

OFFICE OF THE PRINCIPAL
D.R. NAYAPALLI COLLEGE, BHUBANESWAR

Phone no. – 0674-2973191 e-mail- drnc22@yahoo.com Web- www.drnayapallicollege.in

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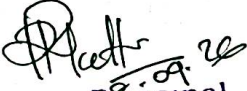
SPECIFICATIONS OF ROOFTOP SOLAR POWER SYSTEM

Proposed Make: Tata Power / Adani requirements.

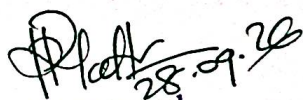
Sl. No.	Particular	Specification
01	Type of Project	1. Grid-connected rooftop solar PV system – 10 kWp 2. Off-grid/standalone solar PV system – 2 kWp
02	Solar PV Module	Solar PV modules shall be of Tata Power Solar or Adani Solar make only. The modules shall be high-efficiency crystalline silicon technology, preferably N-type TOPCon, and shall comply with all applicable MNRE/ALMM, BIS and IEC requirements. The bidder shall clearly mention the exact make, model, wattage and technical specifications of the modules in the quotation.
03	Module Capacity	The bidder shall specify the individual module wattage, number of modules and total installed capacity.
04	Module Warranty	Minimum applicable manufacturer's product and performance warranty. Warranty documents shall be submitted along with the quotation.
05	Mounting Structure	The rooftop solar PV mounting structure shall be of heavy-duty hot-dip galvanized steel / corrosion-resistant material , designed specifically for the college rooftop and capable of withstanding the applicable site-specific wind load . The structure shall be designed and installed based on proper structural calculations. Ballasted/non-penetrating mounting shall be preferred wherever technically feasible , without compromising structural stability or roof safety. Stainless-steel fasteners and components shall be used Ballast Structure for RSPS
06	Structural Safety	The successful bidder shall inspect the existing roof and submit a structural adequacy/load assessment and mounting design before installation. The system shall not adversely affect the structural safety or waterproofing of the building.
07	Wind Load	Mounting structure shall be designed for the applicable site-specific design wind speed and relevant Indian Standards. Structural calculations shall be submitted by the bidder.
08	Mounting Arrangement	Ballasted/non-penetrating mounting system may be adopted wherever technically suitable. Any roof penetration shall require prior approval and proper waterproofing.
09	Inverter	Grid-connected system shall use a suitable grid-tied inverter of adequate capacity, complying with applicable BIS/IEC and DISCOM requirements. For the off-grid system, a suitable inverter/PCU with battery bank shall be provided.


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10	Battery	For the off-grid system, UTL Solar battery storage of adequate capacity shall be provided. Battery makes, type, capacity, expected life and warranty shall be clearly specified by the bidder.
11	Protection System	DC/AC protection, isolators, fuses/MCBs/MCCBs, surge protection devices (SPDs), lightning protection and other required safety devices shall be provided.
12	Earthing	Proper module structure earthing, equipment earthing and system earthing shall be provided as per applicable standards.
13	Cables & Accessories	All DC solar cables and AC power cables shall be of reputed make such as Polycab, Havells, or equivalent, conforming to applicable BIS/IEC standards and suitable for solar PV applications. The cables shall be UV-resistant, weather-resistant and suitable for outdoor use. The bidder shall clearly mention the make, size, type and technical specifications of all cables in the quotation.
14	Monitoring System	Suitable generation monitoring/display facility shall be provided for recording solar generation and system performance.
15	Grid Connectivity	The grid-connected system shall comply with the requirements of the concerned electricity distribution utility and applicable OERC/MNRE provisions, including metering/net-metering requirements wherever applicable.
16	Expected Life	Solar PV modules: approximately 25 years or as per manufacturer's warranty; other components as per manufacturer's specified life/warranty.
17	Expected Generation	The bidder shall furnish the estimated annual electricity generation (kWh/year) based on the proposed system capacity and site conditions.
18	CO ₂ Reduction	Expected annual CO ₂ emission reduction shall be calculated by the bidder based on the estimated annual generation and applicable emission factor.
19	Installation & Commissioning	Supply, transportation, installation, testing and commissioning shall be the responsibility of the successful bidder.
20	Work Schedule	Installation and commissioning shall be completed within 15–20 days from the date of issue of the work order, subject to statutory/DISCOM approvals where applicable.
21	Comprehensive Maintenance	Comprehensive maintenance for 5 years, including inspection, cleaning, preventive maintenance, corrective maintenance and replacement of defective components covered under warranty.
22	Maintenance Schedule	Periodic inspection of modules, mounting structure, cables, junction boxes, inverter/PCU, earthing, SPDs, lightning protection and other system components shall be carried out as per the manufacturer's maintenance schedule.
23	Roof Waterproofing	The bidder shall ensure that installation does not damage the existing roof waterproofing. Any damage caused during installation shall be rectified by the bidder at no additional cost.


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24	Documentation	The successful bidder shall submit as-built drawings, single-line diagram, equipment datasheets, warranties, test/commissioning reports, structural drawings and operation & maintenance manuals.
25	Performance Responsibility	The bidder shall be responsible for proper functioning of the system and shall attend complaints/service requests within the stipulated response time during the comprehensive maintenance period.
26	Standards & Compliance	All equipment and installation shall comply with applicable MNRE, BIS/IEC, CEA, OERC and concerned DISCOM requirements, as applicable.
27	Payment Condition	1. No advance payment shall be made to the successful bidder/firm. 2. 85% of the total bill value shall be paid to the successful bidder after satisfactory supply, installation, testing of the solar power system at the college. 3. The remaining 15% of the total bill value shall be paid only after successful completion of net-metering/grid connectivity and commissioning, including completion of all required formalities with the concerned DISCOM. 4. Payment shall be released subject to submission of all required documents, invoices, test/commissioning reports and satisfactory completion of the respective stages of work.


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