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Army Public School,
New Cantt, Allahabad-211 001

5077/Solar

21 Sep 2022

M/S

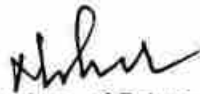
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INVITATION OF TENDER

**DESIGN, SUPPLY, ERECTION, TESTING AND COMMISSIONING INCLUDING WARRANTY,
OPERATION & AMC MAINTENANCE OF 50 KWP ROOF TOP ON GRID SOLAR PV
POWER SYSTEM IN APS, NEW CANTT, ALLAHABAD**

1. You are invited by the Management of APS, New Cantt, Allahabad to submit Tender for the above mentioned work described in the accompanying documents.
2. Your tender duly completed may be put in the tender box kept in school administrative block on or before **12 Oct 2022** between 1000 to 1500 hours together with all relevant documents sealed in an envelope duly quoted your rates.
3. The following documents are included with this tender invitation:-
 - (a) Part I – General Information about the Tender.
 - (b) Part II- Technical Bid.
 - (c) Part III- Price Bid.
 - (d) Part IV- Terms & Conditions.
 - (e) Part V - Formats For Submitting RFS
4. The Management of APS, New Cantt, Allahabad doesn't bind itself to accept the lowest nor any tender and may cancel tendering process at any time.
5. Wherever there is difference between specifications and drawings, specifications will supersede the drawings.


Signature of Contractor


Signature of Principal
APS, New Cantt, Allahabad

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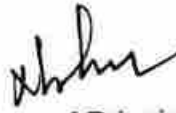
PART I – GENERAL INFORMATION ABOUT THE TENDER

1	Document Description	This RFS document comprises the terms and condition for bidding process for 50Kwp Solar On Grid Solar Plant on the roof top of Army Public School building
2	Tender No & Date	5077/Solar dated 21 Sep 2022
3	Broad Scope of Work for Bidding	APS, NEW CANTT, ALLAHABAD has identified building within its premises for installation of Solar rooftop Plant. The Successful Bidder(s) as per the terms of this tender document shall be responsible for design, supply, erection, testing and commissioning including warranty, operation & maintenance (O&M) of Roof Top Solar PV power system on identified buildings of APS, NEW CANTT, ALLAHABAD . The Warranty shall be for a period of five / three years from the commercial Operation date.
4	Schedule date of issuing Tender	From 21 Sep 2022 to 12 Oct 2022 from 1000 to 1500 hours at APS, NEW CANTT, ALLAHABAD office.
5	Bid closure date of tender documents	12 Oct 2022 at 1500 Hrs at APS, NEW CANTT, ALLAHABAD office.
8	Last date for submission of hard copies along with tender copy & credentials.	12 Oct 2022 at 1500 Hrs at APS, New Cantt, Allahabad office.
12	Place of Tender Opening	APS, NEW CANTT, ALLAHABAD, UTTAR PRADESH
13	Officer Inviting Bids/Contact Person	PRINCIPAL, APS, NEW CANTT, ALLAHABAD, UTTAR PRADESH
14	Address/E-mail Id	APS, NEW CANTT, ALLAHABAD, Rajiv Gandhi Marg, New Cantt, Allahabad, Uttar Pradesh- 211001 Phone: 0532 – 2420772, Email id: armyschoolalld@gmail.com info@armypublicschoolalld.org
15	Eligibility Criteria	Please refer to the Tender Document.
16	Rights reserved with the Department	APS, NEW CANTT, ALLAHABAD reserves the right to accept or reject any or all the tenders received without assigning any reasons.


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17	General Terms and Conditions	As per tender documents.
18	Tender cost	Rs 500/- non refundable. Draft to be made in favour of Army Public School, New Cantt, Allahabad
19.	EMD	2.5% of total project cost through bank draft, refundable. Draft to be made in favour of Army Public School, New Cantt, Allahabad

Signature of Contractor


Signature of Principal
APS, New Cantt, Allahabad

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1.	Name of the firm	
2.	Address of the head/ registered / branch office	
3.	Phone no.	
4.	Fax no.	
5.	Mobile no.	
6.	PAN NO.	(Enclose Proof)
7.	GSTN NO. and date	(Enclose copy of GSTN No. Registration)
8.	Principal qualification document (refer clause 25 B)	(Enclose Proof)
9.	Your bank account no.	
10.	Name & address of bank	
11.	Category of trade	
12.	Name of the partners / proprietor	
13.	Experience in years in the respective trade(attach work orders executed in past two years)	
14.	Single work order during the last two financial years	

CERTIFICATE

In consideration of my being contractor, I hereby agree that I shall not withdraw, amend or attach any conditions to my tenders submitted to the school authorities before from the date of issuing work order. Said tenders of acceptance, and I do so, the Principal APS, New Cantt, Allahabad, shall be entitled to forfeit our earnest money deposit along with the tender and remove us from the school work contract without prejudice to any other right or remedy by school for such breach on our part.

DECLARATION

I (Proprietor/ Partner/Manager) do here by declare that the entire declaration made in the application form is true to the best of my knowledge. [NOTE: - If there any changes in the construction of working of firm, the affecting accuracy of the answer now given, should be promptly communicated to The Principal, APS, NEW CANTT, ALLAHABAD.

Signature of Contractor
With rubber stamp

DEFINITIONS & ABBREVIATIONS

In this "Bid / RFS Document" the following words and expression will have the meaning as herein defined where the context so admits:

APS shall mean Army Public School, New Cantt, Allahabad

"Allocated Capacity" Shall mean the capacity in kWp allocated to the Successful Bidder(s) and shall be as indicated in the Letter of Allocation (LoA).

"B.I.S" shall mean specifications of Bureau of Indian Standards (BIS);

"Bid" shall mean the Techno Commercial and Price Bid submitted by the Bidder along with all documents/credentials/attachments annexure etc., in response to this RFS, in accordance with the terms and conditions hereof.

"Bidder/Bidding Company" shall mean any commercial entity submitting the Bid. Any reference the Bidder includes Bidding Company / including its successors, executors and permitted assigns as the context may require;

"Bid Deadline" shall mean the last date and time for submission of Bid in response to this RFS as specified in Bid information Sheet;

"Bid Capacity" shall means capacity offered by the bidder in his Bid under invitation.

"CEA" shall mean Central Electricity Authority.

"Commercial Operation Date or Date of Commercial Operations (COD)" shall mean the date on which the Project is declared by the Successful Bidder(s) to be operational (which means the Project is able to inject Contracted Capacity to Grid).

"Competent Authority" shall mean Principal of APS, NEW CANTT, ALLAHABAD or a person or group of persons nominated by him/her for the mentioned purpose herein; **"Commissioning"** means Successful operation of the Project / Works by the Contractor, for the purpose of carrying out Performance Test(s) as defined in RFS.

"Company" shall mean any commercial entity registered with Goods and Service Tax (GSTIN), including proprietorship, partnership or a body incorporated in India under the Companies Act, 1956 or Companies Act, 2013 including any amendment thereto.

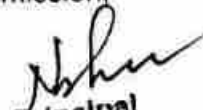
"Capacity Utilization Factor" (CUF) shall mean the ratio of actual energy generated by SPV project over the year to the equivalent energy output at its rated capacity over the yearly period.

$CUF = \text{actual annual energy generated from the plant in kWh} / (\text{installed plant capacity in kW} * 365 * 24).$

"Eligibility Criteria" shall mean the Eligibility Criteria as set forth in Clause 3.3 of this RFS;

"Financially Evaluated Entity" shall mean the company which has been evaluated for the satisfaction of the Financial Eligibility Criteria set forth in Clause 3.3.3 hereof;

"IEC" shall mean specifications of International Electro-technical Commission;


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"kWp" shall mean kilo-Watt Peak,

"kWh" shall mean kilo-Watt-hour;

"MNRE" shall mean Ministry of New and Renewable Energy, Government of India;

"O&M" shall mean Operation & Maintenance of Rooftop Solar PV system for 5 years

"Project Cost / Project Price" shall mean the price offered by the Bidder for the Scope of work as per RFS document.

"Performance Ratio" (PR) means the ratio of plant output versus installed plant capacity at any instance with respect to the radiation measured. $PR = (\text{Measured output in kW} / \text{Installed Plant capacity in kW}) * (1000 \text{ W/m}^2 / \text{Measured radiation intensity in W/m}^2)$.

"Qualified Bidder" shall mean the Bidder(s) who, after evaluation of their Techno Commercial Bid.

"RFS" shall mean Request for Selection (RFS)/Bid document/Tender document


"Successful Bidder(s) /Contractor/Project Developers(s)" shall mean the Bidder(s) selected by APS, NEW CANTT, ALLAHABAD pursuant to this RFS for Implementation of Grid Connected Roof Top Solar PV System as per the terms of the RFS Documents, and to whom an Allocation Letter has been issued.

"SNA" shall mean State Nodal Agency.

"Tendered Capacity" shall mean the Total aggregate capacity in KW as indicated in table of each Location proposed to be allocated by APS, NEW CANTT, ALLAHABAD to the Successful Bidder through this bidding process as per terms and conditions specified therein.

"Wp" shall mean Watt Peak.

"1MWp" for the purpose of conversion in kWp shall be considered as 1000kWp


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PART II – TECHNICAL SPECIFICATIONS

1. The proposed projects shall be commissioned as per the technical specifications given below. Any shortcomings will lead to cancellation of LoA as decided by **APS, NEW CANTT, ALLAHABAD & Competent Authority's decision will be final and binding on the bidder.**

2. **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 and switches. Photo Volatice (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 day time. Components and parts used in the SPV power plants including the PV modules, metallic structures, cables, junction box, switches, PCUs etc., should conform to the Bearau of Indian Standard (BIS) or IEC or international specifications, wherever such specifications are available and applicable.

Solar PV system shall consist of following equipment/components.

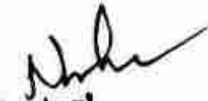
- I. Solar PV modules consisting of required number of Mono Crystalline PV modules.
- II. Grid interactive Power Conditioning Unit with Remote Monitoring System
- III. Mounting structures
- IV. Junction Boxes.
- V. Earthing and lightening protections.
- VI. IR/UV protected PVC Cables, pipes and accessories

3. **Solar Photovoltaic Modules:**

3.1. The PV modules used should be made in India.

3.2. The PV modules used must qualify to the latest edition of IEC PV module qualification test or equivalent BIS standards Mono Crystalline Silicon Solar Cell Modules IEC 61215/IS14286. In addition, the modules must conform to IEC 61730 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.


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- (b) The total solar PV array capacity should not be less than allocated capacity (kWp) and should comprise of solar monocrystalline modules of minimum 390 Wp and above wattage. Module capacity less than minimum 390Wp will 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 8 aluminum.
- (f) The bidder shall carefully and successfully design & accommodate requisite numbers of the modules to achieve the rated power in his bid. Competent authority may allow only minor changes at the time of execution depending upon the availability of space or lack of it during project execution stage.
- (g) Other general requirement for the PV modules and subsystems shall be the Following:-
- (i) The rated output power of any supplied module shall 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.
I-V Curves at STC should be provided by bidder.
 - (iv) Modules approved for installations are Vikram, Waaree, Goldee or equivalent

3.3. Modules deployed must use a RF identification tag. The following information must be mentioned in the RFID used on each module (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).

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- (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
- (j) Other relevant information on traceability of solar cells and module as per ISO 9001 and ISO14001.

3.4. Warranties

(a) Material Warranty.

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").

- (i) Defects and/or failures due to manufacturing.
- (ii) Defects and/or failures due to quality of materials.
- (iii) 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 replace the solar module(s), at the Principals sole option.

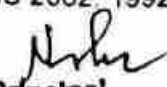
(b) Performance Warranty. The predicted electrical degradation of power generated not exceeding 20% of the minimum rated power over the 25-years period and not more than 10% after ten years period of the full rated original output.

3.5. Array Structure.

(a) Pre-galvanized MS mounting structures may be used for mounting the modules/ panels/arrays. Each structure should have angle of inclination as per the site conditions to take maximum insolation. Each panel should be secured by 4 GI universal clamps made by a Raymond or equivalent. A study report has to be submitted by the successful bidder for the layout of solar panels and angle of inclination to achieve optimum utilization of available solar energy. The report has to be approved by the competent authority.

(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 (like Delhi-wind speed of 120km/ hour). It may be ensured that the design has been certified by the bidder in this regard and submit wind loading calculation sheet. 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.


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(d) Structural material shall be corrosion resistant and electrolytically compatible with the materials used in the module frame, its fasteners, nuts and bolts. Aluminum 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 iodization.

(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. No piercing of the roof is allowed to mount the structure.

(g) The thickness of the structure should not be less than 2 mm and minimum weight not less than 2 kg/ meter length.

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

(i) **3.6. 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 aluminium alloy with full dust, water & vermin proof arrangement. All wires/cables must be terminated through cable lugs. The JB's 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 doors with EPDM rubber gasket to prevent water entry. Single / double compression cable glands. Provision of earthing. 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.

3.7. 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.

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3.8. **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 IEC 60947, part I, II and III/ IS60947 part I, II and III.
- (c) The conduiting and 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

4. **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.

5. **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 should also be DG set interactive. Reverse power protection must be provided to DG set. Inverter output should be


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compatible and synchronized with the grid frequency. Typical technical features of the Inverter shall be as following :

- (a) Switching devices : IGBT/MOSFET Control : Microprocessor /DSP
- (b) Nominal AC output voltage and frequency : 415V, 3 Phase, 50Hz
- (c) Output frequency : 50 Hz
- (d) Grid Frequency Synchronization range: + 3 Hz or more
- (e) Ambient temperature considered: -20° C to 20° C oHumidity : 95 % Non-condensing
- (f) Protection of Enclosure : IP-20(Minimum) for indoor : IP-65(Minimum) for outdoor.
- (g) Grid Frequency Tolerance range : + 3 or more
- (h) Grid Voltage tolerance : - 20% & + 15 %
- (i) No-load losses : Less than 1% of rated power
- (j) Inverter efficiency(minimum) : >93% (In case of 10kW or above)
- (k) Inverter efficiency (minimum) : > 90%
- (l) THD : < 3%
- (m) PF : > 0.9
- (n) Three phase PCU/ Inverter of capacity 20 kW or above shall be used with each power plant system. Total installed capacity of inverters should not be less than 50 kW.
 - (i) PCU/Inverter shall be capable of complete automatic operation including wake-up, synchronization & shutdown.
 - (ii) 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.
 - (iii) Built-in meter and data logger to monitor plant performance through external computer shall be provided.
 - (iv) 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 Standard.
 - (v) 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.

(vi) The PCU/ Inverters should be tested from the MNRE approved test centre / NABL /BIS /IEC accredited testing- calibration laboratories. In case of imported power conditioning units, these should be approved by international test houses.

(vi) Solar inverters approved for installation are SMA, Fronius or equivalent

6. **Integration of PV Power With Grid and backup DG set.** 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. After changeover to back-up DG, PV system should be able to synchronize with the back-up DG set.

(a) **Data Acquisition System / Plant Monitoring**

(i) Data Acquisition System shall be provided for each of the solar PV plant.


(ii) Data Logging Provision for plant control and monitoring, time and date stamped system data logs for analysis with the high quality, suitable PC. PC is to be provided by APS. Metering and for display of systems parameters and status indication to be provided through this PC.

(ii) Solar Irradiance: One integrating Pyranometer / Solar cell based irradiation sensor (along with calibration certificate)is provided by the vendor, with the sensor mounted in the plane of the array. Readout integrated with data logging system.


(iii) Temperature: One Temperature probes for recording the Solar panel temperature and/or ambient temperature to be provided complete with readouts integrated with the data logging system

(iv) The following parameters are accessible via the operating interface display in real time separately for solar power plant:

- (aa) AC Voltage.
- (ab) AC Output current.
- (ac) Output Power
- (ad) Power factor.
- (ae) DC Input Voltage.
- (af) DC Input Current.
- (ag) Time Active.
- (ah) Time disabled.
- (ai) Time Idle.


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- (aj) Power produced
 - (ak) Protective function limits (Viz-AC Over voltage, AC Under voltage, Over frequency, Under frequency ground fault, PV starting voltage, PV stopping voltage.
- (v) All major parameters available on the digital bus and logging facility for energy auditing through the internal microprocessor and read on the digital front panel at any time) and logging facility (the current values, previous values for up to a month and the average values) should be made available for energy auditing through the internal microprocessor and should be read on the digital front panel.
- (vi) PV array energy production: Digital Energy Meters to log the actual value of AC/ DC voltage, Current & Energy generated by the PV system provided. Energy meter along with CT/PT should be of 0.5 accuracy class.
- (vii) Computerized DC String/Array monitoring and AC output monitoring shall be provided as part of the Inverter and/or string/array combiner box or separately.
- (viii) String and array DC Voltage, Current and Power, Inverter AC output voltage and current (All 3 phases and lines), AC power (Active, Reactive and Apparent), Power Factor and AC energy (All 3 phases and cumulative) and frequency shall be monitored.
- (ix) Computerized AC energy monitoring shall be in addition to the digital AC energy meter already installed in the premises.
- (x) The data shall be recorded in a common work sheet chronologically date wise. The data file shall be MS Excel compatible. The data shall be represented in both tabular and graphical form.
- (x) All instantaneous data shall be shown on the computer screen.
- (xi) Software shall be provided for USB download and analysis of DC and AC parametric data for individual plant by the vendor.
- (xii) Provision for Internet monitoring and download of data shall be also incorporated.
- (xiii) Remote Server and Software for centralized Internet monitoring system shall be also provided for download and analysis of cumulative data of all the plants and the data of the solar radiation and temperature monitoring system.


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(xiv) Ambient / Solar PV module back surface temperature shall be also monitored on continuous basis.

(xv) Simultaneous monitoring of DC and AC electrical voltage, current, power, energy and other data of the plant for correlation with solar and environment data shall be provided.

(xvi) Remote Monitoring and data acquisition through Remote Monitoring System software at the project location with latest software and service connectivity for online / real time to be provided by the vendor.

(xvii) Data monitoring/control complete to be supplied and operation and maintenance/control to be ensured by the supplier.


7. **Transformer "If Required" & Metering.** This will be given by Discom and process will be done by APS, NEW CANTT, ALLAHABAD, bidder will only do documentation support. The bidirectional electronic energy meter (0.5 S class) shall be installed for the measurement of import/Export of energy. The meters shall be provided by the local DISCOM.

8. **Power Consumption.** All the power generated through solar power plant has to be consumed internally. No excess power should be exported to the grid and suitable zero export device (ZED) is to be installed to achieve zero export.

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

(a) **Lightning Protection.** The SPV power plants shall be provided with lightning & overvoltage 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. One LA has to be provided for every 50 m radius. Lightning protection should be provided as per IEC 62305 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.

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


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(c) **Earthing Protection** 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. Earth Resistance shall be tested in presence of the representative of Department/[NAME OF THE ORGANISATION] as and when required after earthing by calibrated earth tester. PCU, ACDB and DCDB should also be earthed properly.

(d) 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.

(f) **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 in a short period of time. 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 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. This switch shall be locked by the utility personnel.

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

(a) Shall meet IEC 60227/IS 694, IEC 60202/IS1554 standards

(b) Temp. Range: -10°C to $+80^{\circ}\text{C}$.


(c) Voltage rating 660/1000V

(d) Excellent resistance to heat, cold, water, oil, abrasion, UV radiation

(e) Flexible

(f) 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.

(g) Cable Routing/ Marking: All cable/wires are to be routed in a 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. All cabling is to be underground/ concealed/ secured appropriately.


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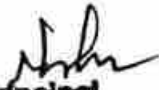
- (h) The Cable should be so selected that it should be compatible up to the life of the solar PV panels i.e. 25 years.
- (i) The ratings given are approximate. Bidder to indicate size and length as per system design requirement. All the cables required for the plant provided by the bidder. Any change in cabling sizes if desired by the bidder/approved after citing appropriate reasons. All cable schedules/layout drawings approved prior to installation.
- (j) 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.
- (k) 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%.
- (l) 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 %.
- (m) Cables recommended for this project are Havels, Microtek, Wacab, Polycab, or equivalent.
- (n) Connectors to be used are Tyco, Phoenix or equivalent.

11. **Connectivity.** Zero export guide lines and amended from time to time. The injection shall be compulsorily at the LT level of the distribution network

Plant Capacity	Connecting voltage
Up to 5 KW	LT – single phase
5 kW and above	LT – Three phase

12. **Danger Boards And Signage.** Danger boards should be provided as and where necessary as per IE Act. /IE rules as amended up to date. Three signage shall be provided one each at battery – cum- control room, solar array area and main entry from administrative block. Text of the signage may be finalized in consultation with [NAME OF THE ORGANISATION]/ Principal.

13. **Fire Extinguishers.** The fire fighting system to be provided by the vendor for the proposed power plant for fire protection shall be consisting as under:-


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- (a) ABC / CO2 6 Kg each Portable fire extinguishers Qty 02 (Two) in the control room for fire caused by electrical short circuit
- (b) 04 (Four) Sand iron buckets (15 ltrs capacity each) in the control room
- (c) The installation of Fire Extinguishers should confirm to TAC regulations and BIS standards. Two ABC / CO2 6 Kg each Portable fire extinguishers shall be provided in the control room housing Inverter as well as on the Roof or site where the PV arrays have been installed.

14. **Drawings & Manuals**

- (a) Two sets of Engineering, electrical drawings and Installation and O&M manuals are to be supplied. Bidders shall provide complete technical data sheets 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.
- (b) Approved ISI and reputed makes for equipment be used.
- (c) For complete electro-mechanical works, bidders shall supply complete design, details and drawings for approval to APS, NEW CANTT, ALLAHABAD /Principals before progressing with the installation work.

15. **Planning and Designing:**

- (a) The bidder should carry out Shadow Analysis at the site and accordingly design strings & arrays layout considering optimal usage of space, material and labor. The bidder should submit the array layout drawings along with Shadow Analysis Report to APS, NEW CANTT, ALLAHABAD /Principal for approval.
- (b) APS, NEW CANTT, ALLAHABAD reserves the right to modify the landscaping design, Layout and specification of sub-systems and components at any stage as per local site conditions/requirements.
- (c) The bidder shall submit preliminary drawing for approval & based on any modification or recommendation, if any.

16. **Drawings To Be Furnished By Bidder After Award Of Contract.**

- (a) The Contractor shall furnish the following drawings Award/Intent and obtain approval.
- (b) General arrangement and dimensioned layout.
- (c) Schematic drawing showing the requirement of SV panel, Power conditioning Unit(s)/ Inverter, Junction Boxes, AC and DC Distribution Boards, meters etc.
- (d) Structural drawing along with foundation details for the structure.
- (e) Itemized bill of material for complete SV plant covering all the components and associated accessories.


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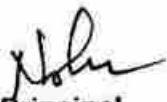
(f) Layout of solar Power Array & Shadow analysis of the rooftop

17. **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 upto 90% of the annual energy requirements depending upon the area of rooftop available and the remaining energy requirement of the office buildings will be met by drawing power from grid at commercial tariff of DISCOMs.

18. **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.

(a) **APS, NEW CANTT, ALLAHABAD, NEW CANTT, ALLAHABAD** invites bids from the eligible bidders to participate in the Request for Selection (RFS) of Bidders for design, manufacture, supply, erection, testing and commissioning including warranty, operation & maintenance of Roof Top on grid Solar PV power system. For the implementation of above mentioned work, Bidders should submit their bid proposal/ application along with all supporting documents complete in all aspect on or before bid submission date at the administrative office of **APS, NEW CANTT, ALLAHABAD, NEW CANTT, ALLAHABAD** in prescribed format.

(b) Bidder shall submit bid proposal, complete in all respect as per the Bid Information sheet. Bid proposals received without or lesser than the prescribed format will not be considered. In the event of any date indicated above is a declared Holiday, the next working day shall become operative for the respective purpose mentioned herein.


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DISCLAIMER

- 1 Though adequate care has been taken while preparing the RFS document, the Bidders/Applicants shall satisfy themselves that the document is complete in all respects. Intimation of any discrepancy shall be given to this office immediately. If no intimation is received from any Bidder within twenty (15) days from the date of notification of RFS/Issue of the RFS documents, it shall be considered that the RFS document is complete in all respects and has been received by the Bidder.
- 2 **APS, NEW CANTT, ALLAHABAD**, reserves the right to modify, amend or supplement this RFS document including all formats and Annexure.
- 3 While this RFS has been prepared in good faith, neither **APS, NEW CANTT, ALLAHABAD**, nor their employees or advisors make any representation or warranty, express or implied, or accept any responsibility or liability, whatsoever, in respect of any statements or omissions herein, or the accuracy, completeness or reliability of information, and shall incur no liability under any law, statute, rules or regulations as to the accuracy, reliability or completeness of this RFS, even if any loss or damage is caused by any act or omission on their part.

19. **Interpretations.**

- (a) Words comprising the singular shall include the plural & vice versa
- (b) An applicable law shall be construed as reference to such applicable law including its amendments or reenactments from time to time.
- (c) A time of day shall save as otherwise provided in any agreement or document be construed as a reference to Indian Standard Time.
- (d) Different parts of this contract are to be taken as mutually explanatory and supplementary to each other and if there is any differentiation between or among the parts of this contract, they shall be interpreted in a harmonious manner so as to give effect to each part.
- (e) The table of contents and any headings or sub headings in the contract has been inserted for case of reference only & shall not affect the interpretation of this agreement.



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PART III- PRICE BID20. **Bid Details.**

(a) The bidding process under this RFS of the rooftop scheme is for 50KWp

21. **Bid Capacity**

(a) Bidder can submit the bids for no. one of package.

(b) The capacities indicated across are based on the field survey conducted by APS, NEW CANTT, ALLAHABAD Staff and the Bidders are advised to conduct an independent assessment of the buildings. APS, NEW CANTT, ALLAHABAD shall at its own discretion add/delete building chosen for implementation. The final size of each package along with the building details & Solar rooftop project capacity shall be finalized by the Successful Bidder (s) in consultation with APS, NEW CANTT, ALLAHABAD during issue of LoA.

22. **Instructions To The Bidders.****General Instructions**

(a) Bidder must meet the eligibility criteria independently as a Bidding Company.

(b) Bidder will be declared as a Qualified Bidder based on meeting the eligibility criteria and as demonstrated based on documentary evidence submitted by the Bidder in the Bid.


23. **General Eligibility Criteria.**

(a) The Bidder should be either a body incorporated in India under the Companies Act, 1956 or 2013 including any amendment thereto, a proprietorship firm or a partnership firm having valid GSTIN number and engaged in the business of Solar Power and company must be in working from at least last three years w.e.f. date of publication of this tender.

(b) Copy of certificate of incorporation shall be furnished along with the bid in support of above. In case of proprietorship/ partnership firm, valid GSTIN certificate shall be furnished.

24. **Technical Eligibility Criteria.**

(a) The Bidder should have installed & commissioned at least one or more Grid connected Solar PV Power Projects having an aggregate capacity of not less than 200kWp and at least one project of capacity not less than 50 kWp. The list of project indicating whether the project is grid connected, along with a copy of the Completion certificates from the Client/Principal shall be submitted in support of above.


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(b) The bidder having good technical skill/ knowledge in the field of solar/ renewable energy shall be preferred. Any such certifications by competent authority/ educational institutions/ university preferably borne by bidder (director/ partner/ proprietor), though not binding, but shall be an added advantage.

(c) The Bidder should have and maintain a registered office in Allahabad and have adequate local service setup at Allahabad.


25. **Financial Eligibility Criteria. The Bidder should have an Annual Turnover of more than Rs 1.0 Crores for last two financial years.**

(a) Financial Certificate of company bank account in Annexure B"

(b) Bidders shall furnish copy of GST1 and GSTR 3B of last two years as documentary evidence duly certified by Authorized Signatory and the Statutory Auditor / Practicing Chattered Accountant of the Bidding Company in support of their financial capability. In addition to the identification described above, all the envelopes shall indicate the name and address of the bidder & be super scribed with the RFS to enable the bid to be returned unopened in case it is declared late.


(c) If the envelope is not sealed and marked as above, the **APS, NEW CANTT, ALLAHABAD** will assume no responsibility for the misplacement or premature opening of the bid. The Bidders have the option of sending their Bid either by registered post; or speed post; or courier; or by hand delivery, so as to reach **APS, NEW CANTT, ALLAHABAD** by the Bid Deadline. Bids submitted by telex/telegram/fax/e-mail shall not be considered under any circumstances. APS, NEW CANTT, ALLAHABAD shall not be responsible for any delay in receipt of the Bid. Any Bid received after the Bid Deadline shall be returned unopened.

(d) All pages of the Bid and any other document executed on non judicial stamp paper, forming part of the Bid and corrections in the Bid, if any, must be signed by the authorized signatory on behalf of the Bidder. It is clarified that the same authorized signatory shall sign all pages of the Bid. However, any published document submitted with the Bid shall be signed by the authorized signatory at least on the first and last page of such document Bidders shall submit the Bid in original, duly signed by their authorized signatory of the Bidder. No change or supplemental information to a Bid will be accepted after the Bid Deadline, unless the same is requested for by APS, NEW CANTT, ALLAHABAD.


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(e) All the envelopes shall be sealed properly & shall indicate the Name & address of the Bidder. The Bid must be completing in all technical and commercial respect and should contain requisite certificates, drawings, informative literature etc. as required in the Bid document. Each page of the Bid document should be signed & stamped. Bids with any type of change or modification in any of the terms/ conditions of this document shall be rejected. If necessary, additional papers may be attached by the Bidder to furnish/ submit the required information. Any term / condition proposed by the Bidder in his bid which is not in accordance with the terms and conditions of the RFS document or any financial conditions, payment terms, rebates etc. mentioned in Price Bid shall be considered as a conditional Bid and will make the Bid invalid.


26. **Finalization of Bids.** Bids will be opened by a board of officers detailed by the Chairman.


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PART IV- TERMS & CONDITIONS.

Right To Withdraw The RFS And To Reject Any Bid

27. This RFS may be withdrawn or cancelled by APS, NEW CANTT, ALLAHABAD at any time without assigning any reasons thereof. APS, NEW CANTT, ALLAHABAD further reserves the right, at its complete discretion, to reject any or all of the Bids without assigning any reasons whatsoever and without incurring any liability on any account.
28. The APS, NEW CANTT, ALLAHABAD reserve the right to interpret the Bid submitted by the Bidder in accordance with the provisions of the RFS and makes its own judgment regarding the interpretation of the same. In this regard the APS, NEW CANTT, ALLAHABAD shall have no liability towards any Bidder and no Bidder shall have any recourse to the APS, NEW CANTT, ALLAHABAD with respect to the selection process. APS, NEW CANTT, ALLAHABAD shall evaluate the Bids using the evaluation process at its sole discretion. APS, NEW CANTT, ALLAHABAD decision in this regard shall be final and binding on the Bidders.
29. APS, NEW CANTT, ALLAHABAD reserves its right to vary, modify, revise, amend or change any of the terms and conditions of the Bid before submission. The decision regarding acceptance or rejection of bid by APS, NEW CANTT, ALLAHABAD will be final.
30. **Zero Deviation.** This is a ZERO Deviation Bidding Process. Bidder is to ensure compliance of all provisions of the Bid Document and submit their Bid accordingly. Tenders with any deviation to the bid conditions shall be liable for rejection.
31. **Examination Of Bid Document.**
- (a) The Bidder is required to carefully examine the Technical Specification, and Conditions of Contract, and other details relating to supplies as given in the Bid document.
- (b) The Bidder shall be deemed to have examined the bid document including the agreement/contract, to have obtained information on all matters whatsoever that might affect to execute the project activity and to have satisfied himself as to the adequacy of his bid. The bidder shall be deemed to have known the scope, nature and magnitude of the supplies and the requirements of material and labour involved etc. and as to all supplies he has to complete in accordance with the Bid document.


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(c) Bidder is advised to submit the bid on the basis of conditions stipulated in the Bid Document. Bidder's standard terms and conditions if any will not be considered. The cancellation / alteration / amendment / modification in Bid documents shall not be accepted by APS, NEW CANTT, ALLAHABAD

(d) Bid not submitted as per the instructions to bidders is liable to be rejected. Bid shall confirm in all respects with requirements and conditions referred in this bid document.

32. **Scope Of Work.** The scope of work for the bidder include complete design, engineering, manufacture, supply, storage, civil work, erection, testing & commissioning of the grid connected rooftop solar PV project including operation and maintenance (O&M) of the project for a period of Five years (5 Years) after commissioning.


33. **Project Cost.**

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

(b) The project cost quoted is on lump sum turnkey basis and the bidder is responsible for the total Scope of Work described above.

(c) The project cost shall remain firm and fixed and shall be binding on the Successful Bidder till completion of work irrespective of his actual cost of execution of the project. No escalation will be granted on any reason whatsoever. 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 whatsoever.

(d) The project cost shall be inclusive of all duties and taxes, insurance etc. The prices quoted by the firm shall be complete in all respect and no price variation /adjustment shall be payable


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34. The operation & maintenance of Solar Photovoltaic Power Plant would include wear, tear, overhauling, machine breakdown, insurance, and replacement of defective modules, inverters / Power Conditioning Unit (PCU), spares, consumables & other parts for a period of 5 years free of cost.

35. The project cost shall be specified in sanction letter based on Successful Bidder's quote for each package. The project cost shall be in accordance with all terms, conditions, specifications and other conditions of the Contract as accepted by the APS, NEW CANTT, ALLAHABAD and incorporated into the sanction letter.

36. The Bidder shall complete the Price Bid for each package as furnished in the RFS Documents.

37. **Insurance.**

(a) 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. The bidder shall also take appropriate insurance during O&M period.

(b) The Bidder shall also take insurance for Third Party Liability covering loss of human life, engineers and workmen 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.

38. **Warrantees And Guarantees.**

(a) The Bidder shall warrant that the goods supplied under this contract are new, unused, of the most recent or latest technology and incorporate all recent improvements in design and materials. The bidder shall provide system warrantee covering the rectification of any and all defects in the design of equipment, materials and workmanship including spare parts for a period of 5 years from the date of commissioning.

(b) The successful bidder has to transfer all the Guarantees /Warrantees of the different components to APS, NEW CANTT, ALLAHABAD.

39. **Type And Quality Of Materials And Workmanship**



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(a) The Design, engineering, manufacture, supply, installation, testing and performance of the equipment shall be in accordance with latest appropriate IEC/Indian Standards as detailed in the Section- III (Technical specifications) of the bid document. Where appropriate Indian Standards and Codes are not available, other suitable standards and codes as approved by the MNRE shall be used.

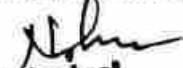
(b) The specifications of the components should meet the technical specifications mention in Section III.

(c) Any supplies which have not been specifically mentioned in this Contract but which are necessary for the design, engineering, manufacture, supply & performance or completeness of the project shall be provided by the Bidder without any extra cost and within the time schedule for efficient and smooth operation and maintenance of the SPV plant.

40. **Operation & Maintenance (O&M).** The bidder shall be responsible for Operation and Maintenance of the Roof top Solar PV system for a period of 5 years, during which APS, NEW CANTT, ALLAHABAD will monitor the project for effective performance in line with conditions specified elsewhere in the bid document. During this period, the bidder shall be responsible for supply of all spare parts within a period of three days free of cost as required from time to time for scheduled and preventive maintenance, major overhauling of the plant, replacement of defective modules, Inverters, PCU's etc and maintaining log sheets for operation detail, deployment of staff for continuous operations and qualified engineer for supervision of O&M work, complaint logging & its attending.

41. **Zero Export and Grid Connectivity.** Zero export and grid connectivity of the roof top solar PV system under this scheme would be the responsibility of the Bidder in accordance with the prevailing guidelines of APS, NEW CANTT, ALLAHABAD and / or CEA (if available by the time of implementation). However, the entire responsibility of erection lies with bidder only. APS, NEW CANTT, ALLAHABAD will fulfill all legal and financial requirement as per zero export policy of State.

42. **Plant Performance Evaluation.** The successful bidder shall be required to meet minimum guaranteed generation with Performance Ratio (PR) at the time of commissioning and related Capacity Utilization Factor (CUF) as per the GHI levels of the location during the O&M period. PR should be shown minimum of 75% at the time of inspection for initial commissioning acceptance to qualify for release of payment. Minimum CUF of 19% should be maintained for a period of 5years. The bidder should send the periodic plant output details to APS, NEW CANTT, ALLAHABAD for ensuring the CUF. The PR will be measured at Inverter output level during peak radiation conditions.


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43. **Progress Report** the bidder shall submit the progress report monthly to APS, NEW CANTT, ALLAHABAD in prescribed Performa. APS, NEW CANTT, ALLAHABAD will have the right to depute his/their representatives to ascertain the progress of contract at the premises of works of the bidder.
44. **Project Inspection.**
- (a) The project will be monitored by APS, NEW CANTT, ALLAHABAD and the projects will be inspected for quality at any time during commissioning or after the completion of the project by authorized agency/ experts.
- (b) APS, NEW CANTT, ALLAHABAD reserves the right to do sample inspection checks for the projects commissioned by the Bidder.
- (c) APS, NEW CANTT, ALLAHABAD may also depute a technical person(s) from its list of empanelled experts for inspection, third party verification, monitoring of system installed to oversee, the implementation as per required standards and also to visit the manufactures facilities to check the quality of products as well as to visit the system integrators to assess their technical capabilities as and when required.
45. **Applicable Law.** The Contract shall be interpreted in accordance with the directions of the Chairman, APS, New Cantt, Allahabad.
46. **Settlement of Dispute**
- (a) If any dispute of any kind whatsoever arises between APS, NEW CANTT, ALLAHABAD and Successful bidder in connection with or arising out of the contract including without prejudice to the generality of the foregoing, any question regarding the existence, validity or termination, the parties shall seek to resolve any such dispute or difference by mutual consent.
- (b) If the parties fail to resolve, such a dispute or difference by mutual consent, within 45 days of its arising, then the dispute shall be referred by either party by giving notice to the other party in writing of its intention to refer to arbitration as hereafter provided regarding matter under dispute. No arbitration proceedings will commence unless such notice is given.
- (c) Both parties agree that Decision of the Chairman, APS, New Cantt, Allahabad will be binding to both parties (ie APS, New Cantt, Allahabad and L-1 Bidder). Both party agree that matter will not be referred to any court of law.

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47. In case The Contractor Is A Public-Sector Enterprise Or A Government Department. In case the Contractor is a Public Sector Enterprise or a Government Department, the dispute shall be referred for resolution in Permanent Machinery for Arbitration (PMA) of the Department of Public Enterprise, Government of India. Such dispute or difference shall be referred by either party for Arbitration to the sole Arbitrator in the Department of Public Enterprises to be nominated by the Secretary to the Government of India in-charge of the Department of Public Enterprises. The award of the Arbitrator shall be binding upon the parties to the dispute, provided, however, any party aggrieved by such award may make a further reference for setting aside or revision of the award to the Law Secretary, Department of Legal Affairs, Ministry of Law & Justice, Government of India. Upon such reference, the dispute shall be decided by the Law Secretary or the Special Secretary / Additional Secretary, when so authorized by the Law Secretary, whose decision shall bind the Parties finally and conclusive. The Parties to the dispute will share equally the cost of arbitration as intimated by the Arbitrator.


48. Force Majeure.

(a) Notwithstanding the provisions of clauses contained in this RFS document, the contractor shall not be liable of termination of contract; if he is unable to fulfill his obligation under this contract due to force majeure conditions.

(b) For purpose of this clause, "Force Majeure" means an event beyond the control of the contractor and not involving the contractor's fault or negligence and not foreseeable, either in its sovereign or contractual capacity. Such events may include but are not restricted to Acts of God, wars or revolutions, fires, floods, epidemics, quarantine restrictions and fright embargoes etc. Whether a "Force majeure" situation exists or not, shall be decided by APS, NEW CANTT, ALLAHABAD and its decision shall be final and binding on the contractor and all other concerned.

(c) In the event that the contractor is not able to perform his obligations under this contract on account of force majeure, he will be relieved of his obligations during the force majeure period. In the event that such force majeure extends beyond six months, APS, NEW CANTT, ALLAHABAD has the right to terminate the contract in which case, the security deposit shall be refunded to him.

(d) If a force majeure situation arises, the contractor shall notify APS, NEW CANTT, ALLAHABAD in writing promptly, not later than 14 days from the date such situation arises. The contractor shall notify APS, NEW CANTT, ALLAHABAD not later than 3 days of cessation


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of force majeure conditions. After examining the cases, APS, NEW CANTT, ALLAHABAD shall decide and grant suitable additional time for the completion of the work, if required.

49. **Language.** All documents, drawings, instructions, design data, calculations, operation, maintenance and safety manuals, reports, labels and any other data shall be in English Language. The contract agreement and all correspondence between the APS, NEW CANTT, ALLAHABAD and the bidder shall be in English language.

50. **Other Conditions.**

(a) The Successful bidder shall not transfer, assign or sublet the work under this contract or any substantial part thereof to any other party without the prior consent of APS, NEW CANTT, ALLAHABAD in writing.

(b) The Successful bidder shall not display the photographs of the work and not take advantage through publicity of the work without written permission of APS, NEW CANTT, ALLAHABAD

(c) The Successful bidder shall not make any other use of any of the documents or information of this contract, except for the purposes of performing the contract.

51. **Successors and Assigns.** In case the APS, NEW CANTT, ALLAHABAD or Successful bidder may undergo any merger or amalgamation or a scheme of arrangement or similar re-organization & this contract is assigned to any entity (ies) partly or wholly, the contract shall be binding mutatis mutandis upon the successor entities & shall continue to remain valid with respect to obligation of the successor entities.

52. **Severability.** It is stated that each paragraph, clause, sub-clause, schedule or annexure of this contract shall be deemed severable & in the event of the unenforceability of any paragraph, clause sub-clause, schedule or the remaining part of the paragraph, clause, sub-clause, schedule annexure & rest of the contract shall continue to be in full force & effect.

53. **Counterparts.** This contract may be executed in one or more counterparts, each of which shall be deemed an original & all of which collectively shall be deemed one of the same instrument.

54. **Right & Remedies Under The Contract Only For The Parties.** This contract is not intended & shall not be construed to confer on any person other than the ARMYPUBLIC SCHOOL & Successful bidder hereto, any rights and / or remedies herein.

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55. **Correspondence.** Bidder requiring any clarification on bid documents may contact in writing or by Fax /E Mail.

Sl. No	Name	Contact Number	Email id
1.	Principal APS, New Cantt, Allahabad	0532-2420772	armyschoolalld@gmail.com

56. **Bid Evaluation.** The evaluation process comprises the following four steps:

Step I- Responsiveness check of Techno Commercial Bid

Step II- Evaluation of Bidder's fulfillment of Eligibility - Criteria per Clause 23, 24 and 25 of the document

Step III- Evaluation of Price Bid

Step IV - Successful Bidders(s) selection

57. **Responsiveness Check Of Techno Commercial Bid.** The Techno Commercial Bid submitted by Bidders shall be scrutinized to establish responsiveness to the requirements laid down in the RFS. Any of the following may cause the Bid to be considered "Non-responsive", at the sole discretion of APS, NEW CANTT, ALLAHABAD.

(a) Bids that are incomplete, i.e. not accompanied by any of the applicable formats inter alia covering letter, power of attorney supported by a board resolution, applicable undertakings, format for disclosure, valid Bid Security, etc.


(b) Bid not signed by authorized signatory and /or stamped in the manner indicated in this RFS.

(c) Material inconsistencies in the information /documents submitted by the Bidder, affecting the Eligibility Criteria Information not submitted in the formats specified in this RFS.

(d) Bid being conditional in nature / Bid not received by the Bid Deadline / Bid having Conflict of Interest.

(e) More than one Member of a Bidding Company using the credentials of the same Parent Company /Affiliate. Bidder delaying in submission of additional information or clarifications sought by ARMY PUBLIC SCHOOL New Cantt Allahabad as applicable.

(f) Bidder makes any misrepresentation.


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(g) Each Bid shall be checked for compliance with the submission requirements set forth in this RFS before the evaluation of Bidder's fulfillment of Eligibility Criteria is taken up. Clause 3.3 shall be used to check whether each Bidder meets the stipulated requirement.

58. **Clarification of Bids.**

(a) The APS, New Cantt, Allahabad may at its discretion, ask the Bidder for a clarification of its bid. In case of erroneous/non-submission of documents related to/identified in Clause no.4 of ITB required to be submitted by the Bidder as per the provisions of the Bidding Documents, the APS, NEW CANTT, ALLAHABAD may give the Bidder not more than 7 working day's notice to rectify/furnish such documents, failing which the bid shall be rejected. The request for clarification and the response shall be in writing, and no change in the price or substance of the bid shall be sought, offered or permitted.


(b) No Bidder shall contact the APS, New Cantt, Allahabad on any matter relating to its bid from the time of the bidding opening to the time the contract is awarded. If the Bidder wishes to bring additional information to the notice of the APS, NEW CANTT, ALLAHABAD, he should do so in writing.

(c) Any effort by the Bidder to influence the APS, New Cantt, Allahabad in the APS, New Cantt, Allahabad 's bid evaluation, bid comparison or contract award decisions may result in the rejection of the Bidder's bid.

59. **Preliminary Examination.**

(a) APS, New Cantt, Allahabad will examine the Bids to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed and stamped and whether the Bids are otherwise in order.

(b) Arithmetical errors will be rectified on the following basis. If there is a discrepancy between the Project cost, material Cost and Labour cost, the Material cost & Labour Cost shall prevail and the project cost shall be corrected. If there is a discrepancy between words and figures, the amount written in words will prevail.


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60. **Evaluation of Bidder's Fulfillment Of Eligibility Criteria.** Evaluation of Bidder's Eligibility will be carried out based on the information furnished by the Bidder as per the prescribed Formats and related documentary evidence in support of meeting the Eligibility Criteria as specified in Clause 3.3. Non-availability of information and related documentary evidence for the satisfaction of Eligibility Criteria may cause the Bid to be nonresponsive.

61. **Evaluation of Price Bid.**

(a) Price Bid of the Qualified Bidders shall be opened in presence of the representatives of such Qualified Bidders, who wish to be present, on a date as may be intimated by APS, NEW CANTT, ALLAHABAD to the Bidders through APS, New Cantt, Allahabad official mail id. The evaluation of Price Bid shall be carried out based on the information furnished in Price Bid. The Price Bid submitted by the Bidders shall be scrutinized to ensure conformity with the RFS. Any Bid not meeting any of the requirements of this RFS may cause the Bid to be considered "Nonresponsive" at the sole decision of the APS, New Cantt, Allahabad. The Price bids for each package shall be evaluated separately as follows:

(b) The Price bids for each package shall be evaluated separately on the quoted project cost basis

62. **Increase/Decrease of Bidder Allocated Capacity.**

(a) APS, NEW CANTT, ALLAHABAD reserves the right to increase/decrease the Bidder Allocated Capacity at its sole discretion.

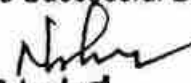
63. **Notification To Successful Bidders.** The name of Successful Bidder shall be notified individually through letter of allocation.

64. **Project Allocation And Sanction.**

(a) The Bidders, in their own interest are advised to make a preliminary survey of the suitability of building provided by APS, NEW CANTT, ALLAHABAD in Annexure - I for achieving the indicated capacity for each package which they intend to Bid.

(b) APS, NEW CANTT, ALLAHABAD shall identify alternate building upon receiving a formal request from the Successful Bidder(s). APS, NEW CANTT, ALLAHABAD at its own discretion may choose to provide alternate locations.

(c) However, the final list of building and the capacities of packages shall be finalized before the issue of LOA and such capacities shall be binding on the Successful Bidders (s)


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(d) The Successful Bidders selected as described in above shall be issued Letter of Allocation (LOA) indicating the package along with the capacity

(e) If the Bidder fails to commission the project within specified time, penalty on per day basis calculated 2% of total cost of the project.

65. **Commissioning & Payment Schedule.**

(a) The Successful Bidder(s) shall complete the commissioning of the entire Work within 90 Days or 3 months of Issue of LoA which shall be considered the ***Scheduled Commercial Operation Date (SCOD) or Scheduled date of Commercial Operations***"

(b) The O&M period shall commence from the commissioning date of the Work and shall be applicable for a period of 5 years from commissioning date of the entire work,

(c) The Successful Bidder(s) shall be eligible for payment at the Quoted Project cost for the capacity the Work as below:-

(i) **Upon delivery of panels and structure- 40% of quoted project cost + EMD amount**

(ii) **Upon completion of panel mounting work – 30% Quoted Project Cost**


(iii) **Upon successful Commissioning – 20% of Quoted Project Cost after verification by the board of officers detailed by the Chairman, APS, New Cantt, Allahabad.**

(iv) **After defect liability period of 1 year of completion of the project- 10%**

66. **Other Conditions.** Following deposits, in the form of bank drafts, payable at Allahabad, in the name of "Army Public School, New Cantt, Allahabad" shall be payable alongwith tender document.

(a) A non refundable tender fee of Rs 500/-.

(b) A refundable Ernest Money Deposit (EMD) of 2.5% value of tender amount. The EMD shall be returned back to unsuccessful bidders within 45 days of opening of tender.


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66(a) The bid should be submitted in two parts:

1. Part-1 in a sealed envelope over scribing TECHNICAL BID should contain following:
 - (a) Draft of the tender fee
 - (b) Draft of the EMD
 - (c) Tender document duly stamped and signed on each page, except format 1 and 2 of Section V.

2. Part-2 in a sealed envelope describing FINANCIAL BID should contain following:
 - (a) Covering letter in Format 1 of Section V.
 - (b) Financial bid in Format 2 of Section V.

The two envelopes clearly mention "BID FOR 50KWp SOLAR POWER PLANT, APS NEW CANTT, ALLAHABAD along with the name of the bidder and tender details such as tender number and date of publish.

Successful bidder(s) is responsible for Erection, Testing, Commissioning and O&M of the project. APS shall provide the necessary approvals/ consents/ clearances after receiving a formal request from the successful bidder regarding the readiness of the solar rooftop system.

Statutory Variations.


During or beyond the date of schedule contract agreement period, any increase in statutory levies shall be to the account of bidder. However, any decrease in statutory levies after the schedule contract period of the agreement shall be taken in to consideration to the advantage of the APS, New Cantt, Allahabad only.

67. **Eligibility of System.** Standalone system is not allowed under this scheme. The system should be grid connected.

68. **Requirement of Approvals On Makes of the Components.** The modules should be manufactured in India only. Rest of the components can be procured from any source. However, these items should meet the Technical specification and standards mentioned in RFS.

69. **Penalty For Delay In Project Implementation.**

(a) APS, NEW CANTT, ALLAHABAD will issue the LoA (s) for the Package(s) indicating the Capacities & payment terms which will be disbursed in line with the provisions of the RFS


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 ...

document. The Bidder shall complete the site survey, design, engineering, manufacture, supply, storage, civil work, erection, testing & commissioning of project within 120 days or 4 months from the date of issue of allocation letter.

(b) If the bidder fails to commission the allocated work within 90 days or 3 months from date of issue of allocation letter, Penalty on per day basis calculated 2% of total cost of project. However, this penalty shall not be applicable if the delay is due to failure on part of APS in providing space, permissions or approval and right of passage for the specific purpose of installation, commissioning and testing of solar power plant.

70. Time of Completion of Allocated Capacity.

(a) Project completion shall be 90 days or 3 months from the date of issue of allocation letter and shall be Considered the Scheduled Commercial Operation Date (SCOD). Failure or non-compliance of same shall lead to forfeiture in proportion to the capacity not commissioned.

(b) The period of construction given in Time Schedule includes the time required for mobilization as well as testing, rectifications if any, retesting and completion in all respects to the entire satisfaction of the Engineer-in-Charge.

(c) A joint programme of execution of the Work will be prepared by the Engineer-in-Charge or its representative nominated for the purpose and Successful bidders based on priority requirement of this project. This programme will take into account the time of completion in 90 days or 3 months. Above and the time allowed for the priority Works by the Engineer-in-Charge.

(d) Monthly/Weekly implementation programme will be drawn up by the Engineer-in-Charge jointly with the Successful bidder, based on availability of Work fronts. Successful bidder shall scrupulously adhere to these targets /programs by deploying adequate personnel, tools and tackles and he shall also supply himself all materials of his scope of supply in good time to achieve the targets/programs. In all matters concerning the extent of targets set out in the weekly and monthly programs and the degree of achievements, the decision of the Engineer-in-Charge will be final and binding.

71. Deductions From The Contract Price. All costs, damages or expenses which APS, NEW CANTT, ALLAHABAD may have paid or incurred, which under the provisions of the contract,

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the successful bidder is liable/will be liable, will be claimed by APS, NEW CANTT, ALLAHABAD. all such claims shall be billed by APS, NEW CANTT, ALLAHABAD to the contractor within 15 (fifteen) days of the receipt of the payment request and if not paid by the successful bidder within the said period, APS, NEW CANTT, ALLAHABAD may, then, deduct the amount from any moneys due i.e., bid security or becoming due to the contractor or successful bidder under the contract or may be recovered by actions of law or otherwise, if the successful bidder fails to satisfy the APS, NEW CANTT, ALLAHABAD of such claims.


72. **Corrupt or Fraudulent Practices.** The APS, NEW CANTT, ALLAHABAD requires that Successful Bidders/ Contractors should follow the highest standard of ethics during the execution of contract. In pursuance of this policy, the APS, NEW CANTT, ALLAHABAD defines for the purposes of this provision, the terms set forth as follows :

(a) "corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the bid process or in contract execution; and

(b) "fraudulent practice" means a misrepresentation of facts in order to influence a bid process or the execution of a contract to the detriment of the APS, NEW CANTT, ALLAHABAD /Govt scheme, and includes collusive practice among Bidders (prior to or after Bid submission) designed to establish Bid prices at artificial non-competitive levels and to deprive the APS, NEW CANTT, ALLAHABAD of the benefits of free and open competition;

(c) Will declare a firm ineligible/debarred, either indefinitely or for a specific period of time, a GOVT contract if at any time it is found that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, a Government/ APS, NEW CANTT, ALLAHABAD schemes.

73. **Debarred From Participating In APS, NEW CANTT, ALLAHABAD's Roof Top Tender.** APS, NEW CANTT, ALLAHABAD reserves the right to carry out the performance review of each Bidder from the time of submission of Bid onwards. In case it is observed that a bidder has not fulfilled its obligations in meeting the various timelines envisaged, in addition to the other provisions of the RFS, such Bidders may be debarred from participating in APS, NEW CANTT, ALLAHABAD's any future tender for a period as decided by the competent authority of APS, NEW CANTT, ALLAHABAD.


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PART -V : FORMATS FOR SUBMITTING RFS & STRUCTURE LAYOUT DRAWING

Format-1 (To be submitted in 2nd envelop over scribing "FINANCIAL BID")

Covering Letter

(The covering letter should be on the Letter Head of the Bidding Company) Ref No 5077/Solar

Date 2022 :From (Insert name and address of Bidding Company)

Tel. : Fax

E-mail address#

To,

The Principal,

APS, NEW CANTT, ALLAHABAD,

Subject : Bid for "Implementation of Grid connected Roof Top Solar PV System Scheme for selected packages in APS, NEW CANTT, ALLAHABAD "

Dear Ma'am,

1. We, the undersigned....[insert name of the 'Bidder'] having read, examined and understood in detail the RFS Document for Implementation of Grid connected Roof Top Solar PV System Scheme for Selected packages in APS, NEW CANTT, ALLAHABAD hereby submit our Bid comprising of Price Bid and Techno Commercial Bid. We confirm that neither we nor any of our Parent Company / Affiliate/Ultimate Parent Company has submitted Bid other than this Bid directly or indirectly in response to the aforesaid RFS.

2. We give our unconditional acceptance to the RFS, dated.....and RFS Documents attached there to, issued by APS, NEW CANTT, ALLAHABAD, as amended. This shall also be construed as a token of our acceptance to the RFS Documents including all its amendments and clarifications. We shall ensure that we execute such RFS Documents as per the provisions of the RFS and all provisions of such RFS Documents shall be binding on us.

Thanking you,

We remain,

Yours faithfully,

Name, Designation and Signature of Authorized Person in whose name Power of Attorney/Board Resolution as per Clause.....is issued

Format 2

Financial Bid (To be submitted in second sealed envelope over scribing "FINANCIAL BID")

Package	Capacity KWP	Material cost (Rs/kWp)	Labour cost (Including erection commissioning & O&M for 5 years)	Project cost *(Rs/kWp) (Material cost + Labour cost)
Package 1	50			

— All the costs shall be inclusive of all applicable taxes & duties.

— The quoted project cost shall be inclusive of O&M for a 5 Year period from C.O.D

Note:

1. Unit Rate (Rs/Wp) shall not exceed Rs 48/- Wp
2. Arithmetical errors will be rectified on the following basis. If there is a discrepancy between the Project cost, material Cost and Labour cost , the Material cost & Labour Cost shall prevail and the project cost shall be corrected. If there is a discrepancy between words and figures, the amount written in words will prevail

Yours faithfully

Date:

Signature:.....

Place:

Printed Name.....

Business Address: Designation:.....

Country of Incorporation: (Common Seal).....

(State or Province to be indicated)

Format -3

FINANCIAL ELIGIBILITY CRITERIA REQUIREMENT (AS PER CLAUSE 25)
(To be submitted on the letterhead of Bidding Company / Lead Member/)

To,

The Principal, Army Public School, New Cantt, Allahabad ✓

Dear Sir/ Madam,

Subject : Bid for Implementation of Grid connected Roof Top Solar PV System scheme for selected packages in APS, NEW CANTT, ALLAHABAD

In response to the RFS No:dated: ee submit our Bid(s) for the total capacity of50KWP and submit details of our Financial Eligibility Criteria.

We certify that the Financially Evaluated Entity (ies) had an Annual Turnover as follows:

Minimum Annual turnover of Rupees 1.0 Cores in last 2 financial years preceding the Bid Deadline. We are submitting following documents duly verified by Chartered Accountant:

GSTR-1 duly certified by practicing chartered accountant FY 2021-22

GSTR-1 duly certified by practicing chartered accountant FY 2020-21

GSTR-3B duly certified by practicing chartered accountant FY 2021-22

GSTR-3B duly certified by practicing chartered accountant FY 2020-2021

Yours faithfully,

Name, Designation and Signature of Authorized Person in whose name Power of Attorney/Board Resolution as per Clause.....is issued.

Format -4**TECHNICAL ELIGIBILITY CRITERIA REQUIREMENT (AS PER CLAUSE 25)**

(To be submitted on the letterhead of Bidding Company / Lead Member/)

To,

The Principal, Army Public School, New Cantt, Allahabad

Dear Sir/ Madam,

Subject : Bid for Implementation of Grid connected Roof Top Solar PV System scheme for selected packages in APS, NEW CANTT, ALLAHABAD

In response to the RFS No: dated: We submit our Bid(s) for the total capacity of 50KWP and submit details of our Technical Eligibility Criteria :

We hereby submit following completion certificates provided by the owner(s) of the solar power plant(s) installed by (name of the bidder) to conform the technical eligibility criteria:

1. Completion certificate of 50 (or more) kW Solar Power Plant installed at (Name and address of owner)
2. Following completion certificates of cumulative 50 kWp capacity of solar power plants:
(This part is optional)

We hereby submit following certificates to demonstrate our technical knowledge in the field of engineering/ solar power generation/ energy conservation.

Yours faithfully,

Name, Designation and Signature of Authorized Person in whose name Power of Attorney/Board Resolution as per Clause.....is issued.