

Conditions for Solar System

Tender for installation of Grid Connected Solar Photovoltaic System on the govt. Building
The salient features and key provisions of the Tender:

In view of the requirement of the Government Building for installation of Grid tied Solar Photovoltaic rooftop system, tender 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:

70 kW and above. (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 Top **cone** solar module not less than 570Wp each and having valid IEC certificate. (Certificate to be submitted on short listing 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.

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-GridSolar-Part (1) Dated 30-12-2021 and there after 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.

- 2) **Invertors:-** IEC certified invertors with in-built anti-islanding facility of Rated capacity equal to Project registered capacity and all the Specification mention in the Schedule.

- 3) **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
- d. Nut. Bolt/J hook – SS 304 of suitable size.
- e. Mild Clamp/ End Clamp/ anchor Fastener- suitable as per requirement of stability of structure.

- 4) AC, DC cable shall be of ISI mark and reputed make.
- 5) 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 arrester.

1) The system cost shall be inclusive of supply of solar modules, invertors, mounting structure, AC DC cables in Suitable perforated /ladder tray with necessary support fabrication, nuts bolts, anchor fastener and minor civil work (if required) with **CPVC** conduit as per requirement on location (Rate include all above and supply of minimum AC Cable Length Up to 100 Meter or requirement at site as per the route finalized by the authority up to 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, No excess cable charges will be payable.

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,. No any differential/additional Charges for LT Bidirectional meter will be reimbursed Or will be paid by the Department.

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

- 6) The scope of regular cleaning (every two/three month as per the site condition) 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.
- 7) 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 base** 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..
- 11) Conditional Tender or Tender with deviations shall be outright rejected at discretion of Executive Engineer, R & B Deptt.

GUIDELINES AND ELIGIBILITY CRITERIA FOR BIDDERS (Solar System)

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
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 Contract (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.

Annexure-1 (Solar System)

Technical Inspection Report for Solar PV Roof top 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 Invert ers	Type of Inverter (Single/Three phase)	Model No.
2	Inverter					

Total Capacity of Solar PV System in kW DC:

_____ **Total Rated output of**
Inverters in kW/KVAAC: _____

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 it here of the one	Remarks
1.	PV Module complying IEC certificate	IEC61215/IS14286 IEC61853-I,IS16170-I IEC61730 IEC61701	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 connect or sare protected against environment		OK Not OK	
7.	PV module are neat and clean		OK Not OK	
8.	PV Modules electrical Connection sare 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	Min2.0MM/ Min.2.5MM	OK	Not OK	
4.	Structure Installed Properly	OK	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)for10kW Above	Yes	No	N.A.
5.	ACDB Installed Properly	OK	Not OK	
6.	Cables terminated properly through gland song land 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} x100*

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, IEC60068-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.	DCD is connect 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 IS3043/IEEE80

Earth pit Construction :Chemical Charcoal-Salt

Lightning Arrester(LA) : Frank line rode

ES Lightning Arrester(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-21($R < 0.50\Omega$)	OK	Not OK
	Lightning Earthing Pit-1 ($R < 0.50\Omega$)	OK	Not OK
	Lightning Earthing Pit-21 ($R < 0.50\Omega$)	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	600/1000V	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

SiteImage2: 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----

Annexure-2 (Solar System)

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. Inter connection 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 CONNECTED 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 GRIDCONNECTED 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. 2xSr. 3xSr. 4)x Sr. No. 5/100} x100

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 o f 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

Annexure-3 (Solar 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 Inverter
Make of Inverter
Rated Output of Inverter, kW(AC)
Total number of Invertors
Serial No(s)
Warranty valid upto
7. Designation & Address of the person to be Contacted for claiming Warranty obligations.

We here by provide a foresaid warranty and undertake to replace free of cost the PV MOUDULES, Inverter 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).

Annexure-4 (Solar System)

Date: DD/MM/YY

To,
Executive Engineer,
Ahmedabad Elect. Div-2,
A/9, M.S Building, Lal Darwaja,
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 tow it stand 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 roof top PV system.

Thanking you,

Yours faithfully,

Signature

Name

Designation

Stamp of the Company/Firm

Encl: Certificates of the Structural Engineer

Annexure-5 (Solar System)

(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 km ph 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 attache