

"Design, Detail Engineering, Supply, Erection, Testing and Commissioning of Reactive Power Compensation and power quality Improvement along with associated equipments & integration with existing protection and SCADA system for Ahmedabad metro rail projects Phase-1 & 2".

Tender No. GMRCL/TR/PF improvement/2026 (Clarification Set-1)

SN	Vol	Section	TS Chapter	Clause No.	Page No.	Tender Condition	Bidder's Query	GMRC's Clarification, dated: 20/05/2026
1	II	TS	Chapter-1	Clause 1.2	2	1.2 The brief scope of the works includes Design, Detailed Engineering, Supply, Erection, Testing and Commissioning of 33kV/0.415kV Reactive Power Compensation and power quality Improvement device (D-STATCOM) along with other associated equipments & integration with existing protection and SCADA system for Ahmedabad metro rail projects Phase-1 & 2.	Clause 1.2 specifies integration of DRPC (D-STATCOM) with existing SCADA system. However, Clause 2.2 and sub-clause 2.2.7 indicates installation of workstation/server at each RSS and mentions that existing traction SCADA shall not be disturbed. Kindly clarify whether bidder shall use existing RTU communication network of metro system for data transfer to OCC, while providing separate local SCADA workstation for DRPC system at each RSS, which shall interface with OCC SCADA through existing network.	<p>Bidder's understanding is not correct.</p> <p>Access to existing SCADA system of Traction shall not be permitted.</p> <p>Bidder shall be permitted to use only spare core of existing OFC cables for communication establishment from station and RSS to OCC for remote monitoring and operation. Necessary ports and ethernet switches as required to be provided at DRPC system as well as at TER room shall be under the contractor's scope.</p> <p>For More clarification refer tender conditions.</p> <p>Tender conditions are self explanatory.</p> <p>Tender conditions prevails.</p>
2	II	TS	Chapter-2	Clause 2.2 & 2.2.7	19 to 21	<p>2.2 Integration of DRPC system with SCADA</p> <p>2.2.7. Contractor shall design their SCADA monitoring system in such a manner that it shall not affect the working of existing SCADA system of Traction-GMRCL. Further, the access to existing SCADA system of GMRCL shall not be granted to the contractor and it is also the responsibility of contractor to do no breach any kind of existing Traction SCADA security. If in any case, it is found that the functioning of existing Traction SCADA system has affected/compromised due to the DRPC contractor's working then the penalty of INR 5,00,000/- + actual cost of rectification shall be recovered from the DRPC contractor. (i.e. contractor of subject matter tender).</p>	Kindly confirm whether DRPC system SCADA shall be standalone system with gateway interface to existing OCC SCADA	<p>DRPC SCADA system shall be standalone and not to be integrated with existing Traction SCADA.</p> <p>For More clarification refer tender conditions.</p> <p>Tender conditions are self explanatory.</p> <p>Tender conditions prevails.</p>
3	II	TS	Chapter-1 & Chapter-2	Clause 1.2, 2.2	2 & 19	<p>1.2 The brief scope of the works includes Design, Detailed Engineering, Supply, Erection, Testing and Commissioning of 33kV/0.415kV Reactive Power Compensation and power quality Improvement device (D-STATCOM) along with other associated equipments & integration with existing protection and SCADA system for Ahmedabad metro rail projects Phase-1 & 2.</p> <p>2.2 Integration of DRPC system with SCADA</p>	Kindly confirm whether modification in existing OCC SCADA or RTU configuration shall be provided by GMRC/SCADA OEM.	<p>Access to existing SCADA system of Traction shall not be permitted.</p> <p>Bidder shall be permitted to use only spare core of existing OFC cables for communication establishment from station and RSS to OCC for remote monitoring and operation. Necessary ports and ethernet switches as required to be provided at DRPC system as well as at TER room shall be under the contractor's scope.</p> <p>For More clarification refer tender conditions.</p> <p>Tender conditions are self explanatory.</p> <p>Tender conditions prevails.</p>
4	II	TS	Chapter-1	Clause 1.2.4	2	1.2.4. To arrange inspection by GMRCL officials for routine test, Type test, Factory Acceptance Test and Site test for various items used in the subject work.	Clause 1.2.4 mentions inspection for Type Test. Kindly clarify whether Type Tests are required to be conducted again during project execution or existing valid Type Test certificates (not older than 3 years) from NABL accredited laboratory for similar rating and design shall be acceptable.	<p>Bidder's suggestion for acceptance of type test report are acceptable subject to compliance of following:</p> <p>a) The type test report should not be less than 5 years from the date of NIT</p> <p>b) Type test report shall match the requirements stipulated in Clause 2.2 of Technical specifications and relevant standard IEEE/IEC.</p> <p>c) The type test report should be from Govt accredited Third Party NABL LAB.</p>

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5	II	TS	Chapter-1	Clause 1.4.51	11	1.4.51. To minimize the cost of spares and reduce maintenance costs the DRPC module shall be designed such that all major components, including the 3 IGBT modules, 3 IGBT Gate Driver Cards, Master Control Card, AC Filtering Capacitors, DC Bus Capacitors, Current Sensors, Ripple Filtering Inductors, Contactors, Pre-charging Circuit, etc., are separately mounted (not soldered) to prevent a cascaded failure in the event of a minor fault in any one part or component.	Clause 1.4.51 specifies that major components such as IGBT modules, gate driver cards, control cards, capacitors, sensors etc. shall be separately mounted and interconnected. However, this configuration corresponds to conventional stacked design philosophy and may restrict adoption of modern compact modular STATCOM architecture as required in Clauses 1.4.6, 1.4.28, 1.4.29, 1.4.30 and 1.4.32. Kindly confirm whether fully integrated modular power blocks (factory assembled modules containing IGBT, driver, control and filter components) shall be acceptable, provided each module is independently replaceable and system capacity can be increased by adding modules without increasing footprint.	Bidder's suggestion are acceptable. Bidder may also submit the detailed design document covering this aspect and complying to tender specifications for approval of GMRCL during detailed design. For More clarification refer tender conditions. Tender conditions are self explanatory. Tender conditions prevails.
6	II	TS	Chapter-2	Clause 2.1 Table 2.1 Sr. No. 2	17	Network voltage variation $\pm 10\%$	Table 2.1 specifies network voltage variation of $\pm 10\%$, which is not aligned with Clause 1.4.25. our understanding is that system shall be designed for operating voltage range 415V (-15% to +10%). Kindly confirm the applicable voltage variation range for design of DRPC system.	Refer Addendum no. 1 & 2 of Set-2.
7	II	TS	Chapter-1	Clause 1.4.26	8	1.4.26. The DRPC system shall deliver 100% output at an ambient temperature of +50°C (with relative humidity up to 95%), and should operate up to +60°C with some duration. Any necessary derating shall be accounted for during sizing and submitted with the technical bid.	Clause 1.4.26 specifies that DRPC system shall deliver 100% rated output at ambient temperature of 50°C and shall operate up to 60°C with derating.	Refer Addendum no. 3 & 4 of Set-2.
8	II	TS	Chapter-2	Clause 2.1 Table Sr. No. 4	17	4. Ambient Temperature (°C) 50°C (Derating applicable after 40°C)	Table 2.1 Sr. No. 4 specifies different ambient temperature value which is not aligned with Clause 1.4.26. Kindly confirm which ambient temperature shall be considered for design of DRPC system.	Refer Addendum no. 3 & 4 of Set-2.
9	II	TS	Chapter-1 & Chapter-2	Clause 1.4.26 & Table 2.1 Sr No 4	8 & 17	1.4.26. The DRPC system shall deliver 100% output at an ambient temperature of +50°C (with relative humidity up to 95%), and should operate up to +60°C with some duration. Any necessary derating shall be accounted for during sizing and submitted with the technical bid. 4. Ambient Temperature (°C) 50°C (Derating applicable after 40°C)	Considering climatic conditions of Ahmedabad where ambient temperature may reach 50°C or higher inside electrical rooms, kindly confirm that DRPC system shall be designed to deliver full rated capacity at 50°C ambient temperature as specified in Clause 1.4.26.	Refer Addendum no. 3 & 4 of Set-2.
10	II	TS	Chapter-2	Clause 2.5.	28	The overall key SLD of Ahmedabad Phase-I and Phase-II depicting the location and sizing of Auxiliary Transformer at each station is provided as enclosure to this document for ready reference and further planning for installation of DRPC system. Encl:- 1.Overall Key SLD for EW corridor of Ahmedabad Phase-I 2.Overall Key SLD for NS corridor of Ahmedabad Phase-I 3.Overall Key SLD for Ahmedabad Phase-II corridor	Tender document refers to enclosed Overall Key SLD for EW corridor Phase-1, NS corridor Phase-1 and Phase-2 corridor showing auxiliary transformer location and sizing. However, these SLD drawings are not available in the tender document. Kindly provide the above mentioned SLD drawings.	Noted. the Overall Key SLD of Ahmedabad Phase-I and Phase-II is provided as Annexure-1 of Addendum 2. Refer Addendum no. 5 of Set-2.
11	II	TS	Chapter-2	Clause 2.1 Table Sr No 1	17	1.Total DRPC System Capacity and distribution 11,000 KVAR (indicative) The preferred sizing of one unit in RSS of Depot is of 400 KVAR and in ASS-TSS it is 100 KVAR. However, it shall be finalized at the time of detailed design stage.	Kindly provide detailed SLD showing rating of auxiliary transformers, bus configuration and interconnection philosophy between RSS, ASS and TSS locations to enable accurate sizing of DRPC system.	Refer Annexure-1 of Addendum-2 which provides the details of Auxiliary Transformer rating of RSS, ASS, ASS-TSS and bus configuration. Interconnection among RSS, ASS-TSS and ASS has been done through 33kV 1C x 240 sq.mm XLPE Copper cables. Detail specifications shall be provided to successful bidder for preparation of Detailed design as design works is under the bidder's scope.

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12	II	TS	Chapter-2	Clause 2.2	19	2.2 Integration of DRPC system with SCADA	Kindly provide SLD indicating proposed CT/PT measurement point and connection location of DRPC system in RSS / ASS network.	Provision of CT-PT measurement point is the part of Bidder's design scope. To understand the existing arrangement of system Site visit had been scheduled on 06th May, 2026. Bidder to develop the design accordingly in compliance to specifications. For More clarification refer tender conditions. Tender conditions are self explanatory.
13	II	TS	Chapter-2	Clause 2.2	19	2.2 Integration of DRPC system with SCADA	Kindly provide SLD showing communication architecture between RSS, ASS and OCC for DRPC system SCADA integration.	Design of communication architecture for SCADA communication from RSS, ASS, ASS-TSS to OCC is the part of bidder's design. To understand the existing arrangement of system Site visit had been scheduled on 06th May, 2026. Bidder to develop the design accordingly in compliance to specifications. For More clarification refer tender conditions. Tender conditions are self explanatory. Tender conditions prevails.
14	I	NIT	-	Section 1.1.3 Qualification Criteria 1.1.3.2,	12	1.1.3.2 Minimum Eligibility Criteria: A.1. The Bidder shall have the government approved valid electrical contractor License A.2 Work Experience: The Tenderers will be qualified only if they have successfully completed work(s)*** completion date(s) of which falling during last 7 years ending last day of the month the month of tender submission as given below: i.At least one "similar work"*** of value of INR. 1.22 Crore or more OR ii.Two "similar works" **each of value of INR. 0.76 Crore or more OR iii.Three "similar works"***each of value of INR. 0.61 Crore or more	One similar work of 1.22 Crore OR Two similar work of 0.76 Crores OR Three similar works of 0.61 Crores is mentioned. Query: Please confirm if the above value is inclusive of GST or exclusive of GST.	The said values are exclusive of GST.
15	I	NIT	-	Section 1.1.3 Qualification Criteria 1.1.3.2,	12	"Similar work" for this contract shall be Design, Detail Engineering, supply, installation, testing and commissioning of Active power filter system/DSTATCOM for Power factor Improvement system implemented Metro / Railway /mono rail/suburban rail /Tramway/Power transmission and distribution utility utility/Generation Utility. If the tenderer is a JV/Consortium having foreign partner(s) and above work(s) have been executed by the foreign partner of JV and the work(s) were done in the country of the foreign partner, then in addition to this the foreign partner must have executed works (which need not be similar in nature) of total put together of value INR 0.61 Crore or more outside the country of the foreign partner.	Similar work definition does not include work done for reputed Private Customers. Query: Please confirm if PO and completion certificate of similar work executed for reputed Private Customers in India or Abroad is acceptable.	Bidder are advised to refer the notes of clause no. 1.1.3.2 of NIT. Tender conditions are self explanatory. Please follow tender conditions.

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16	II	TS	Chapter-1	Clause 1.1.2	2	1.1.2. The main objective of the work is to improve the true power factor up to 0.99 at 132KV incomers of RSS (at Point of Common Coupling), Depot and ASS/TSS of GMRC. The targeted power factor is to be read 0.99 (true PF) instead of unity PF in all tender document. The equipment offered should be based on the latest state of the art technology and having maximum energy efficiency and best performance.	Any target VTHD & ITDD limit??	Limit shall be govern as per applicable standard as defined in clause no. 1.3 of Chapter-1, Technical specifications. For More clarification refer tender conditions. Tender conditions are self explanatory. Tender conditions prevails.
17	II	TS	Chapter-1	Clause 1.2.1	2	1.2.1 To provide 33kV/0.415KV IGBT based D-STATCOM at the LV side at each RSS, ASS, TSS of GMRCL stations and depot	SiC Power MOSFET based Active Harmonic Filter offering, Kindly confirm acceptability against specified IGBT-based D-STATCOM requirement.??	Bidder's suggestion are acceptable subject to compliance of tender conditions. Tender conditions are self explanatory. Please follow tender conditions.
18	II	TS	Chapter-1	Clause 1.2.4	2	1.2.4 To arrange inspection by GMRCL officials for routine test, Type test, Factory Acceptance Test and Site test for various items used in the subject work.	Routine test reports, type test certificates and OEM FAT reports shall be submitted for approval. Since the offered equipment is manufactured overseas, physical FAT witness by GMRCL officials at OEM works may not be feasible; hence, kindly confirm whether virtual FAT and OEM-certified FAT reports shall be acceptable, or whether physical FAT witness at OEM works may be arranged subject to mutual agreement, with all visit expenses governed by GMRCL. Site testing and commissioning tests shall be carried out in presence of GMRCL officials at site.	OEM certified FAT reports shall not be acceptable.. Virtual FAT inspection call may be allowed subject to OEM is having the adequate facility for inspection. Further, in case of Physical FAT within India or Abroad, all expenses of GMRCL official attending the inspection shall be borne by GMRCL. Refer Addendum No. 6 of Set-2
19	II	TS	Chapter-1	Clause 1.4.15	6	1.4.15The heat loss (in kW) together with the control and cooling power consumption in each DRPC unit shall not exceed 1.5% of its rated capacity (in kVAR).	May the offered DRPC system having total heat loss, including control electronics and cooling power consumption, in the range of 1.7% to 3.0% of rated capacity be considered acceptable as a minor deviation against the specified 1.5% limit?	Refer Addendum No. 7 of Set-2.
20	II	TS	Chapter-1	Clause 1.4.16	6	1.4.16. Each DRPC unit shall feature intelligent control technology that minimizes internal heat loss under each operating condition (such as current grid voltage, DRPC loading, operating temperature, harmonics to be cancelled, etc.) in real time, ensuring the unit's internal heat loss remains as low as possible. Therefore, the resultant full-load efficiency shall be more than 98.5%.	98.5% full-load efficiency is acceptable??	Refer Addendum No. 8 of Set-2.
21	II	TS	Chapter-1	Clause 1.4.20	8	1.4.20. The DRPC units located at RSS and ASS locations as a part of DRPC system shall take feedback from the CTs, PTs at the respective location, to achieve desired performance and to avoid overloading of transformer (beyond 80% of the installed capacity). A suitable number of current transformers (CTs), summation CTs of class 0.2 type shall be provided.	May existing CTs be utilized for sensing to the DRPC system, subject to availability of suitable spare core, required accuracy class, burden capacity and compatibility with the DRPC sensing requirements?	Bidder's suggesstion are not acceptable. Bidder have to provide the summation CT and other CT for measurement and protection of appropriate rating in the LV MDB Panel. If at any station, any spare CT available then GMRCL may allow the same based on site conditions. However, the complete discretion for allowing the use of Existing CT is up to GMRCL.

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22	II	TS	Chapter-1	Clause 1.4.24	8	1.4.24 All electronic circuit boards, cards and other electronic components in the DRPC system (including units at all RSS and ASS-TSS locations) shall be coated with a conformal coating as per relevant standard to withstand dusty environments adverse climatic conditions.	Shall conformal coating on all electronic circuit boards, cards and components of the DRPC system be considered mandatory for compliance with the specification?	Yes, it is mandatory. For More clarification refer tender conditions. Tender conditions are self explanatory. Tender conditions prevails.
23	II	TS	Chapter-1	Clause 1.4.26	8	1.4.26 The DRPC system shall deliver 100% output at an ambient temperature of +50°C (with relative humidity up to 95%), and should operate up to +60°C with some duration. Any necessary derating shall be accounted for during sizing and submitted with the technical bid.	May the offered DRPC system, which delivers 90% output at +50°C and is sized considering a minimum 10% derating margin, be considered compliant with the specification?	Refer Addendum no. 3 and 4 of Set-2.
24	II	TS	Chapter-1	Clause 1.4.30	8	1.4.32 Each module of the DRPC unit/system shall have the same ampere/kVAR rating and shall offer enhanced capacity by increasing the height of the DRPC unit, rather than requiring additional floor area.	May the offered DRPC system comprising parallel module ratings of 50A + 100A + 100A to achieve total 250A capacity be considered compliant with the specification?	Bidder's suggestion are not acceptable. For More clarification refer tender conditions. Tender conditions are self explanatory. Tender conditions prevails.
25	II	TS	Chapter-1	Clause 1.4.37	10	1.4.37 Contractor shall ensure that the due to the fault in the DRPC system it should not trip the LV MDB of E&M system as well as 33kV System of Traction system. Necessary incoming and outgoing breakers in DRPC system to be provided to disconnect the DRPC system in case of fault and avoid the transmission of fault in the another E&M and Traction working network.	May spare outgoing breakers available at RSS, ASS or TSS be utilized for the DRPC system, and may provision of an integral main incoming breaker inside the DRPC system be considered compliant with the specification in place of both incoming and outgoing breakers, particularly for small rating 50A and 100A DRPC systems?	In MDB Panel, GMRCL shall typically allow the use of spare breakers in range of 250A to 160A rating in each section of bus-bar. At Certain location, breaker may be of 100A also. For interchange station, UG station and Depot the CB rating shall be different which shall be provided at the time of detailed design. However, as an preliminary reference, the Auxiliary Transformer rating of each station is provided in Annexure-1 of Addendum-2 for assessing the tentative breaker capacities in MDB Panel. Supply, Installation, Testing, commissioning and integration of all other required accessories, contactors, cables, terminals, etc. of appropriate size required to complete the successful connection from DRPC unit to MDB Panel shall be under the bidder's scope and is already covered in the BOQ.
26	II	TS	Chapter-1	Clause 1.4.45	10	1.4.45 The DRPC manufacturer should demonstrate that, latency between reactive power change at RSS, command generated from master unit at RSS location, and units located at different locations (RSS and multiple ASS) shall function as a single system with SCADA integration, adjusting their reactive power output simultaneously in response to reactive power fluctuations in the network, to achieve desired power factor correction at the RSS incomer (feedback point).	May each DRPC system at RSS and multiple ASS locations operating independently in real time to meet the reactive power demand of its respective location be considered compliant with the specification?	Tender conditions are self explanatory. Please follow tender conditions.

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27	I & II	FOT, NIT and SCC	-	Form of Tender, Key Details, Sub-Clause 8.2	FOT Page 4, NIT Page 3, SCC Page 11	<p>FOT:1. Having inspected the Site, examined the General Conditions of Contract, Special Conditions of Contract, Condition of Contract on Safety & Health and Environment, Scope of Work & Technical Specifications for Phase I. Bill of Quantities, and addenda thereto (if any) issued by the GMRC for the Design, Supply, Installation, Testing and Commissioning & Annual Maintenance Works of the above mentioned Works, and the matters set out in Appendix 1 hereto, and having completed and prepared Appendices 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 17A, 18, 18A, 19, 19A, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29 & 30 hereto, we hereby (jointly and severally)* offer to execute and complete the whole of the said Works and Commissioning and remedying any defects therein, in conformity with the above documents within the completion period of 45 months (from the date of Commencement) for the sum stated in the Bill of Quantities (Volume 3 of Tender Documents) as completed by us and appended hereto.</p> <p>NIT: (d) Completion Period of work Total 45 Months / 3.75 Years (excl. DLP) (A) 09 Months of Execution of Work (B) 36 Months of CAMC</p> <p>SCC: Sub-Clause 8.2 Replaced existing last para with following para of sub-clause 6.2) Time for Completion (Time Period) The contract period is 09 months for execution of woks from the issue of letter of acceptance plus 2 years of DLP and 3 years of CAMC period post completion of DLP period. However, GMRC at his own discretion may further extent the contract duration on Mutual Agreed term and condition without any additional cost to GMRCL.</p>	<p>Issues FOT mentions completion period of 45 months from the date of Commencement. NIT Key Details indicate total 45 months (9 months execution + 36 months CAMC) excluding DLP. However, SCC Clause 8.2 states contract period is 9 months for execution plus 2 years DLP and 3 years CAMC, which totals 69 months.</p> <p>Query: Kindly confirm the correct completion period. Is the execution period 9 months? Does the DLP run concurrently with CAMC or sequentially? Should the FOT be corrected to read 9 months for execution instead of 45 months?</p>	<p>DLP and CAMC will run sequentially (i.e. 2 years of DLP and then 3 Years CAMC).</p> <p>Contract period is defined in the SCC.</p> <p>Tender conditions are self explanatory.</p> <p>Please follow tender conditions.</p>
28	II & III	TS and IIT	Chapter-1	Clause 1.4.15, Clause 1.4.16, and Capitalized	TS Page 7,18,20, and Capitalized	<p>1.4.15. The heat loss (in kW) together with the control and cooling power consumption in each DRPC unit shall not exceed 1.5% of its rated capacity (in kVAR).</p> <p>1.4.16. Each DRPC unit shall feature intelligent control technology that minimizes internal heat loss under each operating condition (such as current grid voltage, DRPC loading, operating temperature, harmonics to be cancelled, etc.) in real time, ensuring the unit's internal heat loss remains as low as possible. Therefore, the resultant full-load efficiency shall be more than 98.5%.</p> <p>10. Combined Operating Efficiency (%) ≥98.5% 38. Maximum Losses <2% a. Capitalization of heat Losses in terms of relevant clause of Appendix-5 A of FOT. The methodology for calculation of Capitalization of heat loss of DRPC system is provided as under To evaluate a Price Bid, the Employer shall also consider the following clause:</p> <p>The DSTATCOM/Active Power Filter shall be designed for minimum loss. When comparing between different Tenderers, the present value of the capitalised cost of loss in the DSTATCOM/Active Power Filter shall be added to their Price Bid by</p>	<p>Issues: Multiple contradictions in efficiency and losses requirements. • Clause 1.4.15 limits total losses (heat loss + control + cooling) to ≤ 1.5% • Clause 1.4.16 requires efficiency > 98.5% (losses < 1.5%) • Datasheet Row 10 requires efficiency ≥ 98.5% (losses ≤ 1.5%) • Datasheet Row 38 requires Maximum Losses < 2% (losses up to 2%, efficiency > 98%)</p> <p>Additionally, ITT Page 24 includes a capitalized cost of losses formula for financial evaluation.</p> <p>Query: (a) Which requirement prevails? Is the acceptable maximum losses 1.5% or 2%? (b) If the intent is to relax the limit to 2% (or 2.5%) for compliance purposes while keeping the capitalized loss formula for financial evaluation, kindly confirm the same in writing so that all bidders are treated uniformly. (c) Will any bidder with losses between 1.5% and 2% be rejected as non-compliant, or will they only face a financial penalty through the capitalized loss formula?</p>	Refer Addendum no. 7 and 8 of Set-2.

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SN	Vol	Section	TS Chapter	Clause No.	Page No.	Tender Condition	Bidder's Query	GMRC's Clarification, dated: 20/05/2026
				Heat Loss Formula	III Page 24	<p>the following formula: $Pw = K \times 365 \times 24 \times C \times (Wheat_total) / 1000$ Wherein, Pw = present worth (in INR) of annual capitalised cost of losses at 8% rate of interest over 20 years $K = \text{Present worth factor (8\% interest, 20 years)} = \{ (1 + 0.08)^{20} - 1 \} / \{ 0.08 \times (1 + 0.08)^{20} \} = 9.82$ $C = \text{Cost per unit energy in INR} = 8.36 \text{ per Kwh}$ $Wheat_total = \text{Total heat losses quoted by bidder in FOT Appendix 5-A in watt per 100 KVAR. For evaluation it shall be compounded for 11,000 KVAR to derive at total heat losses}$ If at the time of inspection, if the losses of the unit found to be more than guaranteed in Appendix 5-A then the penalty as per following formula shall be imposed on the contractor. $= 719.153 \times (d \times Wheat_total)$ Where, d Wheat_total is the difference between the heat loss guaranteed under Appendix-5A of FOT per 100KVAR and actual measured at the time of inspection at rated supply voltage and an ambient temperature of 50 degree per 100KVAR.</p>		
29	II&I	TS and FOT	Chapter-1	Clause 1.4.15, Clause 1.4.26 and Appendix 5A	TS Page 6,8 FOT Page 12	<p>1.4.15. The heat loss (in kVv) together with the control and cooling power consumption in each DRPC unit shall not exceed 1.5% of its rated capacity (in kVAR).</p> <p>1.4.26. The DRPC system shall deliver 100% output at an ambient temperature of +50°C (with relative humidity up to 95%), and should operate up to +60°C with some duration. Any necessary derating shall be accounted for during sizing and submitted with the technical bid.</p> <p>Appendix 5A. Requirements for Tenderer's Technical Proposals A1. The Tenderer's attention is drawn to the List of Definitions and List of Abbreviations in the Volume-2 Work's Requirements and to Clause 1 of the General Conditions of Contract in which terms are defined. A2. The Tenderer's Technical Proposals shall comply or, subject to reasonable development, be capable of complying with the Work's Requirements in all respects. The Tenderer's Technical Proposals shall demonstrate such compliance. The Tenderer's Technical Proposals shall establish the intended safety standards followed and installation and testing practices. A3. The following paragraphs list the minimum documentation that shall be supplied by the Tenderer to enable technical evaluation of</p>	<p>Issues: No measurement methodology specified, and 50°C ambient temperature is impractical for routine FAT and SAT. The document requires 100% output and heat loss declaration at 50°C ambient temperature. Achieving stable 50°C during Factory Acceptance Test or Site Acceptance Test is impractical without a specialized climate-controlled chamber, which is not standard industry practice. Additionally, the document does not specify the test procedure, instrumentation class, or sampling plan for measuring losses.</p> <p>Query: (a) What is the approved test procedure for measuring total auxiliary power consumption (losses) during FAT and SAT? (b) What class of measuring instrument (e.g., Class-A Power Quality Analyzer) is acceptable? (c) Will measurement be conducted at full rated capacity on every DRPC panel, or on a representative sample? If sample, what is the acceptable sampling plan? (d) Instead of 50°C, can testing be conducted at a standard ambient temperature of 30°C to 40°C (recorded during test) uniformly for all bidders, to ensure practical and fair test conditions?</p>	<p>a. The methodology for measurement of losses shall be as per applicable IEC/IEEE/EN standard as defined in Technical Specification.</p> <p>b. Bidders are allowed to use subject to compliance of tender specifications.</p> <p>c. The type test report should not be less than 5 years from the date of NIT and type test report shall also be as per Contract requirement. In case of non availability of type test report then bidder has to perform type test without additional cost to GMRCL.</p> <p>d. Bidder's suggestion not acceptable. Bidders to follow contract conditions and applicable standards for testing.</p> <p>Tender conditions are self explanatory.</p> <p>Please follow tender conditions.</p>

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Tender No. GMRCL/TR/PF improvement/2026 (Clarification Set-1)								
SN	Vol	Section	TS Chapter	Clause No.	Page No.	Tender Condition	Bidder's Query	GMRC's Clarification, dated: 20/05/2026
30	II	TS	Chapter-1	Clause 1.4.18	7	1.4.18. Each DRPC unit shall be equipped with a password-protected HMI (minimum 11 inches) mounted on the front, suitable for programming, monitoring, and controlling the unit's performance.	<p>Issues:Minimum 11-inch HMI requirement for each DRPC unit is not standard industrial practice. The clause requires each DRPC unit to be equipped with a password-protected HMI of minimum 11inches. However:</p> <ul style="list-style-type: none">• The tender already requires central workstations at RSS and OCC with 24-inch screens (as per SCADA integration requirements).• Multiple clauses require remote monitoring, control, and programming of DRPC units from these central workstations.• When accessed remotely, the HMI screen can be maximized to fit the 24-inch workstation monitor, providing full visibility and control.• The on-panel HMI is primarily for local access (commissioning, maintenance, troubleshooting, or network failure scenarios).• 7-inch is the standard industrial size for panel-mounted HMIs at the unit level. <p>Query: Will GMRC relax the requirement to minimum 7 inches for the panel-mounted HMI on each DRPC unit, given that full monitoring and control is also available on the 24-inch central workstation screens as per SCADA integration requirements?</p>	Refer Addendum No. 9 of Set-2.
31	II	TS	Chapter-1	Clause 1.4.19(b)	7	1.4.19. The HMI shall allow monitoring electrical network parameters, and DRPC parameters to have the following features: b)Recording of 50,000 events.	<p>Issues: Recording of 50,000 events is excessive and impractical. The clause requires the HMI to have recording capability for 50,000 events. At a typical rate of 4 events per day, 50,000 events would store more than 34 years of data, which is far beyond operational requirements. A large event buffer also increases HMI loading time and memory requirements without practical benefit.</p> <p>Query: Will GMRC consider relaxing this requirement to 1,000 to 2,000 events, which at 4 events per day would still provide more than 1 year of data storage?</p>	Refer Addendum No. 10 of Set-2.

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SN	Vol	Section	TS Chapter	Clause No.	Page No.	Tender Condition	Bidder's Query	GMRC's Clarification, dated: 20/05/2026
32	II	TS	Chapter-1	Clause 2.5.2, Clause 1.4.5, Clause 1.4.13, Clause 1.4.60	5,6,13,16	<p>2.5 Performance Testing 2.5.2 Detailed test reports, including: a) Final PF values b) Harmonic levels c) Compensation behaviour d) Communication integration shall be submitted for GMRC's review and acceptance.</p> <p>1.4.5. The DRPC system will be configured as a shunt system to maintain an overall power factor and control current harmonics in all three phases at the grid substation connection point. The contractor will be responsible for designing the system to ensure that total demand distortion (TDD) and Total Harmonic Distortion (THD) remains within the limits set by IEEE standards and relevant CEA guidelines.</p> <p>1.4.13. Each DRPC unit should perform functions such as reactive power compensation, negative-sequence current compensation, and current harmonic correction (2nd to 51st order).</p> <p>1.4.60. The DRPC system shall be able to filter individual harmonic components so that THD (voltage and current) can be minimized up to limits as per IEEE519.</p>	<p>Issues: Ambiguity regarding THD measurement locations and harmonic cancellation requirements. The tender requires harmonic level reporting as part of Performance Testing (Clause 2.5.2). However, there is ambiguity regarding the scope of harmonic cancellation and measurement: (a) Should THD be measured only at the RSS incomer (grid connection point) as per Clause 1.4.5, or also at each ASS and TSS where DRPC units are installed? (b) Is the DRPC system required to cancel current harmonics at each ASS/TSS location (as implied by Clause 1.4.13), or is harmonic control required only at the RSS incomer level (as implied by Clause 1.4.5)? (c) What are the specific TDD limits for voltage and current at each measurement location? Kindly specify the applicable IEEE 519 limits or provide a table of acceptable values.</p> <p>Query: Kindly clarify the harmonic performance requirements, including measurement locations, limits, and load conditions, to enable proper design and testing of the DRPC system.</p>	<p>a. THD and TDD shall be measured at each DRPC unit and correction and control shall be applied at each location in such a manner that at the point of Common coupling the values of THD and TDD shall be controlled within the limit of Grid code/international standard.</p> <p>b. Please refer reply mentioned in point no. (a).</p> <p>c. Limits defined in IEEE 519 is self-explanatory. Bidder to consider the same during the detailed design of equipment and submit to GMRCL for approval.</p> <p>Tender conditions are self explanatory.</p> <p>Please follow tender conditions.</p>
33	II	TS	Chapter-1	Clause 1.1.2, Clause 1.4.5, Clause 1.4.13, Clause 1.4.60	2,5,6,13	<p>1.1.2. The main objective of the work is to improve the true power factor up to 0.99 at 132KV incomers of RSS (at Point of Common Coupling), Depot and ASS/TSS of GMRC. The targeted power factor is to be read 0.99 (true PF) instead of unity PF in all tender document. The equipment offered should be based on the latest state of the art technology and having maximum energy efficiency and best performance.</p> <p>1.4.5. The DRPC system will be configured as a shunt system to maintain an overall power factor and control current harmonics in all three phases at the grid substation connection point. The contractor will be responsible for designing the system to ensure that total demand distortion (TDD) and Total Harmonic Distortion (THD) remains within the limits set by IEEE standards and relevant CEA guidelines.</p> <p>1.4.13. Each DRPC unit should perform functions such as reactive power compensation, negative-sequence current compensation, and current harmonic correction (2nd to 51st order).</p> <p>1.4.60. The DRPC system shall be able to filter individual harmonic components so that THD (voltage and current) can be minimized up to limits as per IEEE519.</p>	<p>Issues: The 11,000 KVAR capacity may be insufficient when both PF correction and harmonic cancellation are required. The DRPC system is required to perform both: • Power factor correction to achieve ≥ 0.99 at RSS incomer • Current harmonic cancellation (2nd to 51st order) to achieve $TDD_i < 5\%$ as per IEEE 519 The same KVAR capacity is shared between both functions. The capacity available for harmonic correction reduces if the reactive power correction requirement is significant, potentially making the $TDD_i < 5\%$ target unachievable with 11,000 KVAR.</p> <p>Query: (a) Has GMRC conducted a harmonic load study at each ASS and TSS to determine the expected harmonic currents? (b) If yes, kindly share the harmonic profile data to enable accurate sizing. (c) If no, will GMRC allow the contractor to measure actual harmonic levels during the site survey (Clause 1.2.11) and revise the KVAR capacity upward if found necessary, with corresponding price adjustment? (d) Alternatively, is the 11,000 KVAR capacity intended only for power factor correction, with harmonic cancellation provided within the same capacity without additional KVAR? (e) If the first priority is PF correction to achieve ≥ 0.99, and with the cap on 11,000 KVAR capacity, kindly confirm that harmonic cancellation shall be affected (reduced) to the extent necessary, and the $TDD_i < 5\%$ target may not be achievable under high reactive power demand conditions.</p>	<p>Tender conditions are self-explanatory.</p> <p>Bidder to follow tender conditions.</p> <p>Tender conditions shall prevail.</p>

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SN	Vol	Section	TS Chapter	Clause No.	Page No.	Tender Condition	Bidder's Query	GMRC's Clarification, dated: 20/05/2026
34	II	TS	Chapter-2	Clause 2.1 Table Sr No 4	17	2.1 Technical Datasheet for DRPC system 4 Ambient Temperature (°C) 50°C (Derating applicable after 40°C)	Issues: The clause "Derating applicable after 40°C" creates uncertainty regarding capacity sizing. The datasheet requires ambient temperature performance of 50°C with derating applicable after 40°C. However, different DRPC products have different derating characteristics: • Some products require no derating up to 50°C • Some products begin derating at 45°C • Some products begin derating at 40°C If a product requires derating above 40°C, additional KVAR capacity may be needed to deliver the required 11,000 KVAR output at 50°C. Conversely, if a product requires no derating up to 50°C, no additional capacity is required. Query: (a) Will GMRC allow bidders whose products require derating above 40°C to offer additional DRPC capacity (over and above the 11,000 KVAR) to ensure that the full required output is delivered at 50°C ambient? (b) For bidders whose products require no derating up to 50°C, no additional capacity shall be required, and they may quote based on 11,000 KVAR only.	Bidder's attention is drawn that, the present tender is of Design and built kind of nature. Bidder has to do the detailed design and determine the actual size of KVAR capacity based on the system study and based upon their design methodology and derating factor of their respective product. It is to clarify that, in BOQ bidders have to quote per KVAR cost and based on actual total requirement of KVAR, payment shall be process as per tender conditions. 11,000 KVAR is considered as one reference value which may varied as per detailed design and payment in case of variation shall be governed as per applicable BOQ and GCC/SCC contract conditions. Tender conditions are self explanatory. Please follow tender conditions. For Derating, refer Addendum no. 3 & 4 of Set-2.
35	II	TS	Chapter-2	Datasheet 2.1, S.No. 29, and Clause 2.2.7	18, 21	2.1 Technical Datasheet for DRPC system 29.Meeting performance & operation flexibility of DRPC in each ASS during changeover from RSS-1 to RSS-2 or vice versa. All DRPC panels will be integrated together under a common network. They will be able to communicate with each other. All 33kV Breaker status details available in the OCC should be given to DRPC system in order to determine the operating status of each ASS and RSS to enable the DRPC system to take immediate decisions and in the event of any changes in the mode of operation (i.e. ASS is shifted from RSS-1 to RSS-2 or ASS shifted from CKT-1 to CKT-2) the same should be immediately detected and appropriately action should be taken by the DRPC network to maintain the desired PF in all RSS. 2.2.7. Contractor shall design their SCADA monitoring system in such a manner that it shall not affect the working of existing SCADA system of Traction-GMRCL. Further, the access to existing SCADA system of GMRCL shall not be granted to the contractor and it is also the responsibility of contractor to do no breach any kind of existing Traction SCADA security. If in any case, it is found that the functioning of existing Traction SCADA system has affected/compromised due to the DRPC contractor's working then the penalty of INR 5,00,000/- + actual cost of rectification shall be recovered from the DRPC contractor. (i.e. contractor of subject matter tender)	Issues: Real-time automatic detection of RSS change-over conflicts with SCADA security requirements. Datasheet 2.1, S.No. 29 requires the DRPC system to automatically detect changes in operating mode (e.g., ASS shifted from RSS-1 to RSS-2 or CKT-1 to CKT-2) and take immediate action to maintain PF. This would require real-time access to 33kV breaker status from OCC SCADA, which contradicts Clause 2.2.7 that prohibits SCADA access due to security reasons. We propose an alternative approach that respects GMRC's SCADA security requirements: Query: Kindly confirm acceptance of this approach, where the DRPC system uses an independent network over GMRC's fiber-optic backbone, and master-slave configuration changes are performed manually by the operator through the DRPC workstation as part of SOP, rather than automatic real-time detection from SCADA.	Bidder's suggestion for manual changeover operation through DRPC workstation is not acceptable. Bidder shall be permitted to use only spare cores of existing OFC cables for communication establishment from station and RSS to OCC for remote monitoring and operation. Neessary ports and ethernet switches as required to be provided at DRPC system as well as at TER room shall be under the contractor's/bidder's scope. Bidder to follow the tender conditions. Tender conditions are self-explanatory.

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36	II	TS	Chapter-2	Clause 2.4.6	26	2.4.6 Contractor has to depute the person on site within 12 hrs of the registration of the complaint/assistance call. In case of delay from the contractor in deployment of person on site, the penalty shall be applied at 5,000/- per hour for the delay caused by contractor in deployment of person.	Issues: 12-hour response time for on-site deployment is impractical. The clause requires the contractor to depute a person on site within 12 hours of complaint registration, with a penalty of INR 5,000 per hour for delay. Considering the following factors: • The metro network covers a wide geographical area across Ahmedabad Phase-I and Phase-II • Traffic congestion, especially during peak hours • Availability of trained personnel and required test equipment • The need to arrange spares before dispatch A 12-hour window is extremely challenging for a metro rail environment Query: Will GMRC consider relaxing the response time to 24 hours from the registration of complaint/assistance call? This is more practical and aligns with industry standards for metro rail maintenance contracts.	Refer Addendum No. 11 of Set-2.																																								
37	I	ITT	-	Clause C2.4	12	C2.4 There is ‘NO’ waiver and exemption from the Government for GST, Taxes, Duties, other Royalties, Levies, etc., payable to various authorities. In respect of Customs Duty, benefits as provided in the Custom’s Notification No.7/2007-Customs dated 22.01.2007 read with Notification No.42/96-Customs dated 23.07.1996 shall be available for Ahmedabad / Surat Metro Rail Project. The Tenderer should ensure to avail Customs Duty benefit under Chapter 98.01 and pass it on to GMRC. GMRC will facilitate the Tenderer in getting registration for benefits under Chapter 98.01. It is the responsibility of the bidder to verify these and all other concessions prevailing as on date of tender submission and account for in the tender quoted price. With the tender submission, the tenderer shall submit the proof of GST Registration in the state of Gujarat or shall submit an undertaking that he will get registered with GST authorities in the state of Gujarat in case of award of LOA to them.	Issues: Requirement for GST registration in Gujarat. The tender requires the bidder to have GST registration in Gujarat or submit an undertaking to obtain the same. However, our firm is already GST registered in Maharashtra and can execute the project from our existing registered office, paying IGST on inter-state supplies as per GST law. Quesy: Will GMRC grant exemption from obtaining a separate GST registration in Gujarat, allowing us to execute the work using our existing GST registration from Maharashtra by paying IGST on all supplies under this contract?	The registration of GST in any state in India is acceptable.																																								
						<p style="text-align: center;">FORM OF TENDER - APPENDIX 7 STAFFING SCHEDULES AND ORGANISATION CHART</p> <p>The tenderer shall submit with his Tender a Project Management Plan and demonstrate that it has the following personnel for the key positions that meet the following requirements:</p> <table><tr><th>S. No</th><th>Position</th><th>Minimum No. of staff Requirement</th><th>Qualification</th><th>Total work Experience (years)</th><th>Experience in the field of DRPC system</th><th colspan="2">Deployment at Ahmedabad</th></tr><tr><th></th><th></th><th></th><th></th><th></th><th></th><th>Start</th><th>End</th></tr><tr><td>1.</td><td>Project Manager/Dy. Project Manager</td><td>1</td><td>B.Tech E.E./E.E.E</td><td>7</td><td>3</td><td>NTP</td><td>UPTD execution period of 9 months</td></tr><tr><td>2.</td><td>Design Engineer</td><td>1</td><td>B.Tech E.E./E.E.E</td><td>5</td><td>3</td><td>NTP</td><td>NTP to 3 months/till Design works end</td></tr><tr><td>3.</td><td>Installation & Commissioning of Site Engineer</td><td>2 Team</td><td>Diploma/B.Tech in E.E./E.E.E</td><td>3</td><td>2</td><td>2 month after NTP</td><td>Till completion of commissioning and integration of works</td></tr></table>	S. No	Position	Minimum No. of staff Requirement	Qualification	Total work Experience (years)	Experience in the field of DRPC system	Deployment at Ahmedabad								Start	End	1.	Project Manager/Dy. Project Manager	1	B.Tech E.E./E.E.E	7	3	NTP	UPTD execution period of 9 months	2.	Design Engineer	1	B.Tech E.E./E.E.E	5	3	NTP	NTP to 3 months/till Design works end	3.	Installation & Commissioning of Site Engineer	2 Team	Diploma/B.Tech in E.E./E.E.E	3	2	2 month after NTP	Till completion of commissioning and integration of works	Issues: Mandatory deployment of 8 full-time staff at project site is excessive for this scale of work. Appendix 7 requires the contractor to deploy the following staff at site: • Project Manager / Dy. Project Manager — 1 no. • Design Engineer — 1 no. • Installation & Commissioning Site Engineer — 2 Team* • SCADA Design cum Installation & Commissioning Engineer — 1 Team* • Field Service Engineer — 2 no	For (d) :- Bidder's suggestion are not acceptable. Tender conditions are self explanatory. Please follow tender conditions. For (a) ,(b) and (c) refer addendum no. 12 of Set-2.
S. No	Position	Minimum No. of staff Requirement	Qualification	Total work Experience (years)	Experience in the field of DRPC system	Deployment at Ahmedabad																																										
						Start	End																																									
1.	Project Manager/Dy. Project Manager	1	B.Tech E.E./E.E.E	7	3	NTP	UPTD execution period of 9 months																																									
2.	Design Engineer	1	B.Tech E.E./E.E.E	5	3	NTP	NTP to 3 months/till Design works end																																									
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38	I	FOT	-	Appendix 7 (Staffing Schedule)	19	<table><tr><td>4.</td><td>SCADA Design cum Installation & Commissioning Engineer</td><td>1 Team</td><td>Diploma/B.Tech in E.E./E.C./E.E.E.</td><td>3</td><td>2</td><td>2 month after NTP</td><td>Till completion of commissioning and integration of works.</td></tr><tr><td>5.</td><td>Field Service Engineer</td><td>2 no.</td><td>Diploma in E.E./E.E.E.</td><td>2</td><td>1</td><td>To be available at site within the 12 hrs. of registration of complaint and as and when required for CAMC works of system.</td><td>Services to be provided from starting of DLP to till completion of CAMC period.</td></tr><tr><td>6.</td><td>SHE Engineer</td><td>1</td><td>Diploma/B.Tech in any engineering discipline with the diploma certificate in Fire and Safety from the AICTE accredited university.</td><td>3</td><td>1</td><td>month after NTP</td><td>Till DLP End</td></tr></table> <p>The Bidder shall submit the undertaking for deploying the personnels having the qualification and experience as mentioned in above table in case of award of tender as per deployment schedule.</p> <p>Please note that in case GMRCL/GEC judges that the continuation of any person of the tenderer including its subcontractor (s) is not in the interest of project, a written notice will be given to tenderer, who has to promptly remove the person within a week. GMRCL/GEC can withdraw the approval of any persons at any stage during execution.</p> <p>* Team comprising of all necessary Engineering and Technical Staff and the team size shall be increased as per instructions of the Engineer in case the contractor is not able to achieve progress as per key dates.</p> <p>Further, it is to be noted that, in case of non-deployment of above staff by the successful bidder as per deployment schedule, INR 1,00,000/- per Month penalty shall be imposed. Successful bidder has to submit the attendance record of staff deployed at Ahmedabad office.</p>	4.	SCADA Design cum Installation & Commissioning Engineer	1 Team	Diploma/B.Tech in E.E./E.C./E.E.E.	3	2	2 month after NTP	Till completion of commissioning and integration of works.	5.	Field Service Engineer	2 no.	Diploma in E.E./E.E.E.	2	1	To be available at site within the 12 hrs. of registration of complaint and as and when required for CAMC works of system.	Services to be provided from starting of DLP to till completion of CAMC period.	6.	SHE Engineer	1	Diploma/B.Tech in any engineering discipline with the diploma certificate in Fire and Safety from the AICTE accredited university.	3	1	month after NTP	Till DLP End	<p>Field Service Engineer — 2 no.</p> <p>• SHE Engineer — 1 no.</p> <p>The document also imposes a penalty of INR 1,00,000 per month for non-deployment of the above staff as per schedule.</p> <p>However, for a project of this size and duration, such a large full-time site presence is not justified. Most of the labour and installation works will be sub-contracted to local electrical contractors in Ahmedabad. The bidder proposes to operate with a rotational staff policy, where personnel will travel to the site as and when required based on project needs, rather than being stationed permanently at site. Staff may be based at a different location (e.g., Maharashtra) and visit site as required.</p> <p>Query:</p> <p>(a) Will GMRC grant exemption from the requirement of deploying all 8 staff members permanently at the project site?</p> <p>(b) Will GMRC accept a rotational staff policy, where key personnel visit the site as per project requirements rather than being stationed full-time at site?</p> <p>(c) Kindly confirm that the penalty of INR 1,00,000 per month for non-deployment shall not be applicable if the contractor adopts a rotational staff policy and completes the work satisfactorily within the stipulated timeline.</p> <p>(d) Alternatively, will GMRC allow the contractor to sub-contract installation and commissioning works to local electrical contractors in Ahmedabad, and treat their staff as fulfilling the deployment requirement?</p>	
4.	SCADA Design cum Installation & Commissioning Engineer	1 Team	Diploma/B.Tech in E.E./E.C./E.E.E.	3	2	2 month after NTP	Till completion of commissioning and integration of works.																									
5.	Field Service Engineer	2 no.	Diploma in E.E./E.E.E.	2	1	To be available at site within the 12 hrs. of registration of complaint and as and when required for CAMC works of system.	Services to be provided from starting of DLP to till completion of CAMC period.																									
6.	SHE Engineer	1	Diploma/B.Tech in any engineering discipline with the diploma certificate in Fire and Safety from the AICTE accredited university.	3	1	month after NTP	Till DLP End																									
39	II	TS	Chapter-1	Clause 1.2.1	2	To provide 33kV/0.415KV IGBT based D-STATCOM at the LV side at each RSS, ASS, TSS of GMRCL stations and depot.	Power factor at TSS shall be maintained by the Manufacturer of the Rolling Stock provider. Vendor shall mitigate the reactive power demand of the Auxiliary Section. Need further clarification at what voltage level compensator equipment is to be installed. As mentioned in 1.4.20, D-STATCOM should be connected at each RSS and ASS taking CT feedback from RSS and ASS.	Bidder's understanding is not correct.																								
								Tender conditions are self-explanatory.																								
								Please follow tender conditions.																								
40	II	TS	Chapter-1	Clause 1.4.7.	6	All current transformers supplied as part of the DRPC system must have a minimum class 0.2 accuracy to ensure proper harmonic filtering operation.	Please clarify CT Class 0.2 Accuracy at each ASS, in order to maintain the Harmonic Filtering at ASS for ASS Loads only.	Tender conditions are self-explanatory.																								
								Please follow tender conditions.																								
41	II	TS	Chapter-1	Clause 1.4.15	6	The heat loss (in kW) together with the control and cooling power consumption in each DRPC unit shall not exceed 1.5% of its rated capacity (in kVAR).	Heat loss (in kW) shall not exceed 2% of rated capacity (in kVAR)	Refer Addendum no. 7 of Set-2.																								

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42	II	TS	Chapter-1	Clause 1.4.16	6	Each DRPC unit shall feature intelligent control technology that minimizes internal heatloss under each operating condition (such as current grid voltage, DRPC loading, operatingtemperature, harmonics to be cancelled, etc.) in real time, ensuring the unit's internalheat loss remains as low as possible. Therefore, the resultant full-load efficiency shall bemore than 98.5%.	Resultant total full-load efficiency shall be greater than or equal to 98%	Refer Addendum no.8 of Set-2.																																				
43	II	TS	Chapter-1	Clause 1.4.15 & Clause 1.4.16	6	1.4.15. The heat loss (in kW) together with the control and cooling power consumption in each DRPC unit shall not exceed 1.5% of its rated capacity (in kVAR). 1.4.16. Each DRPC unit shall feature intelligent control technology that minimizes internal heat loss under each operating condition (such as current grid voltage, DRPC loading, operating temperature, harmonics to be cancelled, etc.) in real time, ensuring the unit's internal heat loss remains as low as possible. Therefore, the resultant full-load efficiency shall be more than 98.5%. All test required pertaining to SCADA communication and remote operation and control of system.	InPhase submits formal technical calculations to justify the heat loss and efficiency deviations, specifically addressing the transition from the 1.5% threshold to the considered 2% limit. <table><tr><td>PARAMETER</td><td>VALUE</td><td>UNIT</td></tr><tr><td>K</td><td>9.82</td><td>-</td></tr><tr><td>DAYS</td><td>365</td><td>-</td></tr><tr><td>HOURS</td><td>24</td><td>-</td></tr><tr><td>C</td><td>8.36</td><td>₹/KWH</td></tr><tr><td>PENALTY / KWH</td><td>719.153</td><td>₹/KWH</td></tr><tr><td>HEAT LOSS GUARANTEED BY BIDDER PER 100 KVAR</td><td>2000</td><td>W</td></tr><tr><td>TOTAL KVAR</td><td>11000</td><td>KVAR</td></tr><tr><td>TOTAL HEAT LOSS IN WATT</td><td>220000</td><td>W</td></tr><tr><td>TOTAL PENALTY AS PER INPHASE SPECIFICATIONS</td><td>₹ 15,82,13,869</td><td>₹</td></tr><tr><td>TOTAL PENALTY AS PER TENDER SPECIFICATIONS PANEL</td><td>₹ 11,86,60,402</td><td>₹</td></tr><tr><td>DIFFERENCE IN PENALTY</td><td>₹ 3,95,53,467</td><td>₹</td></tr></table>	PARAMETER	VALUE	UNIT	K	9.82	-	DAYS	365	-	HOURS	24	-	C	8.36	₹/KWH	PENALTY / KWH	719.153	₹/KWH	HEAT LOSS GUARANTEED BY BIDDER PER 100 KVAR	2000	W	TOTAL KVAR	11000	KVAR	TOTAL HEAT LOSS IN WATT	220000	W	TOTAL PENALTY AS PER INPHASE SPECIFICATIONS	₹ 15,82,13,869	₹	TOTAL PENALTY AS PER TENDER SPECIFICATIONS PANEL	₹ 11,86,60,402	₹	DIFFERENCE IN PENALTY	₹ 3,95,53,467	₹	For Heat loss and efficiency, kindly refer Addendum No. 7 and 8 of Set-2.
PARAMETER	VALUE	UNIT																																										
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DIFFERENCE IN PENALTY	₹ 3,95,53,467	₹																																										
44	II	TS	Chapter-1	Clause 1.4.20	8	The DRPC units located at RSS and ASS locations as a part of DRPC system shall take feedback from the CTs, PTs at the respective location, to achieve desired performance and to avoid overloading of transformer (beyond 80% of the installed capacity). A suitable number of current transformers (CTs), summation CTs of class 0.2 type shall be provided.	Please provide loading on each transformer for each ASS and RSS.	Loading on transformer is dynamic in nature. Identification of loading pattern of transformer is the part of Bidder's detailed design as per technical specification clause 1.2.10 and 1.2.11. Tender conditions are self-explanatory. Please follow tender conditions.																																				
45	II	TS	Chapter-1	Clause 1.4.26	8	The DRPC system shall deliver 100% output at an ambient temperature of +50°C (with relative humidity up to 95%), and should operate up to +60°C with some duration. Any necessary derating shall be accounted for during sizing and submitted with the technical bid.	The DRPC system shall deliver 100% output at an ambient temperature of maximum +50°C (with relative humidity up to 95%) without deration. However, deration features should be included in D-STATCOM panel for operating at any set temperature till 50°C.	Refer Addendum no. 3 & 4 of Set-2.																																				

"Design, Detail Engineering, Supply, Erection, Testing and Commissioning of Reactive Power Compensation and power quality Improvement along with associated equipments & integration with existing protection and SCADA system for Ahmedabad metro rail projects Phase-1 & 2".																																																					
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46	III	Bill of Quantities	Chapter-1	Clause 1.1.2.4	1	The Type testing in NABL accredited LAB, in-plant testing, and acceptance tests,	Type test shall be conducted as per Power Electronics Panel standards as per IEC()	Bidder's suggestion are not acceptable. For More clarification refer tender conditions. Tender conditions are self explanatory. Tender conditions prevails.																																													
46	III	Bill of Quantities	Chapter-1	Clause 1.11.7 - 1.11.12	11 to 15	<table><tr><th colspan="5">Terms of Payment</th></tr><tr><th>S. No</th><th>Milestone No</th><th>Activity</th><th>Supply</th><th>Erection</th></tr><tr><td>1</td><td>Milestone No 1</td><td>Acceptance of Design & Detail Engineering</td><td>5%</td><td></td></tr><tr><td>2</td><td>Milestone No 2</td><td>Supply of D-STATCOM along with other associated equipments</td><td>60%</td><td></td></tr><tr><td>3</td><td>Milestone No 3</td><td>Installation of D-STATCOM along with other associated equipments</td><td>5%</td><td>70%</td></tr><tr><td>4</td><td>Milestone No 4</td><td>Testing & Commissioning and Integration with SCADA</td><td>5%</td><td>10%</td></tr><tr><td>4</td><td>Milestone No 5</td><td>Supply of O&M documentation, Transfer of Technology plan, and all other items required as per specifications and Training of GMRCL staff.</td><td>5%</td><td>20%</td></tr><tr><td>5</td><td>Milestone No 6</td><td>Successful completion of DLP 1st year</td><td>10%</td><td></td></tr><tr><td>6</td><td>Milestone No 7</td><td>Successful completion of DLP 2nd year</td><td>10%</td><td></td></tr></table>	Terms of Payment					S. No	Milestone No	Activity	Supply	Erection	1	Milestone No 1	Acceptance of Design & Detail Engineering	5%		2	Milestone No 2	Supply of D-STATCOM along with other associated equipments	60%		3	Milestone No 3	Installation of D-STATCOM along with other associated equipments	5%	70%	4	Milestone No 4	Testing & Commissioning and Integration with SCADA	5%	10%	4	Milestone No 5	Supply of O&M documentation, Transfer of Technology plan, and all other items required as per specifications and Training of GMRCL staff.	5%	20%	5	Milestone No 6	Successful completion of DLP 1st year	10%		6	Milestone No 7	Successful completion of DLP 2nd year	10%		Request to consider 10% Basic against Drawing Approval 80% Basic + 100% taxes against Receipt of Material 10% Basic against Commissioning for submission of equivalent PBG valid for DLP.	Bidder's suggestion are not acceptable. For More clarification refer tender conditions. Tender conditions are self explanatory. Tender conditions prevails.
Terms of Payment																																																					
S. No	Milestone No	Activity	Supply	Erection																																																	
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47	III	Bill of Quantities	Chapter-1	Clause 1.11.10.	14	Compensation shall include for completion of all kind of site testing and integrated testing of DRPC system installed at all station with SCADA system at all 6 RSS and at OCC, configuration of SCADA system for remote monitoring and operation as defined in the specifications.	It is stated that there shall be total of 6 RSS. Please confirm the distribution of the RSS along with the respective ASS. Please fill the "Appendix-1A: Station List" spreadsheet to ensure completeness of data	The details of distribution of the RSS along with the respective ASS is dynamic in nature. These details will be provided to successful bidder. For more clarification please refer Annexure 1 of Addendum 2																																													
48	III	BOQ EXCEL		1.1	17	33kV/0.415kV IGBT-based D-STATCOM along with other associated equipments - 11,000 KVAR	Please clarify if the 11,000 KVAR requirement is for each RSS or total RSS. Please clarify the calculation.	Tender conditions are self explanatory. Please follow tender conditions.																																													
49	III	BOQ EXCEL		Clause 2.1 -2.3	18	33kV/0.415kV IGBT-based D-STATCOM along with other associated equipments - 11,000 per KVAR 1st year	Please clarify the statement.	Tender conditions are self explanatory. Please follow tender conditions.																																													

"Design, Detail Engineering, Supply, Erection, Testing and Commissioning of Reactive Power Compensation and power quality Improvement along with associated equipments & integration with existing protection and SCADA system for Ahmedabad metro rail projects Phase-1 & 2".								
Tender No. GMRCL/TR/PF improvement/2026 (Clarification Set-1)								
SN	Vol	Section	TS Chapter	Clause No.	Page No.	Tender Condition	Bidder's Query	GMRC's Clarification, dated: 20/05/2026
50	I	TS	Chapter-2	Clause 2.5	27-28	Appendix 1A: Station List	InPhase requests the comprehensive station list for both Phase-1 and Phase-2, categorized as per the provided format in Appendix 1A: Station List.	Station list for both Phase-1 and Phase-2 has been provided in Clause 2.5 Kindly refer the same.
51	I	TS	Chapter-2	Clause 2.5	28	Appendix 1A: Station List	InPhase requests detailed cable specifications and routing information for Phase-1 and Phase-2 as per the provided format in Appendix 1A: Station List.	Tender conditions are self explanatory. Tender conditions shall prevail.
52	I	TS	Chapter-2	Clause 2.5	28	Appendix 1B; Cable info	InPhase requests the consolidated total cable details for Phase-1 and Phase-2, as per the technical requirements outlined in the format for Appendix 1B: Cable Info.	Tender conditions are self explanatory. Tender conditions shall prevail.
53	I	NIT		Clause 1.1.3	5	The tenders for this contract will be considered only from those tenderers (proprietorship firms, partnerships firms, companies, corporations, consortia or joint ventures) who meet requisite eligibility criteria prescribed in the sub-clauses of Clause 1.1.3 of NIT. In the case of a JV or Consortium, all members of the Group shall be jointly and severally liable for the performance of whole contract.	1. Allow participation of our LLP through an authorized dealer arrangement, against the attached credentials of Power Solution Services and Qsine Energy Solutions LLP and 2. Consider such participation without the need for forming a JV/Consortium, subject to submission of authorization letter and necessary undertakings.	The LLP firm can participate under this tender. However, the participating firm can use their own credential only for qualification.
54		NA		NA	NA	NA	As there are lot of Erection work also involved. Can we participate in TENDER through any EPC contractor and we will supply the equipment as a OEM.	Bidder's suggestion are not acceptable. For More clarification refer tender conditions. Tender conditions are self explanatory. Tender conditions prevails.
55	II	TS	Chapter-1	Clause 1.1.2	2	1.1.2. The main objective of the work is to improve the true power factor up to 0.99 at 132KV incomers of RSS (at Point of Common Coupling), Depot and ASS/TSS of GMRC. The targeted power factor is to be read 0.99 (true PF) instead of unity PF in all tender document. The equipment offered should be based on the latest state of the art technology and having maximum energy efficiency and best performance.	"The main objective of the work is to improve the true power factor up to 0.99 at 132KV incomers of RSS (at Point of Common Coupling), Depot and ASS/TSS of GMRC."- Whether you want to maintain true PF up to 0.99 at only 132 KV of RSS or in each Depot, ASS and TSS also. Because if want to compensate 33KV cable capacitance from ASS or Depot, then we need to generate additional reactive power, due to which in individual ASS/TSS PF will not be maintained. However at main 132 KV point of common coupling it will be maintained.	Tender conditions are self-explanatory. Please follow tender conditions. Tender conditions shall prevail.

"Design, Detail Engineering, Supply, Erection, Testing and Commissioning of Reactive Power Compensation and power quality Improvement along with associated equipments & integration with existing protection and SCADA system for Ahmedabad metro rail projects Phase-1 & 2".								
Tender No. GMRCL/TR/PF improvement/2026 (Clarification Set-1)								
SN	Vol	Section	TS Chapter	Clause No.	Page No.	Tender Condition	Bidder's Query	GMRC's Clarification, dated: 20/05/2026
56	II	TS	Chapter-1	Clause 1.2	2	1.2 The brief scope of the works includes Design, Detailed Engineering, Supply, Erection, Testing and Commissioning of 33kV/0.415kV Reactive Power Compensation and power quality Improvement device (D-STATCOM) along with other associated equipments & integration with existing protection and SCADA system for Ahmedabad metro rail projects Phase-1 & 2.	"The brief scope mentioned as Testing and Commissioning of 33kV/0.415kV Reactive Power Compensation and power quality Improvement device."- Whether the reactive power compensation system design need to be done at only 415V only can be combine with both 33kV & 415V.	All the DRPC units will be provide at 415V side. For More clarification refer tender conditions (Clause 1.4.3) Tender conditions are self explanatory. Tender conditions prevails.
57	II	TS	Chapter-1	Clause 1.2.4	2	1.2.4. To arrange inspection by GMRCL officials for routine test, Type test, Factory Acceptance Test and Site test for various items used in the subject work.	"To arrange inspection by GMRCL officials for routine test, Type test, Factory Acceptance Test and Site test for various items used in the subject work."- It will be as per OEM Quality Assurance Plan.	Bidder shall have to take approval of quality assurance plan from GMRCL
58	II	TS	Chapter-1	Clause 1.2.5	3	1.2.5. To undertake all kind of civil works like preparation of foundations at RSS (if required), cable tray and dropper arrangement, cutout preparation, earthing arrangement for equipment, etc. for putting the system in successful operation.	"To undertake all kind of civil works like preparation of foundations at RSS (if required), cable tray and dropper arrangement, cutout preparation, earthing arrangement for equipment, etc. for putting the system in successful operation."- For this detail site survey required along with GMRCL personnel.	The site survey has been conducted at 11:00 Hrs on 06.05.2026 Refer S. No. 05 of Addendum Set-1.
59	II	TS	Chapter-1	Clause 1.2.7	3	1.2.7. To provide the all kind of sensing instruments like CT ,Rogowski coil, PT and all other kind of measuring equipment.	"To provide the all kind of sensing instruments like CT ,Rogowski coil, PT and all other kind of measuring equipment."- Whether Existing CT can be used or not. If new CT need to provide, then respective busbar details need to provide.	Bidder have to provide the seperate summation CT and other CT for measurement and protection of appropriate rating in the LV MDB Panel. If at any station, any spare CT available then GMRCL may allow the same based on site conditions. However, the complete discretion for allowing the use of Existing CT is up to GMRCL. Final rating of bus-bar shall be provided to successful bidder seperately. However, as an preliminary reference the Auxiliary Transformer rating of each station hs been provided in Annexure-1 of Addendum-2.
60	II	TS	Chapter-1	Clause 1.2.9	3	1.2.9. To obtain all kind of statutory approval for installation, testing, commissioning and putting in to the services.	"To obtain all kind of statutory approval for installation, testing, commissioning and putting in to the services."- GMRCL Support required in this regard	All kind of liasoning to be done by bidder with respective agencies. GMRCL shall only extend the support through written correspondence. Bidder to refer tender conditions. Tender conditions are self-explanatory.
61	II	TS	Chapter-1	Clause 1.2.11	3	1.2.11. To do the site survey for at least 3 to 5 days by measuring the actual power factor at all RSS of Ahmedabad Phase-I and Phase-II during the revenue hours and non-revenue hours and take the consideration of the same in design of system.	"To do the site survey for at least 3 to 5 days by measuring the actual power factor at all RSS of Ahmedabad Phase-I and Phase-II during the revenue hours and non-revenue hours."- GMRCL need to inform the available dates for the same. Also the power line SLD required.	Refer Addendum No. 5 of Set-1. Bidder to refer tender conditions. Tender conditions are self-explanatory.
62	II	TS	Chapter-1	Clause 1.4.4	5	1.4.4. The rating of DRPC system shall be selected in such a manner as to ensure that the ASS transformers remains below 80% of their rated KVA capacity.	"The rating of DRPC system shall be selected in such a manner as to ensure that the ASS transformers remains below 80% of their rated KVA capacity."- Need the transformer details in RSS, Depor, ASS/TSS.	Details of Auxiliary Transformer of each ASS-TSS, ASS, RSS of Depot, Mainline and Underground is provided in Annexure-1 of Addendum 2. Kindly refer the Addendum S. No. 5 of Addendum set-2.

"Design, Detail Engineering, Supply, Erection, Testing and Commissioning of Reactive Power Compensation and power quality Improvement along with associated equipments & integration with existing protection and SCADA system for Ahmedabad metro rail projects Phase-1 & 2".

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SN	Vol	Section	TS Chapter	Clause No.	Page No.	Tender Condition	Bidder's Query	GMRC's Clarification, dated: 20/05/2026
63	II	TS	Chapter-1	Clause 1.4.5	5	1.4.5. The DRPC system will be configured as a shunt system to maintain an overall power factor and control current harmonics in all three phases at the grid substation connection point. The contractor will be responsible for designing the system to ensure that total demand distortion (TDD) and Total Harmonic Distortion (THD) remains within the limits set by IEEE standards and relevant CEA guidelines.	"The contractor will be responsible for designing the system to ensure that total demand distortion (TDD) and Total Harmonic Distortion (THD) remains within the limits set by IEEE standards and relevant CEA guidelines."- To design as per IEEE standards, we need the short circuit current level at 132KV and also the maximum Demand.	Short-circuit level at 132kV level is 40KA for 3 Sec. Maximum demand at each RSS is varying. The data for the same shall be provided to successful bidder.
64	II	TS	Chapter-1	Clause 1.4.6	5	1.4.6. The DRPC system will feature a modular design with 15% redundancy. If any unit of the DRPC system or the master unit fails, the remaining DRPC units will continue to operate. The entire DRPC system (all master and slave units) will achieve 100% compensation through dynamic reactive power control within 10 milliseconds (including the communication and/or transmission delays/latencies) from the time reactive power requirement is detected at the RSS location.	"The entire DRPC system (all master and slave units) will achieve 100% compensation through dynamic reactive power control within 10 milliseconds (including the communication and/or transmission delays/latencies) from the time reactive power requirement is detected at the RSS location."- The end goal is to maintain the Power Factor at 132 KV point of common coupling. For that master slave communication is not mandatory. As the station to station distance is fixed, the cable properties also fixed. The additional KVAR requirement for cable capacitance will almost stable, with slight variation due to voltage. The individual equipment will be able to compensate the reactive power and Harmonic requirement as per local CT feedback. It can generate additional KVAR for cable capacitance as a fixed value. However the balance compensation will be done at RSS taking the CT feedback from 33kV/132 kV as per requirment. Regarding remote control for individual equipment from RSS can be provided using existing GMRCL Telecom network through Scada.	Bidder's suggestion are acceptable. However, the detailed design is under the successful bidder's scope. Bidder to design as per contract specifications and submit the same at Detailed Design Stage for approval of GMRCL.
65	II	TS	Chapter-1	Clause 1.4.8	6	1.4.8. Communication between the main DRPC module controller and its IGBT modules should occur via an optical link to ensure galvanic isolation of more than 2.5 kV.	"Communication between the main DRPC module controller and its IGBT modules should occur via an optical link to ensure galvanic isolation of more than 2.5 kV."- As this is Modular based solution, so for invidual module for the communication between controller and IGBT Gate driver card will be through flat cables, however high voltage isolation will be provided for all the safety and protection.	Bidder's suggestion are not acceptable. For More clarification refer tender conditions. Tender conditions are self explanatory. Tender conditions prevails.
66	II	TS	Chapter-1	Clause 1.4.15	6	1.4.15. The heat loss (in kW) together with the control and cooling power consumption in each DRPC unit shall not exceed 1.5% of its rated capacity (in kVAR).	"The heat loss (in kW) together with the control and cooling power consumption in each DRPC unit shall not exceed 1.5% of its rated capacity (in kVAR)." - Is it possible to consider higher loss (>1.5%) at full load of its rated capacity.	Refer Addendum no. 7 of Set-2.
67	II	TS	Chapter-1	Clause 1.4.16	6	1.4.16. Each DRPC unit shall feature intelligent control technology that minimizes internal heat loss under each operating condition (such as current grid voltage, DRPC loading, operating temperature, harmonics to be cancelled, etc.) in real time, ensuring the unit's internal heat loss remains as low as possible. Therefore, the resultant full-load efficiency shall be more than 98.5%.	"Therefore, the resultant full-load efficiency shall be more than 98.5%." - Is it possible to consider efficiency of 97%.	Refer Addendum no.8 of Set-2.
68	II	TS	Chapter-1	Clause 1.4.26	8	1.4.26. The DRPC system shall deliver 100% output at an ambient temperature of +50°C (with relative humidity up to 95%), and should operate up to +60°C with some duration. Any necessary derating shall be accounted for during sizing and submitted with the technical bid.	"The DRPC system shall deliver 100% output at an ambient temperature of +50°C (with relative humidity up to 95%), and should operate up to +60°C with some duration", however in page 39, TDS point no 4, mentioned as "50degC (Derating applicable after 40degC)". Please clarify the same, as no power electronics product run at 60degC. We can comply "50degC (Derating applicable after 40degC)", as per TDS.	Refer Addendum no. 3 & 4 of Set-2.

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SN	Vol	Section	TS Chapter	Clause No.	Page No.	Tender Condition	Bidder's Query	GMRC's Clarification, dated: 20/05/2026
69	II	TS	Chapter-1	Clause 2.1	14	2.1 Quality Assurance Plan (QAP)	"Quality Assurance Plan" - It'll be as per Manufacturer QAP	Bidder shall have to take approval of quality assurance plan from GMRCL For More clarification refer tender conditions. Tender conditions are self explanatory. Tender conditions prevails.
70	II	TS	Chapter-1	Clause 2.2.1 (a)	14	a) EMI-EMC compatibility , immunity and emission test as per IEC 61000, 60146.	EMI-EMC compatibility , immunity and emission test as per IEC 61000, 60146. Do we need to do the test at OEM factory or any 3rd party lab, or we can provide the test report for the modules we'll propose for this solution will be acceptable as per IEC61000 ?	Refer reply to clarification no. 4 of Set-1. Tender conditions are self explanatory. Tender conditions prevails.
71	II	TS	Chapter-1	Clause 2.2.1 (b)	14	b) Rated current capability test for IGBT module as per IEC 60146.	Rated current capability test for IGBT module as per IEC 60146. Not applicable in Type Test, will this be necessary?	Bidder's suggestion are not acceptable. For More clarification refer tender conditions. Tender conditions are self explanatory. Tender conditions prevails.
72	II	TS	Chapter-1	Clause 2.2.1 (c)	14	c) Ingress of Protection testing for complete Panel as per IEC 60529.	Ingress of Protection testing for complete Panel as per IEC 60529. IP test do we need to do test with any 3rd party vendor? Only for Cabinet or for the modules also need IP test?	Bidder's suggestion are not acceptable. For More clarification refer tender conditions. Tender conditions are self explanatory. Tender conditions prevails.
73	II	TS	Chapter-1	Clause 2.2.1 (d)	14	d) Rated current capability test (output current) as per IEC 60146.	Rated current capability test (output current) as per IEC 60146. Not applicable in Type Test, will this be necessary?	Bidder's suggestion are not acceptable. For More clarification refer tender conditions. Tender conditions are self explanatory. Tender conditions prevails.
74	II	TS	Chapter-1	Clause 2.2.1 (e)	14	e) Overcurrent capability test as per IEC 60146.	Overcurrent capability test as per IEC 60146. Not applicable in Type Test, will this be necessary?	Bidder's suggestion are not acceptable. For More clarification refer tender conditions. Tender conditions are self explanatory. Tender conditions prevails.
75	II	TS	Chapter-1	Clause 2.2.1 (f)	14	f) Temperature rise test.	Temperature rise test. Can be done at OEM factory for the modules as per OEM Tech. specs.	Bidder's suggestion are not acceptable. For More clarification refer tender conditions. Tender conditions are self explanatory. Tender conditions prevails.

"Design, Detail Engineering, Supply, Erection, Testing and Commissioning of Reactive Power Compensation and power quality Improvement along with associated equipments & integration with existing protection and SCADA system for Ahmedabad metro rail projects Phase-1 & 2".

Tender No. GMRCL/TR/PF improvement/2026 (Clarification Set-1)

SN	Vol	Section	TS Chapter	Clause No.	Page No.	Tender Condition	Bidder's Query	GMRC's Clarification, dated: 20/05/2026
76	II	TS	Chapter-1	Clause 2.2.1 (g)	14	g) Power loss determination and efficiency test as per IEC 60146.	Power loss determination and efficiency test as per IEC 60146. Can be done at OEM factory for the modules as per OEM Tech. specs and test report can be submitted	Bidder's suggestion are not acceptable. For More clarification refer tender conditions. Tender conditions are self explanatory. Tender conditions prevails.
77	II	TS	Chapter-1	Clause 2.2.1 (h)	14	h) Checking of automatic control as per IEC 60146.	Checking of automatic control as per IEC 60146. Can be submitted in routine test re	Bidder's suggestion are not acceptable. For More clarification refer tender conditions. Tender conditions are self explanatory. Tender conditions prevails.
78	II	TS	Chapter-1	Clause 2.2.1 (i)	14	i) Measurement of audible noise as per IEC 60146.	Measurement of audible noise as per IEC 60146. Can be submitted in routine test re	Bidder's suggestion are not acceptable. For More clarification refer tender conditions. Tender conditions are self explanatory. Tender conditions prevails.
79	II	TS	Chapter-1	Clause 2.2.1 (j)	14	j) Measurement of ripple voltage and current test as per IEC 60146.	Measurement of ripple voltage and current test as per IEC 60146. Not applicable in Type Test, will this be necessary?	Bidder's suggestion are not acceptable. For More clarification refer tender conditions. Tender conditions are self explanatory. Tender conditions prevails.
80	II	TS	Chapter-1	Clause 2.2.1 (k)	14	k) Short-Circuit test as per IEC 60146.	Short-Circuit test as per IEC 60146. Not applicable in Type Test, will this be necessary?	Bidder's suggestion are not acceptable. For More clarification refer tender conditions. Tender conditions are self explanatory. Tender conditions prevails.
81	II	TS	Chapter-1	Clause 2.3.2 (h)	15	h) Validation of control mechanism for D-STATCOM (DSP functionality to be checked).	Validation of control mechanism for D-STATCOM (DSP functionality to be checked). - Not applicable during FAT test.	Bidder's suggestion are not acceptable. For More clarification refer tender conditions. Tender conditions are self explanatory. Tender conditions prevails.
82	II	TS	Chapter-1	Clause 2.3.2 (j)	15	j) All test required pertaining to SCADA communication and remote operation and control of system.	All test required pertaining to SCADA communication and remote operation and control of system. - Not applicable during FAT test, can be provided all the SCADA protocol & reg address for the same.	Test pertaining to SCADA communiation and remote operation and control of system shall be performed at Site. Refer Addendum No. 13 of Set-2.

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SN	Vol	Section	TS Chapter	Clause No.	Page No.	Tender Condition	Bidder's Query	GMRC's Clarification, dated: 20/05/2026
83	II	TS	Chapter-2	Clause 2.1 Table Sr No 7	17	7. Reaction Time <= 0.1 ms	Reaction Time mentioned as "<=2 ms (1 power cycle)" - Is it possible to consider <=10msec.	Bidder's suggestion are not acceptable. For More clarification refer tender conditions. Tender conditions are self explanatory. Tender conditions prevails.
84	II	TS	Chapter-2	Clause 2.1 Table Sr No 16 & 17	18	16. DC Capacitors Type- DC film type capacitors 17. DC Capacitor connection- Non-PCB based DC capacitor	DC Capacitor type "DC Film capacitor" and Connection "Non PCB based DC Capacitor" - Is it possible to comply with Electrolyte type capacitor, which is also has higher life like Film type.	Bidder's suggestion are not acceptable. For More clarification refer tender conditions. Tender conditions are self explanatory. Tender conditions prevails.
85	II	TS	Chapter-2	Clause 2.1 Table Sr No 19	18	19. PWM reactor connection- Non-PCB based PWM reactor	PWM Reactor connection "Non PCB based PWM Reactor" - Is it possible to consider PCB based, as our product is truly modular design.	Tender conditions are self explanatory. Tender conditions prevails.
86	II	TS	Chapter-2	Clause 2.1 Table Sr No 25	18	25.HMI Event Logs- Min 50, 000	HMI Event Logs "Min 50, 000" - is it possible to consider 20,000 event logs for HMI	Refer Addendum No. 10 of Set-2.
87	II	TS	Chapter-2	Clause 2.1 Table Sr No 34	19	34.Colour- RAL 7048	"RAL 7048" - Is it possible to consider RAL 7035	Bidder's suggestion are not acceptable. For More clarification refer tender conditions. Tender conditions are self explanatory. Tender conditions prevails.
88	II	TS	Chapter-2	Clause 2.1 Table Sr No 38	19	38.Maximum Losses <2%	Maximum loss <2% - Is it possible to consider <3%?	Refer Addendum no. 7 of Set-2