

RAJINDRA GYMKHANA & MAHENDRA CLUB, PATIALA

DETAILED NOTICE INVITING TENDER DOCUMENT (DNIT)

Supply, Installation, Testing and Commissioning of 110 kW Solar Power Plant on Turnkey Basis (Solar Car Port)

Tender No.	RGMC/SOLAR/2026/158	Date	15 th Sept 2026
Project Site	Parking area of Rajindra Gymkhana & Mahendra Club, Patiala	Tender (Bid) Validity	30 days
Project Capacity	110 kW (variation $\pm 10\%$ as per space & finances)	Completion Period	60 days from Work Order / LOA
Last date & time of submission of Bids: 24 th Sept 2026, 6:00 PM		Date & time of opening of Bids: 25 th Sept 2026, 5:00 PM	

1. PROJECT OVERVIEW & KEY PARAMETERS

Particular	Requirement
Capacity	110 kW
Structure Type	Solar Car Port, Twin Pillar Rows (North + South)
Overall Footprint	About 200 ft
Structural Layout	3 standard tables: Table 1 (3 bays, 4 positions), Table 2 (3 bays, 4 positions), Table 3 (3 bays, 4 positions)
Expansion Joints	2 Nos., about 3 ft each
Positions	12 (4 + 4 + 4)
Pillars / Foundations	24 Nos. (12 North + 12 South) / 24 Nos. RCC Pedestal Foundations
Total Modules	About 200 Nos.

Note: Conceptual layout plan is attached for reference. However, the detailed design/drawings conforming to relevant standards/specifications shall be evolved by the vendor and got approved from RGMC authorities prior to execution.

2. SOLAR PV MODULE SPECIFICATIONS

Parameter	Minimum Requirement
Cell Technology	N-Type TOPCon, Half-Cut
Module Type	Bifacial Dual-Glass (Glass-to-Glass), Framed
Rated Power Output	Minimum 590 Wp or higher, 144 Cell Configuration
Module Efficiency	Minimum 22.5% to 22.8% under STC
Bifaciality Factor	80% ($\pm 5\%$)
Compliance & Approvals	MNRE ALMM List 1 Mandatory; IEC 61215 / IEC 61730 Certified
Warranty	Minimum 12-year Product Warranty and 30-year Linear Performance Warranty
Approved Brands	Adani Solar / Tata Power Solar
Performance Guarantee	Minimum efficiency/guarantee of 98.4% with 30-year warranty

Expected Generation	Minimum 1400 kWh/kWp/year average
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3. ON-GRID SOLAR INVERTER SPECIFICATIONS

Parameter	Requirement
Rated Capacity	110 kW, Three-Phase
Maximum DC Voltage	1100 V DC
Efficiency	Minimum 98.5%
MPPT / Inputs	Multi-MPPT, minimum 10 to 12 MPPTs, supporting high-current inputs $\geq 30A$ per MPPT
Enclosure & Safety	IP66; integrated DC isolator; Type II AC/DC SPD; AFCI 2.0
Monitoring	RS485 / WiFi / Ethernet remote monitoring with smart I-V curve diagnosis
Approved Brands	Sungrow (SG125CX-P2) / Solis (Solis-125K-5G) / GoodWe / Growatt Cable Brands: Polycab / Havells Copper cable of appropriate size

4. STRUCTURAL & CIVIL TECHNICAL SPECIFICATIONS

Item	Requirement
Structural Design & Approval	Vendor shall prepare structural design and detailed drawings through an approved Structural Engineer and submit them to RGMC authorities for approval before execution. The Ceiling weight of Total HDG steel structure, rails including clamps, Anchor bolts, bolts and nuts and all other fixing accessories etc. be quoted in the price column. The payment shall be made for the designed weights finalised on placement of order with the ceiling of weight quoted by the bidder. Any increase in weights beyond ceiling quoted weights shall be borne by the bidder. Similarly, the detailed foundation design conforming to relevant standards shall be submitted on placement of order and got approved from RGMC. The payment for foundation shall be made as quoted in the price schedule.
Structure Type	Twin Pillar Hot-Dip Galvanized Car Port Mounting Structure, North + South slope.
Grid / Dimensions	Overall footprint about 200 ft, 3-table arrangement.
Expansion Joints	2 Nos., 3 ft each, between structural tables for thermal expansion.
Main Columns / Pillars	24 Nos. (12 North + 12 South).
Table Configuration	3 standard tables.
Wind Resistance	Designed for basic wind speeds up to 150 km/h as per IS 875 (Part 3).
Structural Steel	IS 2062 (E250/E350) high-yield structural steel or cold formed light gauge steel as per IS 811.
Columns / Rafters / Beams	Heavy-duty, minimum 6 mm hollow structural sections, square/rectangular tubes.
Purlins / Mounting Rails	3 to 6 mm thickness.
Approved Steel Brands	TATA / JSW / APL Apollo. Invoices for purchases shall be furnished with the Bills.
Galvanization / Zinc Coating	Hot-Dip Galvanizing after fabrication as per IS 4759 / IS 2629. Uniform minimum 80 to 120 microns; minimum 610 g/m ² zinc mass.
Foundations	24 Nos. RCC pedestal foundations, M25 grade concrete as per relevant BIS Standards. The bidder shall quote the cost of each foundation in the price schedule. Cost will be restricted to

	quoted per foundation cost.
Anchor Bolts	Required number of Anchor bolts, Grade 8.8 / SS304 embedded into RCC pedestals. The concrete level of each foundation shall be about 15 cm above Ground Level.
Clear Height	Minimum 2.5 m to 3.0 m at lowest point to allow unobstructed vehicular movement underneath.
Drainage & Hardware	Central 3 ft (914.4 mm) valley gap with custom gutter runs for rainwater channelization. Clamps: Heavy-duty anodized aluminium mid/end clamps with EPDM rubber pads. Hardware: SS304 bolts, nuts, spring washers and lock nuts.

5. COMMERCIAL TERMS & CONDITIONS

Term / Clause	Condition & Detailed Terms
EMD (Bid Security)	The bidder shall submit an EMD of ₹50,000/- along with the bid document via Demand Draft (DD) or Bank Guarantee in favor of "Rajindra Gymkhana & Mahendra Club, Patiala". EMD of unsuccessful bidders will be refunded post-award.
Performance Bank Guarantee (PBG)	The successful bidder must submit a Performance Bank Guarantee equal to 5% of the total contract value valid for 5 years from the date of successful commissioning.
Payment Milestones (Turnkey EPC Basis)	Payments will be released in stages based on physical progress: • 10% as Advance Payment against submission of Bank Guarantee. • 50% upon complete delivery of all major equipment (PV Modules, Inverters, Structures, Cables) at the RGMC site after inspection. • 25% upon complete erection of structural work, module mounting, electrical wiring, and civil foundations. • 10% upon successful grid synchronization, testing, commissioning, and handover of the plant. • 5% Retention amount (or against equivalent PBG) released post 12 months of defect-free operation.
Completion Schedule	The entire project must be completed and commissioned within 60 days from the date of issuance of the Work Order / Letter of Award (LoA).
Delay Penalty / Liquidated Damages (LD)	If the contractor fails to complete the work within the specified timeline, Liquidated Damages will be levied at 0.5% of the total contract value per week of delay, subject to a maximum cap of 10% of the total contract value.
Defect Liability Period (DLP)	12 months from the date of final plant commissioning. Any defects in equipment or execution shall be repaired/replaced by the contractor at zero cost to RGMC.
Comprehensive O&M and Cleaning	1-year comprehensive O&M after commissioning including cleaning of solar panels minimum twice a month.
Permits & Approvals	The contractor is fully responsible for obtaining approvals/sanctions from the state DISCOM (PSPCL) and Electrical Inspectorate.
Net-Metering Facilitation	All documentation, testing, and liaison work for net-metering grid connection are strictly within the contractor's scope of work.
Sub-Contracting	No portion of the contract shall be transferred, assigned, or sub-let without the prior written consent of RGMC management.
Right of Acceptance	RGMC reserves the right to accept or reject any or all bids without assigning any reason whatsoever. All bids shall be submitted in two separate sealed envelopes (one containing EMD & the other main bid) and opened on the scheduled date & time in the presence of bidders' representatives.

6. EARTHING & LIGHTNING PROTECTION

Component	Requirement
Standards	IS 3043:2018, IEEE 80 and CEA Safety Regulations.
Earthing Arrangement	Separate AC, DC and Lightning Protection System (LPS) earthing grids, with interconnected main grounding loop.
Target Resistance	Overall combined earth resistance ≤ 1 Ohm; individual pits < 5 Ohm.
Earth Electrode	Maintenance-free chemical gel/compound, pipe-in-pipe chemical earth electrode.
Electrode Material	Heavy-duty copper-bonded / hot-dip galvanized steel.
Electrode Size	Minimum 50 mm diameter, 3.0 m length; copper bonding thickness minimum 250 microns.
Backfill Compound	Environment-friendly, non-corrosive, moisture-retaining compound such as Bentonite / carbon-based.
DC Grounding	Minimum 25 × 6 mm HDG GI strip.
AC Grounding	Minimum 35 × 6 mm GI strip or flexible copper cable as per inverter OEM.
Main Ground Ring	Minimum 50 × 6 mm GI strip buried in ground.
Lightning Air Terminal	ESE Lightning Arrester or standard copper rod air terminal conforming to NFC 17-102 / IEC 62305.
Coverage	Minimum 50 to 60 m protection radius covering the car port footprint.
Down Conductor	Minimum 25 × 3 mm bare copper strip or high-voltage shielded cable, routed directly to dedicated ESE earth pit without sharp bends.
Pit Quantity	2 DC pits + 2 AC pits + 2 lightning arrester pits = minimum 6 dedicated chemical earth pits.
Chambers & Testing Link	Heavy-duty RCC/brick masonry chamber, 400 × 400 mm, with CI/precast RCC cover labelled "EARTHING PIT". Removable tinned copper/GI disconnect link at every pit for periodic resistance testing.

7. BIDDER PRICE SCHEDULE

Rates shall be inclusive of all materials, labour, transportation, installation, testing, commissioning, taxes/duties (if applicable), consumables and incidental works required for completion as per approved design and specifications.

S. No.	Description	Unit	Qty / Cap.	Rate (₹)	Amount (₹)
1	Design and supply of Hot dip galvanized Steel Structure, rails, Bolts & Nuts, Anchor Bolts Nuts including erection, alignment, fixing of clamps, drainage, rails and hardware etc.	Kg	Ceiling weight		
2	Cost of 24 No. foundations including design, excavation, cost of all materials, TMT Steel, Concreting etc. to complete the foundation.	No.	24		
3	Complete Solar PV System including modules, inverters, DC/AC cabling, earthing, LPS, DBs, connectors, monitoring, testing, commissioning and synchronization	kW	110 kW		

4	GST / Taxes, if applicable	%			
	TOTAL BID VALUE				

Bidder shall ensure that quoted rates are complete in all respects. No additional payment shall be admissible for items/works necessary for successful completion, testing and commissioning as per approved design, specifications and applicable standards. The bidder must quote for the above mentioned provision of installation of 110 kW. In case of any variation proposed the effective items of prices column shall be suitably adjusted. The negotiations, if any, shall be done with L1 firm.

8. BIDDER ELIGIBILITY & STATUTORY REQUIREMENTS

- Vendor shall be duly approved / empanelled with PSPCL / PED A and meet all applicable eligibility requirements. Bidder must have the experience of at least three years of similar nature and have also to attach the detailed list of already executed works of similar nature.
- In case any subsidy or financial incentive is released under any scheme of the Government of India, PED A or Punjab Government for this project, the entire amount shall be credited to RGM C and shall not be payable to or retained by the Vendor.

9. BIDDER INFORMATION

Legal Name of Firm / Company	
Registered Address	
GSTIN	
PAN	
PSPCL / PED A Approval / Empanelment No.	
Authorized Representative	
Mobile / Email	
Bank Details	

10. BIDDER DECLARATION

We hereby confirm that we have examined the tender requirements and agree to execute the work in accordance with the specifications, commercial terms, approved drawings and conditions contained in this tender document. We certify that the information submitted by us is true and complete and that our quoted rates are inclusive of all items necessary for successful completion of the project.

Name of Authorized Signatory:
(with a copy of resolution)

Signature & Seal:

Name of Firm / Company:

Date & Place:

11. FOR RGMC USE ONLY

Tender Received On	
EMD Received	Yes / No Amount: ₹ _____
Technical Evaluation	Qualified / Not Qualified
Commercial Evaluation	Qualified / Not Qualified
Authorized Officer Recommendation	Name: _____ Signature: _____

For Rajindra Gymkhana & Mahendra Club, Patiala

Authorized Signatory