mounting structure of the solar roof top PV system and its fixing with i) the roof surface and ii) the solar panels, I hereby certify that the design of the mounting structure installed at the above-mentioned address meets the strength and stability of the mounting structure to withstand the wind speed of 150 kmph and is safe throughout its life span. The total load of the system is within the permissible load bearing capacity of the roof.

This Certificate is issued on the request of <Name of the Supplier of SPV System>.

Name of the Structural Engineer	:	
Signature of the Structural Engineer	:	
Stamp	:	
Date	:	

(Structure drawing along with the structure design, part drawing, assembly drawing duly signed and approved to be submitted for each site to be attached)

FINANCIAL BID GUIDELINES

Rates quoted by Bidder will be for destination prices inclusive of taxes excluding GST, levies, duties, packing, forwarding, freight, insurance, loading unloading, supply, installation, commissioning, connectivity charges, meter charges etc. and any/ all charges for successful Supply and Installation of the systems with charges of five-year CMC. The system cost shall be inclusive of supply of solar modules, invertors, mounting structure, AC DC cables in RPVC conduit as per requirement on location (Upto 50 Meter/Building), AC - DB, DC – DB, earthing, LA, Bidirectional meter, Solar AC Meter and its installation. In Case of HT Connection as per Discom Norms, Charges for HT Bidirectional Meter & Another associated electrical component paid by Bidder will be reimbursed as actual. No any differential additional Charges for LT Bidirectional meter will be reimbursed. The bidder has to include insurance charges, as a proof of evidence, bidder is required to submit the copy of insurance policy/document.

- The rates quoted by the Bidder will be exclusive of GST or any other taxes applicable to such work. Any escalation in such taxes/ levies during the tenure of the offer/ order will not be paid by the R & B Deptt. Bidders are advised to take in to consideration any such escalations in the prevailing taxes/levies/duties.
- In no circumstances, escalation in the prices will be entertained.
- Your rates are to be submitted as per the enclosed Performa of schedule of rates on www.tender.nprocure.com (online only). Physical submission of price bid will disqualify the Bidder.
- The scope of the bidder shall include the cost of the total system, installation and Commissioning, five years CMC charges, regular cleaning of the modules, submission of the Quarterly report in the format as specified in Annexure-2 of the Tender as specified.

SCHEDULE-A

**Name of Work :- Providing and Erecting solar roof top on grid system at New RTO office
subhashbridge, Ahmedabad.**

Sr. No.	Item No.	Item	Qty.	Unit	Amount	Place
NIL	NIL	NIL	NIL	NIL	NIL	NIL

Contractor's signature

**Dy. Executive Engineer
M.S. Elect. Sub-Division
R&B Deptt., Ahmedabad.**

<u>SCHEDULE-B</u>						
Name of work: Providing and Erecting solar roof top on grid system at New RTO office subhash Ahmedabad.						
SR NO.	QUANTITY	DESCRIPTION	Unit	Rate in words	Rate in figure	
1		<p>Supply, Installation, Testing & Commissioning of following size of Grid Tied Solar Power Plant with</p> <p>Solar Panels (ALMM approved): Frame Material : Anodized Aluminum alloy Frame With Twin Wall Profile, Front Cover : High Transmission Low-Iron Tempered Glass (AR Coated), High efficiency and positive power tolerance Pmax: 0/+5, Module Efficiency should be approx. 19.5%-22%, Normal operating temperature 45'C, Junction Box with Waterproof IP67 & MC4 Compatible and Enclosed with Bypass diodes, 100% Electroluminescence test to ensure error free Modules, Thep. temp. co-efficient of the PV module shall equal or better than - 0.45%/degree C. Solar PV modules of minimum fill factor 75% to be used. Unit Production:-More than 4.5 Unit /kw /day (Actual)(1Year Avg) With 10 year Product warranty. Modules must be complied to the DCR(Domestic content requirements). The Ration of AC to DC is 5:6 for the Installation capacity which are given in AC KW.</p> <p>Solar Inverter: MPPT Range: MPPT Range: 80-1000 V , Max efficiency: 97.5% - 98.9%, O/p Frequency: 50/60Hz, Operating Altitude (m) ≤4000, O/p Power Factor: ~1, O/P THDi: <3%, Operating Tempreture Range: -25~60°C, Integrated protection of Inverter are Anti-islanding Protection, Input Reverse Polarity Protection, Insulation Resistor Detection, Ground fault protection, Residual Current Monitoring Unit, Output Over Current Protection, Output Short Circuit Protection, Output Over Voltage Protection, PV array string fault Protection. Protection Degree: IP65, User Interface LCD & APP, Datalogger & Communication: GPRS / Wi-Fi.</p>				

		<p>Integrated, Input Reverse Polarity Protection Integrated, Insulation Resistor Detection Integrated, Residual Current Monitoring Unit Integrated, Output Over Current Protection Integrated, Output Short Circuit Protection Integrated, Output Over Voltage Protection Integrated, Protection Degree: IP65, User Interface LCD & APP, Datalogger & Communication: GPRS / Wi-Fi, Module Mounting Structure: The mounting (Rectangular pipe / square pipe / circular pipe) with requisite cross bars, nuts and bolts, etc. shall be Hot deep galvanized with minimum 80micron coating. The Rectangular / square / circular hollow pipe section used for the structure should have a minimum thickness of 2.0 mm. other than above, the material thickness should be minimum 2.5 mm. A certificate of a structural engineer certifying the strength and stability of the mounting structure to withstand the weight and wind speed of 150 km/hour, shall be submitted by the vendors. Hot Dipped Galvanized steel coils. suitable arrangement for base plate for foundation, solar panel mounting, the structure should be suitable for carry the load of solar panel, wiring, sprinkler system etc. with necessary foundation work/wall mount, j bolt, anchor fastener etc. the nut bolt used for installation of structure should be (SS 304) quality. The ground clearance of the bottom most edge of solar panel shall not be less than 300 mm to 1200 mm or as per site's technical/feasibility requirement.</p> <p>a. Column – The minimum section (thickness) should be 60MM*40MM</p> <p>b. Rafter - The minimum section (thickness) should be 60MM*40MM</p> <p>c. Purlin - The minimum section (thickness) should be 40MM * 40MM Balance of System with necessary Switchgears (Suitable size and protection of ACDB & DCDB), interconnecting wiring, earthing system as per the CEIG drawing approval,</p>				
		lightning arrester system as per the CEIG drawing approval, all liasoning work with various gov. department like state nodal agency, DISCOM & CEIG is included in agency scope (Excluding All charges namely GEDA Application fees, Solar connectivity Charges, Meter connectivity Charges, Meter testing Charges and system stability/strengthening charges.)				
		(Excluding GEDA Application fees, Solar connectivity Charges, Meter connectivity Charges, Meter testing Charges.)				
	100	(E) Grid Tied Solar Power System: 51 - 100 kW (3 - phase)	Ea	Rupees Forty Thousand Six Hundred Fifty Eight And Paise Fifty Six Only	40658.56	
2		Providing and erecting XLPE FRLSH(IS:7098)(I)-88 ISI armoured cable multistrand Aluminium conductor for 1.1 KV. to be laid on wall with necessary clamps or in existing trench / pipe of following size of cables				
	100	(F) 3 1/2 core 120 Sq. mm (70 Sq. mm 1/2 core)	Mtr	Rupees Six Hundred Forty Eight And Paise Forty Two Only	648.42	

3	30	Making trench in Hard Murrum / Tar Road of suitable width of 90 cm or required depth for laying any size of cable or locating the fault all over the run and back filling the same and making the surface as normal ground.	Mtr	Rupees Seventy Four And Paise Seventy Four Only	74.74	
	30	(B) If additional machinery like hammer driller or JCB use [Add]	Mtr	Rupees Three Hundred Fifty Seven And Paise Fifty Four Only	357.54	
4		Drilling the road without breaking the road surface (Asphalt) for laying of cable for feeding power supply by making up to following size of holes at both ends complete.				
	15	(B) Up to 150 mm bore dia	Mtr	Rupees Six Hundred Sixteen And Paise Ten Only	616.10	
5		Providing & laying approved make Double walled corrugated pipes (DWC) of polyethylene(conforming to IS 14930 II)with necessary connecting accessories of same material at required depth in existing trench for laying of cable. below ground / road surface for enclosing cable				
	40	(D)120 mm outer dia.	Mtr	Rupees One Hundred Thirty Seven And Paise Thirty Six Only	137.36	
6		Providing and, fixing heavy duty flange type brass double compression type cable gland with rubber ring for PVC insulated armoured cable complete with out going tails, insulating tape etc for following size of cables.				
	2	(E) 3 & 1/2 core 120 Sq. mm	Ea.	Rupees One Hundred Forty And Paise Thirty Nine Only	140.39	

	2	(C) 3 & 1/2 core 70 Sq. mm	Ea.	Rupees One Hundred Three And Paise Two Only	103.02	
7		Solder less crimping type Aluminium lugs conforming to IS suitable for cable of following size evenly crimped with high pressure tool & connected to switchgear terminals with brass/cadmium plated nut bolts in an approved manner.				
	2	(E) 70 Sq.mm.	Ea.	Rupees Twenty Five And Paise Twenty Five Only	25.25	
	6	(G) 120 Sq.mm.	Ea.	Rupees Forty Five And Paise Forty Five Only	45.45	

8		Providing and fixing approved make Perforated C type cable tray. Made from sheet steel. The cable tray should be single or double bended as per required and as per IS 2062/1079 and shall be coated with hot dip galvanizing as per IS 2629/4759. with max 17.5% perforation with coupler plate / Fish plate and GI hardware like nut - bolt and washers etc. erection with necessary support(included) as per Specification and as per instruction of engineer in charge..				
	50	(3) 150 X 50 X 1.6 mm Thick	Rmt.	Rupees Four Hundred Twenty Four And Paise Twenty Only	424.20	
9	8	carry out RCC Core cutting- up to 100 mm dia./300mm thick Wall/beam/slab with providing PVC pipe of 3 mm thick inside and necessary finishing on both ends of wall .	JOB	Rupees One Thousand Five Hundred Forty Nine And Paise Thirty Four Only	1549.34	
Total						4192817.04

Rupees Forty-one lakh ninety-one thousand eight hundred seventeen and four paise

I / We am / are willing to carry out the work at _____%above / below percent (should be written in figures and words) at the estimated rates mentioned above a m o u n t of my/your tender works out as under.

Estimated amount: - _____

Put to tender Rs. _____

Deduction _____ % Below _____

Net total Rs. _____

In Words. _____

Less for Dismantle Material Rs. _____

Estimated amount: - _____

Put to tender Rs. _____

Deduction _____ % above _____

Net total Rs. _____

In Words. _____

Less for Dismantle Material Rs. _____

Dy. Exe. Engineer
M.S. Elect. Sub-Div.
R. & B. Deptt. Ahmedabad.

Executive Engineer
Ahmedabad Elect. Dn. No. 1,
R. & B. Deptt. Ahmedabad.