INDIAN SAILOR'S HOME SOCIETY

Thana Street, Masjid (E), Mumbai - 400 009.
Tel. Nos. : **Hostel - 2373 7247, Home - 2348 0031**
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30th December 2024

NOTICE

INVITATION FOR SEALED QUOTATION FOR INSTALLATION OF SOLAR PV POWER PLANT AT INDIAN SAILOR'S HOME SOCIETY, MUMBAI

Sealed quotations are hereby invited for the installation of the Solar PV Power Plant on the available roof of Hostel building of the Indian Sailors' Home Society, Thane street, Masjid (E), Mumbai as per the eligibility criteria, scope, terms and conditions as mentioned in the enclosed Tender Document.

Interested parties may submit their quotations in a 'Sealed Envelope' to the office of the Resident Manager, Home building of the Indian Sailors' Home Society during working hours. The last date for submission of the quotation is 1130 Hrs on 14th January 2025.

The sealed envelopes will be opened on 14th January 2025 at 1200 hrs. The vendors who have submitted quotations may attend the opening of the same.

This is issued with the approval of the Competent Authority

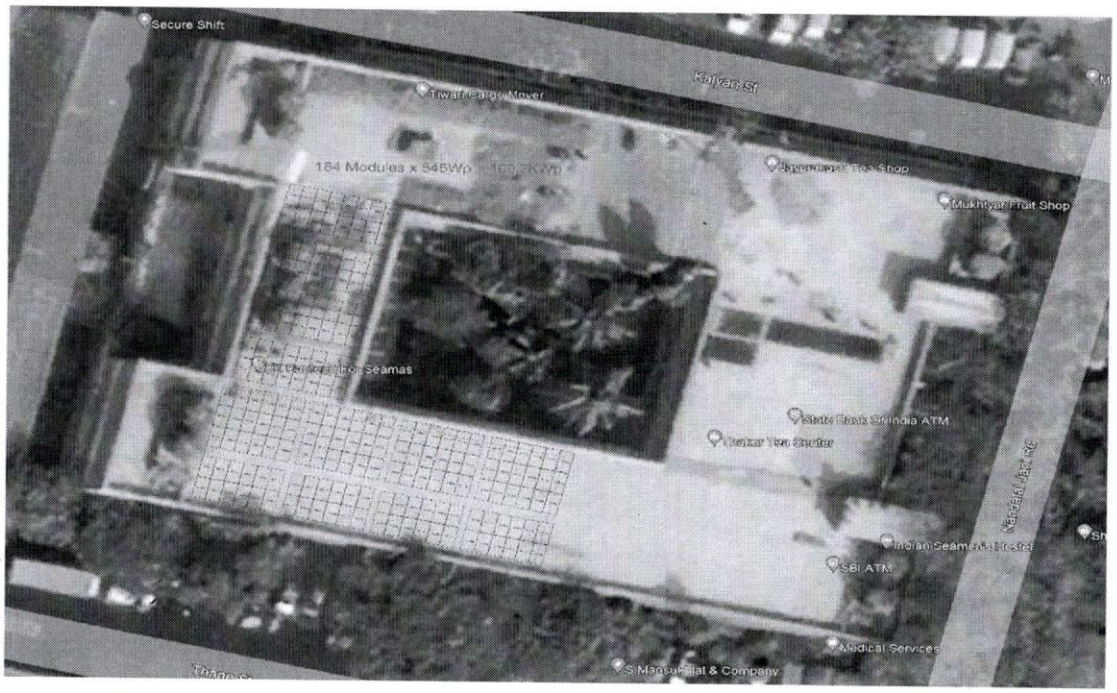
(Binoy V Nakulan)
Resident Manager

TENDER DOCUMENT

Client Name - Indian Sailors Home Society
Address - Thana Street, Masjid Bunder Siding Road, Mumbai 400 009.
Latitude Longitude - 18°57'18.86" N, 72°50'22.84" E

Introduction

M/s. Indian Sailors Home Society has decided to explore possibility of installing Solar PV Power Plant on the available roof of Hostel building as electricity bill is very high of the hostel building. As Indian Sailors Home Society is not a profit-making organization and providing services to the sailors it is decided by the Governing body to reduce the electricity bills by installing Solar PV Plant on the roof of the Hostel building. It is also decided to go for Grid Tie (On Grid) Solar PV Plant which will work parallel with Grid.
As per the feasibility and survey report submitted by appointed Project Management Consultant CURIOUSKID ENGINEERING PVT. LTD., here we propose CAPEX model for Solar PV Plant.



(Above is Tentative layout of the Solar PV Plant over roof of Hostel Building.)

Note –

1. Interested Vendors are requested to do a mandatory site visit before submitting sealed Commercial proposal for verifying feasibility of installation of 100KWp (DC) Solar PV Plant.
2. Makes of material, specifications cannot be changed.
3. Required eligibility Vendor should be matched with the requirement mentioned in the Tender document or else tender will be rejected.
4. Once Tender awarded vendor need to submit all GA drawings, Weight Calculation Charts, Single Line Diagrams mentioning Specifications for clear understanding within three days and should take written approval from appointed Project Management Consultant.
5. Vendor must be complete project within 60 days from the date of Tender Awarded.
6. Variation in quantities or specifications other than Solar Modules and Inverters needed approval from Project Management Consultant.
7. Tender will be awarded purely on the basis of Experience, Specifications and Pricing which should satisfy the requirements of the Tender.
8. All foundations (M25 Grade) should be over Beams and Columns of the roof.
9. Vendor is not allowed to penetrate the roof floor for installation of the Plant.
10. If required vendor should conduct Ribar Test to identify location of Beam and Columns.
11. The EPC contractor should use industrial adhesive (Lord Adhesive) to fix Base Plate and M25 grade foundation to erect Module Mounting Structure.
12. Mounting Structure is elevated structure and should have minimum height of 1.8 mtrs above the roof floor.
13. Vendor should provide end to end solution to the client with all necessary documents for liasoning of Net Metering.
14. Vendors Labour team should be covered under workmens' compensation policy at the time of execution of solar work. Indian Sailors home society will not be liable to pay for any accidents or mishaps during the execution of the project
15. If possible, Vendor should try to get subsidy as per Government norms.
16. The tender should be submitted with in a sealed envelope with filled in commercial proposal and a covering letter.
17. All rights are reserved with Governing Body of Indian Sailors Home Society to select or reject of any Tender.

Eligibility Criteria

A. Vendor should have registered in Registrar of Companies and should have Pvt. Ltd. Firm in category.
B. Vendors firm should have been operational since last 10 years or more.
C. Vendor should have completed a similar capacity project of 100KWp independently.
D. Vendor should have completed single project amount wise Rs. 75,00,000/- within last three years.

Escalation –

1. Escalation clause 10% is applicable if any price change in Solar Modules, Inverter, Cables, or in Metal or any quantity change at the time of delivery. EPC Developer should inform such escalation at least one week in advance and should take approval from the Project Management Consultant.

Technical Proposal

Codes and Standards

Standards	Purpose
ALMM Solar Modules	Approved List of Models and Manufacturers
IEC 61730 Part 1- 2	Requirements for construction & requirements for testing, for safety qualification
IEC 61683	Photovoltaic systems - Power conditioners - Procedure for measuring efficiency
IEC 62116 2008 /IS 16169:2014	Test procedure of islanding prevention measures for utility interconnected photovoltaic inverters
IS 15707	Testing, Evaluation, Installation and Maintenance of ac Electricity Meters - Code of Practice.
IS 1554	PVC Insulated Cable for working voltages up to and including 1100V
IS 2551	Signage Requirement
IS 3043	Earthing Standards
IEC 62305	Lightning Protection
IEC 62446	Operation, Maintenance and Documentation
IS 732	Wiring Rules
CEA -2007	Technical Standards for connection to grid 2007 (amendment 2013)
CEA-2013	Technical standard for Connectivity of the Distributed generation resources regulation 2013
MERC -2013	Maharashtra Electricity Regulatory Commission (Net Metering for Roof Top Solar Phot0 Voltaic Systems) Regulation 2013
IEC 61727	Utility Interface of PV system
IEC 60068-6-(1,2,78)	Environmental compatibility tests of PV inverters -Cold, dry heat and damp heat
IEC 60529	IP ratings of inverter
IEC61701/IS61701	Salt Mist Corrosion Testing
IEC 61215/IS14286	Crystalline Silicon Terrestrial PV Modules
IS: 2834:1989 reaffirmed 2000)	Solar Photovoltaic Energy Systems – Terminology
IS: 9000	Basic environmental testing procedure for electronic and electrical items
IEC 61723 Ed1.0	Safety Guidelines for grid connected photovoltaic Systems mounted on the buildings
IEC 60227 / IS 694 IEC 60502 / IS 1554 (part I & II)	General Test and MeasuringMethod PVC insulated cables for working voltage up to andincluding 1100 V and UV resistant for outdoorinstallation for A.C. cables. (It is suggested to use D.C. rated resistantPhotovoltaic cable having plug and play capability cables)
IS 3043: 1986	Earthing Grounding
IP 65 (for outdoor)/IP 21 (for indoor) As per IEC 529	Junction Boxes/ Enclosures forCharge Controllers/ Luminaries General Requirements

SR. NO.	DESCRIPTION OF ITEM	QTY	UNIT
1	SOLAR POWER PLANT (DC)		
1.01	SOLAR PV	100	KWp
	Design, supply, installation, testing and commissioning of Solar Power Plant having cumulative capacity of 100KWp, comprising the following:		
a)	Design, Supply, Installation, Testing & Commissioning of Solar PV Modules with Monocrystalline technology / Mono PERC, each PV module rating should be >=540Wp and must be having IEC, BIS, MNRE, ALMM Approvals. Module efficiency should be >20.5%. 1 Set		
	Note: Wp rating of each PV Module and No of PV Modules shall be decided by the EPC Developer and client based on the site layout plan.		
b)	Supply, Installation, Testing & Commissioning of Grid Connected 3 phase Inverter (IP65) of Required KVA/KW, Efficiency >97.50 % Anti-islanding Protection/Grid Regulation. VDE-AR-N 4105:2011; DIN VDE V 0124-100:2012; DIN VDE V 0126-1-1. EMC EN 61000, Safety IEC 62109-2, Efficiency IEC 61683:1999, Environmental Testing IEC 60068-2 (1,2,14,30) Ingress Protection IEC 60529. Inverter shall have application to monitor real time data over Wi-Fi and reports generation. The overload capacity may be considered in the range of 10-15%.		
i)	50KW: 2 Nos	02	Nos
c)	Supply, Installation, Testing & Commissioning of AC/DC DB suitable for Indoor/outdoor application as per the site requirement with suitable ratings Incoming & Outgoing MCCBs O/C, S/C & E/F Protections, Surge protection device. Each MCCB feeder receiving supply from 3ph Inverter must be having RYB phase indication lamp,1 no digital Multifunction meter with CT of required rating & communication port, Type-II SPD. Note: The number of MCCB / MCB & their rating for incoming and outgoing feeders as per Solar panels layout approved by the Client. 1 Set		

d)	Supply, Installation, Testing & Commissioning of MS Hot dipped galvanized with average 80 microns galvanizing thickness, structural members of various sizes as per site requirement that will be required for mounting of solar modules. The scope includes all consumables required for the job. Foundation, GA drawings with Top, front and side views of the same need to be submitted by the vendor for approval by the Consultant / Client. Structure shall be designed at the wind speed of 160Km/hr. Developer must visit the Site before submitting the layouts and drawings for approval to make himself familiar with the site conditions. Nothing extra shall be paid for any wrong assumptions at later stage. 1 Lot		
e)	Supply, Installation, Testing & Commissioning of UV Protected XLPO Solar DC Cables. The cable to be neatly dressed. There shall be no overhang below the solar modules. All DC Cables shall be carried through the PVC Conduit of suitable size. 1 Lot		
f)	Supply, Installation, Testing & Commissioning of AC Cables between Inverters - ACDB Panel, 4Core Cu PVC Unarmoured/ Flexible Cables with TERMINATION thimbles. The cable to be neatly dressed. There shall be no overhang below the solar modules. All AC Cables shall be carried through the PVC Ducting of suitable size. 1 Lot		
g)	Supply, Installation, Testing & Commissioning of AC Cables between ACDB Panel to Customer's LT Panel where the Solar Power is planned to be evacuated with XLPE ARMOURED 3.5 Core AL Cables with Al TERMINATION thimbles. The cable to be neatly dressed. All AC Cables shall be carried through the GI Perforated Cable Tray of suitable size. 1 Lot		
h)	Supply, Installation, Testing & Commissioning of long life, Maintenance Free Electrolytic Earthing System with 2 mtr rod, 50 mm dia, that does not require manual addition of water. The system should be stable operation for at least 15 Years. The electrode shall be 250-micron cu coated MS rod, UL Listed. The electrode shall be surrounded by at least 15 kgs (5kg x 3bags) of Ground Enhancing material like TEREC+ or equivalent so as to provide maximum contact between the electrode and the backfill. The product shall be CPRI tested. The product should meet the requirement as per IS-3043 or any equivalent international specification (UL). Chemicals used should be environmentally friendly. (The Installation procedures should be followed as instructed by the Earth Electrode Supplier). Providing masonry enclosure with heavy duty SFRC cover having locking arrangement, disconnecting/ testing links, including		

	excavation and backfilling etc. complete as required. (As discussed on 28/11/18 in the meeting, earthing pits shall be under Bliss scope): 3 Sets x 2		
i)	Supply, installation, testing & commissioning of 25 x 3 mm AL / GI strip or 1C x 16sqmm Al Cable for earthing to be connected with a separate earthing pit. The scope includes required clamps, nut bolt, Earth bus of required ways. Separate pits shall be made for DC and AC circuit. Resistivity shall be less than 5 Ohm. 1 Lot		
	Earth Pit shall essentially consist of:		
	a. UL Listed 25 mm dia. Copper bonded carbon steel core Electrode tested according to IEC 62561-2.		
	b. SS Universal Clamp of Size 175X50X3 mm for Connection Terminal.		
	c. Earth enhancing compound (OEC) (minimum 25 kg or more as per requirement).		
	d. Poly Propylene Heavy Duty Pit cover		
k)	Supply, installation, testing and commissioning of ESE (Early Steamer Emission) Type Air Terminal Lightning Arrestor Level-1 with the covering radius of complete Solar Plant, made with minimum SS304 grade suitable for corrosive environment, tested and certified Standard having triggering time delta T not more than 15 sec, with down conductor of minimum 70sqmm Cu Cable PV Insulated, warranted for minimum 20years, UL certified, supported with steel guy wire, mounted on GI mast pole at suitable location and height. LA shadow must not fall on the PV Modules. Technical Data Sheet must be submitted for approval along with the drawings and Layouts. 1 Set		
	Notes:		
	Any item missing require to make system operational shall be highlighted by vendor. Any deviation in specifications /BOQ /Makes shall be highlighted in separate sheet. (Needed for Approval)		
	Vendor Need to submit the shade analysis of the installation & submit the Report along with the Net KWh that will be generated annually keeping in view all the climatic condition & site constraint.		
	Solar Power Plant - 100 KWp as described above	1	Lot

Bill of Material for 100KWp Solar PV Plant

Sr. No.	Description	Quantity	Units	Make
1	Solar Modules 545Wp DCR module	184	Nos	Vikram, Sova, Premier, Contendre,
2	Solar Grid Tie String Inverter 50KW	2	No	Growatt, Solis, Sungrow
3	DC Junction Box DCDB	2	No	MCB – ABB/L&T Havells, Fuse – Phoenix Contact/Eaton
4	AC Junction Box ACDB	1	No	MCB – ABB L&T Havells, SPD – Phoenix Contact / Eaton
5	Solar Wire DC 1C x 4sqmm	600	Mtrs	Polycab, RR, KEI
6	Cu Green Wire 1C x 4sqmm for, Panel, Structure earth	400	Mtrs	Polycab, RR, KEI
7	Solar Module Mounting Structure Elevated	100	KWp	Sunshine, SESPL
8	Cu Flexible (Inverter to ACDB) 4C x 25sqmm	6	Mtrs	Polycab, RR, KEI
9	AL Armoured XLPE (ACDB to MCB) 3.5C x 70Sqmm	30	Mtrs	Polycab, RR, KEI
10	Earthing Strip AL 25 x 3mm with insulators / AL 1C x 16sqmm Flexible	75	Mtrs	U Protec, Yash, Multipower,
11	Earth Pits, Cu Bonded Rod 1.5Mtr, Chemical Backfill	5	Sets	U Protec, Yash, Multipower,
12	Lightning Arrester with GI Mast and support accessories	1	Set	Liva, Hex, equivalent
13	MCB with enclosure	1	No	ABB, L&T, Schneider, Havells

EPC Developer should submit quantities as per above format, above quantities are approximate and may vary as per layout.

Commercial Proposal

Sr. No.	Description	Capacity (KWp)	Rate/KWp	Amount
1	Supply, Installation, Testing, Commissioning, Training and Handover of Solar PV Power Plant	100		₹ 0.00
	GST @ 12% (on 70% supply cost)			₹ 0.00
	GST @ 18% (on 30% Service cost)			₹ 0.00
	Total (A)			₹ 0.00
2	Liasoning for Net Metering with all type of paperwork and material required if any	1		₹ 0.00
	GST @ 18%			₹ 0.00
	Total (B)			₹ 0.00
3	Gross Total (A + B)			₹ 0.00

Above offer is best of my knowledge and as per standards and specifications given above.

Payment Terms

1. 50% advance payment against 40% Bank Guarantee from Nationalized, or Scheduled Bank for mobilizing material delivery.

OR

1. 10% advance payment without any Bank Guarantee and 40% payment on delivery of Solar Modules and Accessories.

2. 15% payment before commencement of civil and fabrication work
3. 15% payment before installation of Solar Modules and DC Cabling.
4. 15% payment on Commissioning of Plant with Net Metering.
5. 5% Payment will remain as retention for one year from the date of commissioning.

Note –

All payments will be released after seven days of Bill Approval from Project Management Consultant.

All payments will be released as per proforma submitted including GST.