

## DAV Public School, Pakhowal Road, Ludhiana

### Technical Specifications and other details for Solar Power Plant of capacity 150 kw

1. The firm must be registered in CREST/PEDA/MNRE approved.
2. The scope of work for the installer include study of the rooftop of buildings, complete design, engineering, manufacture, supply, storage, civil work, erection, testing & commissioning of the grid connected rooftop solar PV project as per the norms of the CEA and local DISCOM.
3. Validity of quotation:45 days
4. **Wind Capacity:** Maximum wind bearing capacity of the structure should not be less than 170Km/hr

### Design and Technical Specifications

Description	Value
Site	<b>DAV Public School, Pakhowal Road, Ludhiana</b>
Latitude	30.8584°N
Longitude	75.8169°E
Average radiation	1904KWh/Sqm/year
Module operation	Fixed
Module tilt	(10-20)°
Tracking	No /Optional cost to be quoted separately
Mounting	Rooftop
Cell technology	MONO crystalline Halfcut (500 W ++ )
Shadow free rooftop area required	100 Sq feet per KW
Units generated estimation per year	Minimum 1440 units per KW
No : of modules	
Type of installation	Grid Connected
Capacity	150 kWp
Net metering	Agreement with DISCOM: excess power will be exported to the grid for which credit can be taken
Project Scope	Design, engineering, supply & installation of plant with Net metering including the panel cleaning system and weather monitoring sensors
Battery	
Module degradation	As per MNRE norms
Module CUF factor	>20.5%
Warranty Inverter	As per MNRE norms
Generation Warranty–Modules	As per MNRE norms

<b>Details of Bill of Material</b>			
<b>Sr.No.</b>	<b>Item</b>	<b>Specifications</b>	<b>Make</b>
<b>MAJOR EQUIPMENT</b>			
1	Solar Panels	Mono Crystalline Half cut Silicon PV Modules with Efficiency >20.5% with approval as per IEC 61215 and IEC61730. Warranty:25years(power warranty).to be considered from top 5 panel manufactures (500-530)watt	Adani/ Renewsys/ Waaree/ Tata/Satwik
2	Inverter	Inverter, Three-phase string inverters ideal for rooftop systems complying with all requirements for IP65 protection – their housing to provide reliable protection from dust and water, including high pressure washing. With Fast MPP tracking and a wide input voltage range to ensure the high levels of efficiency even at low irradiation, to achieve an efficiency of up to 98.5%. With integrated data-logger to send all important operating data through Internet portal.	Sofar/Delta/ Schneider
<b>MOUNTING STRUCTURE</b>			
3	Module Structure	G.I Structure Legs and Rafter dimension (40 x 80x 40 mm), Purleen40 x 40 x 40 mm	Reputed
<b>AC and DC CABLES</b>			
4	DC Cable	1C X 4 SQMM Copper Cable,1.1KVGrade	Polycab
5	AC Cable	3.5C X 120 SQMM XLPE AL.UNARM., 1.1KVGrade	Polycab
<b>DATA LOGGER &amp; ACCESSORIES</b>			
6	Data online monitoring	Inputs from Inverter RMS.	Sofar Delta/Schneider
<b>ACDB and DCDB Panel</b>			
7	AC Combiner box	1 IN 1 OUT(4P MCCB 150A,25kA) Outdoor with IP-65, Cable entry and out from bottom. 2 NOS	Polycarbonate/ MS panel (L&T Electric Breaker)
8	DCDB	4 IN 4 OUT (2 BOXES Outdoor with IP-65), Cable entry and out from bottom	Polycarbonate (Sigma/ Elmax Electric Breaker)
9	L.T PANEL	2 IN 1 OUT WITH MCCB 250 A with ACSPDType-2, Outdoor with IP-65, Cable entry and out from bottom	Polycarbonate/MS panel (L&T Electric Breaker)
<b>ACCESSORIES</b>			
10	MC4Connector	MC4Pair1000VDC,15Amp(For4sqmmcable)	Leoni

11	Nut-Bolt (to be spring fitted)	S.S	ISMARKED
12	Earthing Nut bolt	S.S	ISMARKED
13	Electrical Tape	RYB, green & Black	STEELGRIP
14	Sign Board	AC & DC Side Danger sign Board (Water Proof& Suitable for Night Vision, Radium)	Reputed
15	Stickers	Inverter No Stickers	Reputed
16	Cable Tag	AC cable Tag for Inverter Number marking & ACCB	Reputed
17	Glands for Cables	3.5CX120sqmm Al Ar Cable for ACCB, Termination Panel	If required
18	Cable Tray	40 x 40 x 1.6 mm PVC Cable Tray with complete Accessories for DC & AC Cable	Reputed
19	Cable Tray Supporter	GI Supporter with all accessories	Reputed
20	Cable Ties	Cable ties with 150 mm length (UV Protected) and SS Cable Tie-300 mm Length	Reputed
21	Sealant	Silicon sealant with Working temp range (-) 40°C to 149°C, Joint Movement $\pm$ 50%, Coverage 13 linear meter for 5 mm width x m depth joint	Fishure
<b>CONDUIT &amp; ACCESSORIES</b>			
22	uPVC conduit Pipe	18-25mm For DCCable	Diplast/REX
23	L-Bend uPVC	18-25mm For DCCable	Diplast/REX
24	Junction for uPVC	18-25mm For DCCable	Diplast/REX
25	Saddle	18-25mm For DCCable	Reputed
26	Rivet for Saddle with washer if required	As Required	Reputed
27	Flexible GI Conduit for DC/AC Cables Finishing	Size as per required	Reputed
<b>EARTHING SYSTEM &amp; ACCESSORIES</b>			
28	Lightning Arrester	*Lightening Arrestor (ESE Type) *Should be at least 5 mtr above panel height *5 Mtr Mast Height *Radius of Protection 63Mtr	GSI/LYRA
29	Earthing Kit	Earthing Pits with chemical earthing separate for AC, DC and LA. DC, Earthing (Structure)-3Nos L. A earthing-2 Nos AC Earthing (Inverter and ACCB) - 3Nod *Copper bonded Earthing Rods *Pit Dimension (1x1) Ft and 3m deep *Earthing pit cover *Difference between each Earthing is approx. 1-2 meters	Trust power

30	Earth Strip	25 X 3 mm AI strip	JMV or Equivalent
31	Screw	As Required	Reputed
32	Gitti	As Required	Reputed
33	Insulation Sleevs for Earth Strip	For 25X3mmAIstripforinsulation	Reputed
34	Insulator Block (T Type)	For mounting earthing strip to walls	Reputed
<b>Bi-directional meter</b>			
35	Bi-directional meter	3phaseLTCTMETER,HT dash5	Secure/LnT (Approved)
<b>INSTALLATION</b>			
36	Complete Installation and Commissioning. including all drawings showing string arrangements and connections	150kWp solar power plant	

**Last date to submit sealed quotation is 25.06.2022 by 4 pm at the following postal address:**

**To  
The Principal**

**DAV Public School,  
Sarabha Nagar Extn.,  
Pakhawal Road, P.O Lalton Kalan,  
Ludhiana, Punjab-142022**