

**MUMBAI METRO RAIL CORPORATION LIMITED**

**Mumbai Metro Line-3 Project**

**Contract No: MM3-CBS-DEP-SOL**

**Design, Engineering, Supply, Installation, Testing, Commissioning and Comprehensive Operation & Maintenance of Roof Top Solar PV Project and associated support structure works on RESCO Model for a Period of 25 Years**

**Response to Bidders' Queries (SET-1)**

Sr. No.	Part No. & Section No.	Clause No.	Page No.	Bid Document Clause Description	Bidder's Query /Clarification	MMRC Response
1	Part 1 NIT	1.2 (b)	4 of 267	Completion Period: Completion period for Design, Engineering, Supply, Installation, Testing, and Commissioning of Roof Top Solar PV shall be 12 months from the Commencement date and 25 Years for O&M Services after Commissioning of Roof Top Solar PV.	Kindly amend the time period to 12 months from date of handover of site to the bidder clear of all other works carried by other contractors.	Bid Documents conditions prevail.
2	Part 1 SECTION III	2.3.2	60 of 267	2.3.2 Average Annual Procurement/Construction Turnover Minimum Average Annual Procurement/ Construction Turnover of INR 15 Crore calculated as total certified payments received for contracts in progress or completed, within the last 03 (Three) financial years ending at 31st March 2023	As you are aware last F/y has ended on 31st March 2024, we hereby seek permission to submit Un-Audited Balance Sheet for last f/y duly signed by the Chartered Accountant along with GSTR1 returns.	Bid Documents conditions prevail.
3	Part-II Section 6A: Scope of Work	7.1	125 of 267	Minimum CUF of 13% should be maintained for a period of Power Purchase Agreement i.e. 25 years. The bidder should send the periodic plant output details to MMRC for ensuring the CUF	Please note its not possible to offer 13% CUF for a period of 25years. The deratings factor is also required to be considered for this period. You are requested to kindly allow degradation as per standard derating chart of solar pv modules from first year onwards.	Bid Documents conditions prevail. Will be finalised during detailed design.
4	Part-II Section 6A: Scope of Work	Annexure 1	130 of 267	Name of Area- 1) Maintenance Workshop 2) OCC & Infra Building 3) Heavy Wash (HW) & Under floor Wheel lathe (UFWL) 4) Aarey Station building 5) Stabling shed -2 6) ASS-2 7) Store building	Please confirm if ladder access to rooftop of metal sheds will be provided by buyer or bidder.	Bid Documents conditions prevail.
5	Part-II Section 6A: Scope of Work	Annexure 1	130 of 267	Name of Area- 1) Maintenance Workshop 2) OCC & Infra Building 3) Heavy Wash (HW) & Under floor Wheel lathe (UFWL) 4) Aarey Station building 5) Stabling shed -2 6) ASS-2 7) Store building	Please confirm if its mandatory to use all the proposed rooftops or the bidder can optimise the design post LOA	Bid Documents conditions prevail. Will be finalised during detailed design.

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6	Part-II Section 6A: Scope of Work	Annexure 1	130 of 267	Name of Area- 1) Maintenance Workshop 2) OCC & Infra Building 3) Heavy Wash (HW) & Under floor Wheel lathe (UFWL) 4) Aarey Station building 5) Stabling shed -2 6) ASS-2 7) Store building	Please confirm if the solar power is to be evacuated within the same building distribution panel or the sub-station's feeder panel (Dedicated Solar Breaker- OCC Bldg: 3200A and ASS2: 1000A)	Bid Documents conditions prevail. Will be finalised during detailed design.
7	Part-II Section 6A: Scope of Work	Annexure-2- Interface Matrix- Clause 2	131 of 267	2. Interface Between PEB and Solar System contractors- PEB work at the station & depot buildings is executed by separate PEB Contractors. Requirement of Walkway, Access Ladder, Lifeline, Supporting Structure at roof top for fixing Solar Panel at Roof Top will be in the scope of Solar Contractor. Solar Contractor shall co-ordinate with PEB Contractor (s) or Employer/GC after award of work for compliance of solar panel's installation requirement.	Please share the safety requirements which we need to follow for this installation; 1. Walkway- Need min specs 2. Ladder- Need min specs 3. Lifeline- Need min specs 4. Guard Rail- Do you require Guard Rails or not.	Bid Documents conditions prevail. All the safety requirement to be considered as per applicable safety Code/ Standards.
8	Part-II Section 6B: Technical Specification	1 DEFINITION	134 Of 267	Solar PV modules consisting of required number of crystalline PV modules including flexible modules (thin film) wherever required.	Please note flexible modules (than film) are not required for this project by the bidder. Hence, please confirm if we can omit this point.	Bid Documents conditions prevail.
9	Part-II Section 6B: Technical Specification	2 ARRAY STRUCTURE	135 of 267	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. Installation of solar structure should not damage the roof in any way. If any concrete or foundation is required, it should be pre-cast type.	Please confirm if we are allowed to drill on the metal shed for installation of array structure.	Bid Documents conditions prevail. No drilling allowed.
10	Part-II Section 6B: Technical Specification	3 JUNCTION BOXES (JBs)	136 of 267	Tender Documents, Page No 134/267, Section 6B, Technical Specifications, Point No 3, Junction Box	Please note all new generation string inverters do not required AJB's/String Combiner Box. As they come with inbuilt DC SPD's, DC String level monitoring and are based on Fuse less design. Hence its not required to install AJB/String Combiner Box.	Bid Documents conditions prevail.

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11	Part-II Section 6B: Technical Specification	7 INTEGRATION OF PV POWER WITH GRID:	139 of 267	INTEGRATION OF PV POWER WITH GRID: The output power from SPV would be fed to the inverters which convert DC produced by SPV array to AC and feeds it into the main electricity grid after synchronization and availing net metering connection from Discom. 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. Once the DG set comes into service PV system shall again be synchronized with DG supply and load requirement would be met to the extent of availability of power. 4 pole isolation of inverter output with respect to the grid/ DG power connection need to be provided.	1) Please note Net Metering is subjective to Discom Approval 2) Please share the Sanction Load and connectivity voltage levels with the local discom. Also, please share the location of Main Meter. 3) Please share the list of DG's which are required to be Sync.	Bid Documents conditions prevail. Will be finalised during detailed design.
12	Part-II Section 6B: Technical Specification	8 DATA ACQUISITION SYSTEM / PLANT MONITORING (XV)	140 OF 267	xv. All instantaneous data shall be shown on the laptop screen. Two laptops with latest configuration for this purpose shall be provided by the developer to MMRC.	Please share the min specs required for 02 Nos of laptops.	Bid Documents conditions prevail. Will be finalised during detailed design.
13	Part-II Section 6B: Technical Specification	B. Solar Radiation and Environment Monitoring System (xi)	141 of 267	Remote Monitoring and data acquisition through Remote Monitoring System software at the MMRC site with latest software/hardware configuration and service connectivity for online / real time data monitoring/control complete to be supplied and operation and maintenance/control to be ensured by the supplier. Provision for interfacing these data on MMRC control server and portal in future.	Please note the SCADA will only be able to monitor the plant and not control the plant. In case you require Control feature the SCADA cost will be very high.	Bid Documents conditions prevail. Will be finalised during detailed design.
14	Part-II Section 6B: Technical Specification	12 LIGHTNING PROTECTION	142 of 267	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. Lightning protection should be provided as per IEC 62305 standards. The protection against induced high voltages shall be provided by the use of metal oxide arrestors (MOVs) and suitable earthing such that induced transients find an alternate route to earth.	Please confirm the level of protection required.	Bid Documents conditions prevail. Will be finalised during detailed design.

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15	Part-II Section 6B: Technical Specification	14 Connectivity (b)		for large PV system (Above 100 kW) for commercial installation having large load, the solar power can be generated at low voltage levels and may be connected to selected 415 V LT/33 kV HT panel of MMRC. The transformers and associated switchgear would require to be provided by the SPV bidders. Connection on LT/HT panel of MMRC is in the scope of Developer	Please confirm if you require the power evacuation at 415V or 33kV. Its not possible to submit accurate cost without clarity on evacuation voltage levels.	Bid Documents conditions prevail. Connection at 415V level.
16	Part-II Section 6D: Drawings			You are requested to share AutoCAD drawings for the proposed buildings.		AutoCAD drawings will be provided after LOA.
17	Part III GCC Section 07	GCC Clause 17	227 of 267	1) The Contractor shall, within 28 days of the date of issue the Letter of Acceptance, submit to the Employer, the Performance Security in a sum equal to INR 1,00,80,000/- (One Crore and Eighty Thousand) for due observation and performance by the contractor of the contract. The validity of performance security shall initially be for 24 months from the date of issue of Letter of Acceptance. Thereafter PBG shall be extended every year for next one year till the completion of 5 years of O&M period and value can be revised as per the% reduction in residual value of Plant cost as mentioned in Schedule-III of Power Purchase Agreement (PPA) format attached. The contractor shall maintain the said performance security at its own expense and shall remain full force. No interest shall be payable by the MMRC. The Employer shall return the Performance Security to the Contractor within 21 days after successful completion of 05 years of O&M period.	1) Please note the Performance Security should be 3% instead of 10% of Project Cost. Since this is a RESCO project, the current PBG seems very high and makes the project un-viable for a MSME like ours.  2)The Performance Security should be returned back to the vendor post commencement of the project. Since this is not CAPEX project so why are you holding up this security for 05 years. We request you to please review this terms. CAPEX and RESCO cannot be treated same in regards to Performance Security.	Bid Documents conditions prevail.

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18	Part III GCC Section 08	GCC Clause 33	234 of 267	<p>Change in Law-</p> <p>(a) For the purpose of this Clause, the term "Change in law" shall mean the occurrence of any of the following events after the Bid submission due Date, resulting into any additional recurring / non-recurring expenditure by the Power Producer or any income to the Power Producer:</p> <p>(i) the enactment, coming into effect, adoption, promulgation, amendment, modification or repeal (without re-enactment or consolidation) in India, of any Law, including rules and regulations framed pursuant to such Law; or</p> <p>(ii) a change in the interpretation of any Law by any Governmental Authority having the legal power to interpret or apply such Law, or any competent court;</p> <p>or</p> <p>(iii) the imposition of a requirement for obtaining any Government Approvals which was not required earlier; or</p> <p>(iv) a change in the terms and conditions prescribed for obtaining any Government Approvals or the inclusion of any new terms or conditions for obtaining such Government Approvals; or</p> <p>(v) any introduction of any tax made applicable for supply of power by the Power Producer as per the terms of this Agreement. Any benefit due to change in tax on the sale of solar energy shall be passed on to Purchaser.</p> <p>(vi) The change in the rate of any existing tax will not be considered a change in law.</p> <p>(vii) Any benefit arising due to change in above para (i) to (v) shall be passed on to the purchaser.</p>	<p>Please note any change is taxes on power sale or any additional tax applied on power sale in the future shall be considered for change in law. We can offer you price inclusive of 18% GST with a condition that any increase or decrease of GST or any additional taxes shall be applied to the quoted price.</p>	<p>Bid Documents conditions prevail.</p>
19				<p>Water during CAMC period</p>	<p>Please confirm if client will provide source water for module clearing during the course of 25 year to the bidder.</p>	<p>Yes</p>
20				<p>Unrestricted access to site</p>	<p>Please confirm if client will provide uninterrupted access to site during the course of 25 year to the bidder.</p>	<p>Yes</p>

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21				Site Availability	Please confirm if the proposed sites are completed in all regards (Civil/Electrical) and are ready for installation of the solar power plant.	Yes, will be completed before LOA.
22				Security	Please confirm if the proposed sites have 24*7 security available.	Yes
23				Roof Access	Please confirm if roof access is available for all the proposed buildings.	Yes
24				Competition Period	Please confirm if the completion period extends beyond 12 months for any reason. What will be the penalty clause.	Bid Documents conditions prevail.
25				Commitment to consume the solar power	Please confirm if the buyer will consume 100% of the solar power generated by the bidder.	Yes