

**Corrigendum-VI: Reply to Bidders' Queries**

**Tender No: N1EG-35/2022, dtd 11/07/2022**

**E-Tender Portal SN: 305**

**Name of Work: Survey, Design, Engineering, Manufacture, Supply, Storage, Civil work, Erection, Testing & Commissioning of 6.0 MWp Rooftop mounted Solar PV projects under RESCO Model including Operation and Comprehensive Maintenance (O&M) for a period of 25 years after commissioning at 13 Nos. Stations, two Depot buildings and Track wall of Nagpur Metro Rail Project**

SN of earlier reply	Section/ Volume	Clause no.	Description/Clause Description	Maha-Metro's Reply to Bidders' queries	Further Queries by bidders	Maha-Metro's reply
3			General	At present Maha-Metro have 4 connections from MSEDCL and at all 4 locations net-metering arrangement is in place. The upcoming 6 MWp capacity is to be connected under net-billing arrangement with MSEDCL. (Net-billing as per Ministry of Power Guidelines is requested to be made applicable to Maha-Metro from MERC, reply on the same is awaited from MERC). After, the said reply, this tender will be finalized.	Will the tender bid submission date be after the MERC order? And by when is the MERC order expected? We request for considerable amount of time post MERC order for understanding the new process of net billing arrangement approvals	MERC's order is awaited. The bid submission date shall be rescheduled accordingly.
4			Roof access	A permanent roof access is already in place at most of the sites. The bidders are suggested to carry out detailed site surveys. If any additional access (other than present access) is required by the bidder then same will be in bidder's scope and the additional location (if any) will be jointly decided.	Based on the site survey, there's no provision of roof access at following stations: 1) Kasturchand Park- Roof access not available 2) Gaddi Godam, Automotive Square & Kadvi Chowk : Access to RCC available. RCC to Roof access not available 3) Cotton Market & Indora Chowk- Need clarity from Nagpur Metro with respect to access available or not? We understand that the scope of accessibility in case of non availability shall be in Developer scope. We request to provide confirmation on above points from Nagpur Metro	Roof access is provided at all sites put to tender, if not, it will be provided by Maha-Metro before handing over of the site to the successful bidder. If any additional access (other than Maha-Metro provided) is required by the bidder then same will be in bidder's scope.

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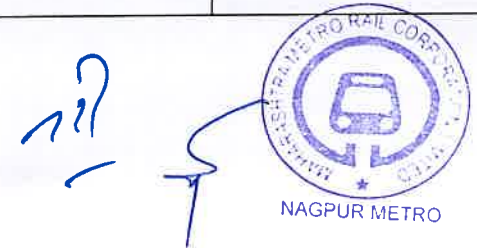
5			Earthing – can we connect to MMRCL existing earthing	The developer have to connect the solar PV system to a separate earthing for which space will be provided by Maha Metro in its premises only and no seperate permission is required from other authorities.	We will consider the same in BOM. In case of any approval required during execution, same shall be in Nagpur Metro scope.	Agreed.
6			Cable Trays	Existing cable trays wherever available can be used by the developer. At other locations, developers have to provide cable trays for cable routing and if the cable trays are fixed on elevation of the building (after joint survey), same is to be covered and painted with building colour.	As per site survey in most of the location existing cable tray have no space hence we will consider the same in BOM.	If space is not available, the developer shall arrange the cable trays at his own cost.
7			Spare Feeder	A spare feeder of 400A is available at every metro station and if higher size feeder (MCCB) is required as per the PV capacity, the developer can replace the same with 600A MCCB at the same location. At depot buildings, spare feederes availability is prived in Annexure -1 and the developer can connect solar PV capacity to each spare feeder seperately as per the requirement.	For stations 1) Congress Nagar- 400 A spare breaker will be replaced with 500 A breaker (will be considered in developer scope). 2) Automotive Square- As of now spare feeder is not available. (It is assumed 400 A breaker will be provided by Nagpur Metro). For Depot In Mihan and Hingna depot location of HVAC and Ventilation is not clear	1) Agreed. 2) Will be provided 3) For depot: The spare feeder is available in the panel which is feeding power to HVAC and ventilation.
23	Section V	14.1.2 g) iv)	I-V (Current–Voltage) curves at STC (standard test conditions) should be provided by bidder	I-V curves for a sample 10-20 modules for each site shall be provided.	We request for 30 modules per lot to be considered as the modules to each site will be shifted from main storage location where IV curves testing will be feasible	Accepted. I-V curves for a sample of 30 modules per lot shall be provided



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25	Section V	15 b)	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. It may be ensured that the design has been certified by a recognized Lab/ Institution in this regard and submit wind loading calculation sheet to MAHA-METRO. Suitable fastening arrangement such as grouting and clamping should be provided to secure the installation against the specific wind speed. A third-party verification of the system at each premise for the wind load & stability from a government institution / organization shall need to be submitted before commissioning.	The clause is amended as below- 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. It may be ensured that the design has been certified by a Chartered Engineer with approval of Maha-Metro and submit wind loading calculation sheet to MAHA-METRO. Suitable fastening arrangement such as grouting and clamping should be provided to secure the installation against the specific wind speed. A third-party verification of the system at each premise for the wind load & stability from a government institution / organization shall be submitted by the developer before EIG approval / commissioning.	Design will be certified by Chartered Engineer. A third party verification for site installation as per approved design will be done by independent third party (not necessarily Govt.)- The same we have done in KMRL.	Tender condition prevails.
34	Section V	20 g)	a) In PCU/Inverter, there shall be a direct current isolation provided at the output by means of a suitable galvanic isolating transformer. If Isolation Transformer is not incorporated with PCU/Inverter, there shall be a separate galvanic Isolation Transformer of suitable rating provided at the output side of PCU/PCU units for capacity more than 100 kW.	Since, earthing of station and solar PV system is different, Galvanic Isolation to be provided by Bidder. Hence, tender condition prevails.	All currently available string inverters have requisite inbuilt protection and galvanic isolation is not envisaged as per OEM design.	Tender condition prevails.
39	Section V	25.4.b)	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.	Tender condition prevails.	Breaker at spare feeder to be used for same application.	Tender condition prevails.
46	Section V	35.1 b) ii)	Walkway shall be installed on the rooftop before the start of actual solar installation work, so that the safety of worker can be ensured and also damage to roof sheet can be avoided.	Tender condition prevails. Developers can visit existing solar PV system for more details. Developer shall make suitable arrangement to ensure convenience and safety of its workers during execution and O&M at his own cost.	Please confirm whether railing and fall arrestor are installed in existing plant or not. Kindly share images if possible. We have considered walkway and lifeline system for safety of man power movement over metal shed roof.	Tender condition prevails.
49	Section V	38.1 c)	The following type of land transport shall be provided from the date of signing the Power Purchase Agreement (PPA) till commissioning of the project. One saloon car having an engine capacity of 1200 CC (equivalent to Swift Desire).	Tender condition prevails.	since the packages are divided into two, if the developer wins both the packages, will it be required to have two separate cars for O&M purpose?	The clause is modified as below: The following type of land transport shall be provided from the date of signing the Power Purchase Agreement (PPA) till commissioning of the project. One saloon car Electric Vehicle (EV) equivalent to Tata Tigor EV shall be deployed. Further, if a single developer is selected for both the packages, only one car for both the packages to be provided.



51	Section II	2.2	<p>Sites of MAHA-METRO Approx. Total Capacity (KWp) 1.Maha-Metro station rooftops 13 Nos (1 No. of Reach-1,6 Nos of Reach-2 and 6 Nos. of Reach-3) - 2000 KWp 2.Mihan and Hingna Depot buildings-2800 kWp 3.Track Wall-1200 kWp 4.Metro Bhavan-50 kWp</p> <p>The above capacity is indicative only, Bidder however has to maximize as per site availability. 25% variation can be operated in these sites to the capacity mentioned in above table</p>	<p>There may be variation in total solar PV capacity the proposed sites. However, the bidder should strive to maximize the solar PV capacity at each site. Further, Please refer clarification at sr. No. 21 above.</p>	<p>As per initial assesment combined DC capacity is 4 MWp. (The same will change as per detailed site survey/working on actual station and depot drawings.).</p>	<p>Tender condition prevails. With modification as under: <b>The solar PV module to be used should comprise of solar crystalline / Mono PERC / Bi-facial / half cut modules of minimum 440 Wp each and above wattage.</b> <b>Module capacity less than 440 watt peak shall not be accepted</b></p>
75	SCHEDULE III		<p>The Price reference taken for calculating the total cost of the system is as per RFP rates and has used the MNRE guidelines for arriving at the Project cost (The quoted cost should not be more than Rs. 39,080 per kWp excluding proposed subsidy/incentive and including taxes).</p>	<p>Tender condition prevails. However, before submission of the bid if MNRE revise the Project cost, the revised project cost will be applicable.</p>	<p>The strongly suggest to remove this clause as the MNRE benchmark prices are old and also, those benchmark prices are based on standard rooftop installation and standard approvals and certifications. The metro solar project is all together is different kind of project unlike standard rooftop projects. Also, from the date these MNRE benchmark rates, there is increase in GST from 5% to 12%, increase in prices of most commodities due to various FM events &amp; disruptions in the market. Also, imposition of BCD on modules and cells have increased the costs significantly. All these factors, along with financing costs for OPEX projects is not considered in the benchmark pricing of MNRE. The benchmark costing will limit our termination values. Kindly delete this requirement. These terms are not considered in any other metro projects. These Benchmark prices are also considered for subsidy benefits.</p>	<p>May please see the revised tender document. Further, the tender conditions prevails.</p>
90			<p>General- Drawings to be provided</p>	<p>The evacuation of power will be to nearest Metro station ASS room. Available feeder capacity at New Airport and Khapari Metro station is 800 A each. Further, at New Aiport and Khapari stations existing 113 kW and 68 kW solar PV systems are connected at same feeder. The upcoming capacity on track wall can be connected at the respective feeders. (Similar arrangement already exists at Airport south metro station). For more understaing site visits may be carried out.</p>	<p>Kindly confirm extra space availability for cable termination of additional capacity?</p>	<p>Clarification provided earlier, is self explanatory.</p>

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