Annexure A

Title	**TECHNICAL PREBID CLARIFICATIONS.**
Customer	**GUJARAT ENERGY TRANSMISSION CORPORATION LIMITED**
Project	**DESIGN, ENGINEERING, MANUFACTURING, SUPPLY, ERECTION, TESTING & COMMISSIONING OF ±125 MVAR STATCOM AT 220KV SAGAPARA SUBSTATION ON TURNKEY BASIS**
	OP24101451063 Dtd.: 21-Apr -2025.

S.No	Reference Document	Clause No	Page No	Existing clause	Clarification / Confirmation Required	GETCO Clarifications
A	**Clarifications with respect to STATCOM:**					
1	Tech specifications for STATCOM / TS –STATCOM 045 / R1 dated 17.08.2024	Cl. No. 3 Scope of work	3 of 53	In order to get optimum control of MVAR, as well as any existing capacitor and reactor banks (if installed) shall be integrated along with STATCOM control to provide steady state 220 kV bus voltage control in a smooth manner.	We would like to inform you that, as there's no indication about the number of HV shunts elements to be connected to Statcom controls which the STATCOM control system shall control. and also the switching logic for these elements are missing. Accordingly "On/Off signals must come from outside the STATCOM control system". Request you to accept the same.	As per specification, "In order to get optimum control of MVAR, as well as any existing capacitor and reactor banks (if installed) shall be integrated along with STATCOM control to provide steady state 220 kV bus voltage control in a smooth manner." Accordingly, STATCOM shall control the devices (if installed). As there are no capacitor or reactor banks connected in the existing substation, the switching logic will be decide during detailed engineering.
2	Tech specifications for STATCOM / TS –STATCOM 045 / R1 dated 17.08.2024 & Annexure-II	Cl. No. 6.2.2 Harmonic calculation:	13 of 53	The scope shall be considered as per Annexure-II. Harmonic calculation: Chapter 7.3 of CIGRE Publication 139 together with information in PSSE network files given shall be used for the Network harmonic impedance.	We propose use the CIGRE 139 approach to create Network Harmonic Impedance. We understand inputs for Harmonic Analysis will not change during project stage. Please confirm.	**GETCO will provide details with NDA, (i) PSS/E software file for All India Network model file as Load Flow model, (ii) Credible Contingencies of GETCO Network: important / critical transmission elements in the Gujarat network considered. Bidder may also have considered Credible Contingency based on CEA planning Criteria, 2023, (iii) Dynamic file (.dyr) file or data available with GETCO, (iv) if dynamic data is not available for any transmission element, generic data shall be considered based on CEA planning Criteria 2023.**
3	Tech specifications for STATCOM / TS –STATCOM 045 / R1 dated 17.08.2024	Cl. No. 6.1.8 STATCOM Station Response	12 of 53	STATCOM station response shall be such that the change in measured system voltage to small disturbance should reach 90% of the desired total change within 30 ms of the initiating a 5% step change of voltage reference	We would like to inform you that, the STATCOM response shall have rise time within 40 ms, overshoot below 120 % and settling time within 100 ms. Please confirm	It shall be as per technical specification.
4	Tech specifications for STATCOM / TS –STATCOM 045 / R1 dated 17.08.2024	5.1 STATCOM Station Ratings	6 of 53	The STATCOM Station should continue to generate reactive power during temporary under voltage down to 33kV (0.15pu) for the duration 5 sec (Point C); the STATCOM system may be tripped (or blocked) if the under voltage persists for more than 5 sec.	We request M/s GECTO to please modify the statement as : **"The STATCOM Station should continue to generate reactive power during temporary under voltage down to 33kV (0.15pu) for the duration 0.3ms (Point C); the STATCOM system may be tripped (or blocked) if the under voltage persists for more than 0.3 sec."**	The respective clause has been amended. Kindly refer to Addendum.
5	Tech specifications for STATCOM / TS –STATCOM 045 / R1 dated 17.08.2024	6.1.1 Control Objectives	7 of 53	The control system shall control the STATCOM required under this technical specification, as well as any existing switchable capacitor and reactor banks installed.	The control system software is OEM's Intellectual Property and cannot be shared or made re-programmable by customer. OEM will keep some margin for re-programming, but any possible re-programming must be done by OEM with additional price & time compensation. Request M/s GETCO to accept the same.	The respective clause has been amended. Kindly refer to Addendum.
6	Tech specifications for STATCOM / TS –STATCOM 045 / R1 dated 17.08.2024	6.1.2.6 Damping of Power Oscillations	8 of 53	The STATCOM shall provide necessary damping to power oscillations by modulating its output in its entire range based on measured active power or rate of change of frequency at the 220kV bus. The damping controller would track local area oscillations as well as wide area oscillations and control would include several loops each focused on different frequency.	The POD (Power Oscillation Damping) will be designed based on IEEE-1052-2018 standard and will have either frequency- or power-type input. The tuning will be performed based on main oscillation modes seen in large network PSSE simulations, if any. We request to kindly accept the same.	**The respective clause has been amended. Kindly refer to Addendum.** **GETCO will provide details with NDA, (i) PSS/E software file for All India Network model file as Load Flow model, (ii) Credible Contingencies of GETCO Network: important / critical transmission elements in the Gujarat network considered. Bidder may also have considered Credible Contingency based on CEA planning Criteria, 2023, (iii) Dynamic file (.dyr) file or data available with GETCO, (iv) if dynamic data is not available for any transmission element, generic data shall be considered based on CEA planning Criteria 2023.**
7	Tech specifications for STATCOM / TS –STATCOM 045 / R1 dated 17.08.2024	6.1.2.13 Control of Direct Current	9 of 53	During STATCOM operations, any flow of direct current to the transformer's MV side must be less than 25% of the transformer magnetizing current. DC current flow in the transformer should be minimized by an independent control function that minimizes DC current. For presence of up to 0.2% second harmonic in 400 kV system, the STATCOM control should minimize DC current flow in the transformer	VSC has DC current mitigation control which will decrease the DC current towards main transformer effectively. So VSC will meet the requirement. We request to kindly accept the same.	It is clearly mentioned that, current shall be minimized by independent control function. If offered VSC has this feature then what is the significance of query. it is not clear.
8	Tech specifications for STATCOM / TS –STATCOM 045 / R1 dated 17.08.2024	6.1.3 Under Voltage Strategy	10 of 53	The STATCOM must be designed to operate at transmission system under voltage, even considering that severe voltage unbalances can appear. The STATCOM must not be restricted by short term negative sequence voltages up to 1.5%, appearing in conjunction with under voltages	Due to delta connected VSC, DC-link balancing required zero sequence current to be injected within the delta in case of asymmetrical MV bus voltages. This means that STATCOM cannot produce unrestricted reactive current in case there is negative phase sequence component in network voltage regardless of the voltage level. During symmetrical voltage situations, the requirement can be met. We request to kindly accept the same.	During symmetrical voltage situation, there will not be any unbalance voltage at all. The functional requirement shall be as per specification.
9	Tech specifications for STATCOM / TS –STATCOM 045 / R1 dated 17.08.2024	8.1.5 - j)	Page 24 of 53	The cooling system should be designed and provided to permit work on faulty pump/ faulty fan without shutting down the system.	Valve Cooling system is designed with redundant fans/pumps . In case of failure of any fan/pump, redundant fan/pump will take over and the faulty fan/pump can be replaced during scheduled maintenance/ outage activity. Also working on the faulty pump/faulty fan during the time when adjacent equipment are running is a safety hazard and is not followed as per global safety practice. Please confirm our understanding.	The intent of specification is that, system should be taken over by redundant pump/fan and should continues running and not the running on fault pump/ fan.
10	Tech specifications for STATCOM / TS –STATCOM 045 / R1 dated 17.08.2024	Annexure-1	52 of 53	(1) Vendor should provide a detailed STATCOM system dynamics model for use in (PSSE / E33) power flow and stability simulation software The model detail should be appropriate and complete for positive-sequence power system simulation and analysis that is typically performed with power flow and transient stability programs. (2) Vendor should provide a detailed STATCOM transients model for use in PSCAD and EMT-RV. The model detail should be appropriate and complete for the transient response calculation of the STATCOM system.	OEM will provide an EMT model of the STATCOM in PSCAD that includes all the controllers and dynamics. This model will cover all the different fidelaity levels. We request to kindly accept the same.	**OEM has to provide STATCOM model in PSCAD including all data including dynamic model file for PSS/E software**
11	Tech specifications for STATCOM / TS –STATCOM 045 / R1 dated 17.08.2024	Annexure-1	52 of 53	GETCO will provide PSS/E file. The load flow model is covered in PSS/E file.	Customer provided Large Network Model (LNM) shall require no additional modifications besides addition of STATCOM model. If no data is available, a Thevenin equivalent with minimum and maximum SCL is assumed. OEM will not perform any fine tuning of the large-network models. Instead, a model that is ready for connection of STATCOM stations is expected from M/s GETCO, We request to kindly accept the same.	**PSS/E software file for All India Network model file as Load Flow model will be provided through NDA**
12	Tech specifications for STATCOM / TS –STATCOM 045 / R1 dated 17.08.2024	General			We request M/s GETCO to share the complete network model with all the controllers for Solar Generators / Wind generators properly modelled in it and OEM will not perform any fine tuning of the large-network models of the solar and Wind generators. "	**GETCO will provide, (i) PSS/E software file for All India Network model file as Load Flow model, (ii) Credible Contingencies of GETCO Network: important / critical transmission elements in the Gujarat network considered. Bidder may also have considered Credible Contingency based on CEA planning Criteria, 2023, (iii) Dynamic file (.dyr) file or data available with GETCO, (iv) if dynamic data is not available for any transmission element, generic data shall be considered based on CEA planning Criteria 2023.**
13	Tech specifications for STATCOM / TS –STATCOM 045 / R1 dated 17.08.2024	Annexure-1		Studies to evaluate the interaction of the STATCOM controls with the other nearby control systems, including high-voltage direct current (HVDC) controls, generator controls, and controls of other flexible AC transmission systems (FACTS) devices	In case a separate interaction study is required, OEM expects to receive a ready model of the system to be tested against. OEM shall perform no tuning of other nearby controllers such as HVDCs, generators or other FACTS devices. We request to kindly accept the same.	**GETCO will provide details with NDA, (i) PSS/E software file for All India Network model file as Load Flow model, (ii) Credible Contingencies of GETCO Network: important / critical transmission elements in the Gujarat network considered. Bidder may also have considered Credible Contingency based on CEA planning Criteria, 2023, (iii) Dynamic file (.dyr) file or data available with GETCO, (iv) if dynamic data is not available for any transmission element, generic data shall be considered based on CEA planning Criteria 2023.**
14	Tech specifications for STATCOM / TS –STATCOM 045 / R1 dated 17.08.2024	Cl, No. 10.2.2	46 of 53	The (factory acceptance test) simulator should provide an accurate network representation including network harmonic behaviour, as well as synchronous condensers, power stations, generators (with AVRs), and pump storage schemes, existing HVDC, SVCs and STATCOMs, future SVCs and STATCOMs, FSC (fixed series capacitors), and shunt reactors/capacitors/filters.	OEM shall use an extended network model or Thevenin equivalent model for grid representation for RTDS control and protection verification studies. OEM shall also benchmark some performance studies between RTDS and PSCAD. If dynamic models of nearby network is provided in RSCAD model, OEM shall include them in network the representation. We request to accept the same.	**Requirement is clearly mentioned in specification and it shall be as per specification.** **OEM has to provide STATCOM model in PSCAD including all data including dynamic model file for PSS/E software**

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15	Tech specifications for STATCOM / TS –STATCOM 045 / R1 dated 17.08.2024	Cl. No. 8.2.1 n	Page 26 of 53	All devices shall be interconnected via redundant Ethernet based IEC 61850	STATCOM control PLC is connected to the substation IEC 61850 SAS via a gateway. Communication between the STATCOM control PLCs and the gateway are with IEC 60870-5-104 or DNP3 protocol. We request to accept the same.	Clause specifies communication connectivity vis redundant ring. Accordingly, it shall be considered. Whereas Sagapara being Non SCADA substation, the gateway interface between SAS and STATCOM is not applicable
16	Tech specifications for STATCOM / TS –STATCOM 045 / R1 dated 17.08.2024	g. Tripping schemes -	Page 29 of 53	Duplicate high security tripping circuits for MV Circuit Breaker shall comprise two independent high speed (less than 10 ms) high burden (greater than 150 W) tripping relays for each circuit, each with its own independent DC supply.	We would like to inform you that, One trip relay and one DC supply is included per trip circuit. Trip relays cross-trip each others and DC supplies are connected parallel to each other via diode bridge. We request to accept the same.	Requirement is clearly mentioned in specification and it shall be as per specification.
17	Tech specifications for STATCOM / TS –STATCOM 045 / R1 dated 17.08.2024	Cl. No. 8.3.2 i	Page 29 of 53	All protection relays shall have facilities for monitoring trip circuits. Detection of an interruption in the case of a switched on circuit breaker shall be signalled.	Integrated trip circuit monitoring is included to the protection relays, which will supervise the trip circuit between protection relays and trip relay. Request to accept the same.	Requirement is clearly mentioned in specification and it shall be as per specification.
18	Tech specifications for STATCOM / TS –STATCOM 045 / R1 dated 17.08.2024	j. Test facilities	Page 29 of 53	Separate test facilities shall be provided for each current and voltage transformer secondary circuit so as to give access for testing of protection relays and associated circuits. The Test facility to be supplied shall have two selectable positions, a Service and a Test position. In the service Position, the test switch connects CTs and VTs signals to the Relays and trip commands to the circuit breaker trip coils. In the Test Position, the test switch applies a short-circuit to Current Transformer (CT) secondary windings and open circuits the VT secondary cores and allow injection of secondary current and voltage into the relay. At the same time, the Trip commands to the Circuit Breaker Trip Coils are isolated. The test switch supplied shall be to the Approval of the Owner.	Separate one-stage test switch will be provided for protection relay (block the CT/VT circuits) and trip relay (block the trip command to the braker). Request to accept the same.	Requirement is clearly mentioned in specification and it shall be as per specification.
19	Tech specifications for STATCOM / TS –STATCOM 045 / R1 dated 17.08.2024	STATCOM Branch Protection:	30 of 53	STATCOM Branch Protection: iv) Negative phase sequence protection (46)	Statcom will have Negative phase sequence control function however Negative Phase Sequence (46) protection will interfere with the control function and will result in Spurious tripping. Request to accept the same.	Requirement is clearly mentioned in specification and it shall be as per specification.
20	Tech specifications for STATCOM / TS –STATCOM 045 / R1 dated 17.08.2024			All applicable tests i.e. Operational Type Tests, Dielectric Type Tests and Test for valve insensitivity to electromagnetic disturbance and Production tests shall be done as per the latest edition of IEC 62927.	Only production tests are done for the project valves. Type test reports for similar valves will be provided and any type test repetition is not included. Request to accept the same.	The respective clause has been amended. Kindly refer to Addendum.
21	Tech specifications for STATCOM / TS –STATCOM 045 / R1 dated 17.08.2024	8.1.5 STATCOM Valve Cooling system -	23 of 53	The Valve cooling system shall have black start capability and necessary UPS/UMD shall be provided separately for each STATCOM Unit.	We would like to inform you that, It is not possible to guarantee any black start capability with UPS/UMD in case of prolonged AC-system outage, as coolant conductivity won't stay in safe to start condition in case cooling system has been stopped for prolonged time. Request to accept the same.	Prolonged outage is a subjective word. Looking to redundancy at multiple AC supply, Battery backup/UMD etc (i.e. ample resources) it shall be met as per specification.
22	Tech specifications for STATCOM / TS –STATCOM 045 / R1 dated 17.08.2024	8.1.5 (i) STATCOM Valve Cooling system -	23 of 53	The secondary cooling system shall be a redundant type such that it shall be possible to take out 10% (minimum one number) of the cooler module (fan unit) of secondary cooling system without affecting the rated performance of STATCOM).	The requirement is considered not to require redundant cooler units, but it is considered fulfilled, if there is minimum 10% redundant fans and equivalent cooling surface reserve on the cooler(s). Request to accept the same.	The redundancy shall be such that, the rated performance shall not be affected by removing 10% fan.
23	Tech specifications for STATCOM / TS –STATCOM 045 / R1 dated 17.08.2024	Type Test	A	It is clarified that offered equipment shall be Type tested as per RfP and subsequent clarification/ amendment (if any) issued. bidder shall decide the requirement of repetition of type test in line with CEA's "Guidelines for the type tests for major equipment of power sector" to the extent applicable.	Air core reactor & other equipment for which the validity period of type test are not specified in the CEA guideline, we will not considered any repetition of type test for those equipments or & type test will be validated using similarity with similar type of type tested equipment without any validity period. Kindly accept the same.	As per Getco Tech. Specification
1	Tech specifications for STATCOM / TS –STATCOM 045 / R1 dated 17.08.2024 & Ammendment -1 of 220KV Thard Part –I (SCC)/ Special Conditions of Contract	6.6.5 Clause 41.0 and its subclauses	15 &16 of 53 Page 13 of 18	LD/penalty for STATCOM Station Sub-System for each category of loss shall apply: a. Measured Loss exceeding in 0 to +5% band: Nominal LD rates. b. Measured Loss exceeding in >+5% to +10% band: Double of the nominal LD rates. c. Measured Loss exceeding +10% (>+10%) then the equipment shall be rejected. The LD amount calculated as per above shall be deducted from the contract price or otherwise recovered from the Contractor. LIQUIDATED DAMAGES (LD) :FOR DELAY:	We Request GETCO, that overall ceiling for performance liquidated damages (LD) payable by the Contractor shall be limited to a maximum of five percent (5%) of the Contract Price. Kindly accept the same	Requirement is clearly mentioned in specification and it shall be as per specification.
2	Tech specifications for STATCOM / TS –STATCOM 045 / R1 dated 17.08.2024	6.6.5	15 &16 of 53	LD/penalty for STATCOM Station Sub-System for each category of loss shall apply: a. Measured Loss exceeding in 0 to +5% band: Nominal LD rates. b. Measured Loss exceeding in >+5% to +10% band: Double of the nominal LD rates. c. Measured Loss exceeding +10% (>+10%) then the equipment shall be rejected. The LD amount calculated as per above shall be deducted from the contract price or otherwise recovered from the Contractor.	We request you to modify the subject clause be deleting Cl. (c) of 6.6.5 as mentioned below: ~~c. Measured Loss exceeding +10% (>+10%) then the equipment shall be rejected.~~	Requirement is clearly mentioned in specification and it shall be as per specification.
B	**Clarifications with respect to Control & Protection & SCADA:**					
1	Price Schedule: Supply : Protection BOQ for 1 no 220kv/xxkV ±125MVAr Statcom Bay at Sagapara Substation	Sl. No. a)1) or 2)		a. Control & Protection panels (having IEC 61850 Edition-2 as well as cyber security complaint IEDs for 220KV Bays…….. 2) SCADA Compatible Control & protection panel for coupling transformer HV bay (220kV/xxkV HV) to suite the STATCOM system requirement. OR 2) Convential Control & relay panel for coupling transformer HV bay (220kV/xxkV HV) to suite the STATCOM system requirement.	We would like to inform you that, existing SAGAPARA substation, bay control is with conventional control panel and no substation automation system is available. Hence we request M/s GETCO to confirm which option is to be selected	Suitability of Panel will be finalized at the time of detailed engineering based on system requirement. As in case of SCADA panel it is to be provided in STATCOM building non SCADA Panel is to be provided in existing Control room.
2	Price Schedule: Supply: Protection BOQ for 1 no 220kv/xxkV ±125MVAr Statcom Bay at Sagapara Substation	Sl. No. a)1) or 2)		Establishment of interface with exisiting control & relay panels for BC, TBC, LBB, PT selection, interlocking etc	We request M/s GETCO to please confirm space availability in existing control room to add new Transformer Bay control and protection panel.	Available
3	Price Schedule: Supply: Protection BOQ for 1 no 220kv/xxkV ±125MVAr Statcom Bay at Sagapara Substation	Sl. No. a)1) or 2)		Establishment of interface with exisiting control & relay panels for BC, TBC, LBB, PT selection, interlocking etc	We would like to inform you that, in the tender SLD, there is no BUS VT shown, please confirm if same existing.	Yes existing
4	Price Schedule: Supply : Protection BOQ for 1 no 220kv/xxkV ±125MVAr Statcom Bay at Sagapara Substation	Sl. No. a)1) or 2)		Establishment of interface with exisiting control & relay panels for BC, TBC, LBB, PT selection, interlocking etc	We request M/s GETCO to please confirm, if existing 220kV BC and TBC CB and DS/ES having sufficient contacts for interlocks.	Same will be provided at the time of detailed engineering
5	Price Schedule: Supply : SCADA BOQ for 1 No 220kv/xxkV ±125MVAr Statcom Bay at Sagapara Substation			SCADA BOQ for 1 No 220kv/xxkV ±125MVAr Statcom Bay at Sagapara Substation (To be provided in existing SCAGAPARA Substation control room)	We understand this SCADA BOQ pertains to remote HMI of main STATCOM SCADA to be provided in STATCOM Building. Please confirm.	BOQ is very clear that, it is for local SCADA at STATCOM Building as well as Remote SCADA system at existing Sagapara control room Also, SCADA Architecture clearly shows that.
6	Price Schedule: Supply : SCADA BOQ for 1 No 220kv/xxkV ±125MVAr Statcom Bay at Sagapara Substation			SCADA BOQ for 1 No 220kv/xxkV ±125MVAr Statcom Bay at Sagapara Substation (To be provided in existing SCAGAPARA Substation control room)	We request M/s GETCO to please confirm sufficient SPACE and air conditioning is available in existing Substation control room	Scope as per price schedule.
7	Price Schedule: Supply : SCADA BOQ for 1 No 220kv/xxkV ±125MVAr Statcom Bay at Sagapara Substation			SCADA BOQ for 1 No 220kv/xxkV ±125MVAr Statcom Bay at Sagapara Substation (To be provided in existing SCAGAPARA Substation control room)	We understand AC and DC supply feeders available for Aux supply for the SCADA panel and furniture console in existing control room building. Please confirm.	Available. Scope as per price schedule.
8	Price Schedule: Supply : SCADA BOQ for 1 No 220kv/xxkV ±125MVAr Statcom Bay at Sagapara Substation			SCADA BOQ for 1 No 220kv/xxkV ±125MVAr Statcom Bay at Sagapara Substation (To be provided in existing SCAGAPARA Substation control room) A,4. Gateway for SLDC	We understand GETCO will extend the communication link upto the GATEWAY. Please confirm our understanding.	As shown in SCADA architecture that, Gateway is a part of Local SCADA network for data to SLDC. Communication link from FOTE/Telecom Panel to SLDC will be on part of GETCO
9	Price Schedule: Supply : SCADA BOQ for 1 No 220kv/xxkV ±125MVAr Statcom Bay at Sagapara Substation			SCADA BOQ for 1 No 220kv/xxkV ±125MVAr Statcom Bay at Sagapara Substation (To be provided in existing SCAGAPARA Substation control room) A. 5. Firewall	Please provide technical specifications of firewall and if redundant firewall required for SLDC communication, in BOQ only 1 quantity is indicated, We request M/s GETCO to review the requirements and confirm the final BOQ	Quantity shall be as per price schedule. Regarding Specification, it is part of SAS specifications
10	Part 1 220KV Sagapara STATCOM	(1) A). A		(I) Scope of work : (Electrical) A) SCADA, (A) Complete Sub-Station automation including hardware & software for local control station along with associated equipments as defined in tech specifications.	We request M/s GETCO to confirm, if complete Sub-Station automation system is required for the SAGAPARA substation. As per the price schedule In SCADA BOQ same is not included.	Scope as per price schedule
11	General			Cyber security	As per CEA-CYBER SECURITY IN POWER SECTOR GUIDELINES 2021 please confirm the requirement for cybersecurity for the STATCOM SCADA. In BOQ same is not mentioned.	it is very well mentioned in price schedule as well as SAS architecture that, all the IEDs and system shall be cyber security compliant
12	General				As per latest CEA notification "Guideline on Unified Philosophy for Placement of Phasor Measurement Unit(PMUs) in Indian Grid, Annexure-I, Please confirm requirement of PMU for the SAGAPARA Statom scope.	Scope as per price schedule

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13	Part 1 220KV Sagapara STATCOM	1.5. TEST AND INSPECTION FOR INDIVIDUAL ITEM 5.0 QUALIFYING REQUIREMENT	67	The type test report shall not be older than 5 year from the date of tender opening (Technical bid opening). All the Equipments proposed to be supplied shall have valid type test certificates from any NABL accredited/Government laboratory of India or Abroad not older than 7 years & must be valid till the expiry of validity of offer.	We would like to inform you that, both referred clauses are contradictory. We understand type test reports validity for all equipments shall be as per latest CEA guidelines. Please confirm	It shall be as per Tech Specification.
C	**Clarifications with respect to Layout Drawings and Other primary electrical related points:**					
1	R7PART LAYOUT PLAN OF STATCOM PROJECT			R7PART LAYOUT PLAN OF STATCOM PROJECT	Reference to layout drawings furnished along with RFQ documents , we request M/s GETCO to confirm the following: 1. The existing 200kV gantry are extendable type. 2. We understand that, the dimension mentioned in the layout diagram for 220 KV Sagapara STATCOM is tentative, bidder can consider the dimensions as per the actual requirement of OEM.	220KV Side Bus extension is required & MV Side Supply and Erection of All MV Equipments as per design
2	Price schedule 2 Supply	G. 33. Suitable arrangement of 11kV connection :		3. Suitable arrangement of 11kV connection : (A) From separate 11kV Express feeder (Feeder termination shall be arranged by GETCO) to 11kV/415V,500KVA distribution transformer with support structure ,single dog conductor and DP structure with DO fuse,9kV LA,AB Switch,22kV Pin insulator arrangement etc. Suitable to distribution transformer (B) from 66/11Kv Station TR to 11kV/415V,500kVA distribution transformer with support structure single dog conductor and DP structure with DO fuse,9kV LA,AB Switch,22kV Pin insulator arrangement etc. Suitable to distribution transformer	We understand that for both Auxilary transformer 11kV equipment, separate 11kV Express feeder (Feeder termination shall be arranged by GETCO) to 11kV/415V,500KVA distribution transformer with support structure ,single dog conductor and DP structure with DO fuse,9kV LA,AB Switch,22kV Pin insulator arrangement , 66 KV cables, terminations and laying of the same etc. Suitable to distribution transformer shall be in scope of GETCO Please confirm our understanding.	Sope is very well specified in bid document. However, for further clarity is is mentioned hereunder. 11kV Cable up to LT switchyrad shall be provided by GETCO. All other aspects shall be in the scope of bidder.
3	Price schedule 2 Supply	G. 33. Suitable arrangement of 11kV connection :		3. Suitable arrangement of 11kV connection : (A) From separate 11kV Express feeder (Feeder termination shall be arranged by GETCO) to 11kV/415V,500KVA distribution transformer with support structure ,single dog conductor and DP structure with DO fuse,9kV LA,AB Switch,22kV Pin insulator arrangement etc. Suitable to distribution transformer	11kV cable and termination for the same are not mentioned in price schedule, we understand that 11kV cable and cable termination kits at both end for this connection shall be provided by GETCO. Please confirm.	11kV Cable up to LT switchyrad shall be provided by GETCO.
4	Price schedule 2 Supply	G. 33. Suitable arrangement of 11kV connection :		3. Suitable arrangement of 11kV connection : (B) from 66/11Kv Station TR to 11kV/415V,500kVA distribution transformer with support structure single dog conductor and DP structure with DO fuse,9kV LA,AB Switch,22kV Pin insulator arrangement etc. Suitable to distribution transformer	11kV cable and termination for the same are not mentioned in price schedule (BPS), we understand that 11kV cable and cable termination kits at both end for this connection shall be provided by GETCO. Please confirm.	11kV Cable up to LT switchyrad shall be provided by GETCO. All other aspects shall be in the scope of bidder.
5	Price schedule 2 Supply	G. 33. Suitable arrangement of 11kV connection :		3. Suitable arrangement of 11kV connection : (B) from 66/11Kv Station TR to 11kV/415V,500kVA distribution transformer with support structure single dog conductor and DP structure with DO fuse,9kV LA,AB Switch,22kV Pin insulator arrangement etc. Suitable to distribution transformer	We understand that laying of 11kV cable within proposed switchyard fence area shall be in bidder scope. We have not envisaged any scope outside the proposed substation fence area in bidder scope. Please confirm.	11kV Cable up to LT switchyrad shall be provided by GETCO. All other aspects shall be in the scope of bidder.
6	TS ILLUMINATION R9 250722 & 2 Supply (M. outdoor lighting point no.1)	Cl. No. 1.3 & Sl. No. M. outdoor lighting point no.1	3 of 30	For achieving the specified lux levels in the switchyard, the contractor can provide luminaries of 1x400 /1 x250 / 1x 150 W or 2x400/ 2x250/2x150 W flood light OR LED fixtures as per requirement	As per price schedule 2 Supply E 300(M. outdoor lighting point no.1), supply of HPSV Lamp is mentioned , however in the specification it is written that LED can be considered. Please confirm whether HPSV fittings are required or LED type flood light can be considered for yard lighting.	LED fixure can be considered based on request from OEM without any price implication.
7	Price schedule 2 Supply			Outdoor Illumination / DSLP/ Earthing etc. scope	We understand that bidder to consider outdoor illumination, DLSP protection and cable trench for present scope of work only (i.e. for present scope of work for 220kV STATCOM bays only). We have not envisaged any electrical or civil work in bidder scope for any future bays or any vacant area within fence area. Please confirm.	For proposed STATCOM Project work
8	R4SLD OF 220kV SAGAPARA SS			Equipment parameter	For 220kV AIS outdoor equipment's some parameters are mentioned in tender Single line diagram (Drg no. Dwg. No. GETCO / E / 2S-041/P-002 (R4) dtd. 13.05.2024), we understand that in case of any ambiguity in different parameters mentioned in price schedule, tender Single line diagram and specification, bidder to follow price schedule. Please confirm.	As per tender BOQ
9	Supply-1, Supply-2 and Supply-3/ Bid price schedule (BPS)			Creepage of equipment	In line with Bid Price schedule, we understand that Bidder to consider 25mm/KV for equipments mentioned under Sr. No A, B C, D, E, F, G of BPS. Please confirm our understanding.	To Supply and Erection of 220kV & LV Side Equipments considering 25mm/kV creepage distance
10	TS 1000 Amp LTPB R3 June 22				Please provide the standard LT SLD for reference, as specification description, it seems there is only one bus coupler for three incomer and during DG operation bus coupler will be closed and complete load will be on DG Battery will be connected to DCDB or to charger i.e. to confirm the same please share LT Standard SLD	LT SLD bidder has to derive as per their system requirement. However in LTPB spec, it is clearly mentioned that there are 2 I/C, 1 BC and 1 DG also operating philosophy is spelled out in specifications. For DC distribution, DC SLD is already provided.
11	TS Plante/ TS NiCad Battery SetR2 June 22				Please confirm the battery back up time for sizing calculation as it is not specified in the specification.	Minimum back-up time to be calculated is 3 hrs. However, It is up to bidder for any other contingencies.
12	Part 1 220KV Sagapara STATCOM (Scope of Work)			220KV SWITCHYARD 220KV STATCOM BAY-1No (HV SIDE) STATCOM (HV Side) BAY 1	Please confirm the location to place the CRP panel for HV side bay , if it will be placed in the existing control room , then we assume sufficient space is available in the existing control room and associated outdoor cable trench . Please confirm.	Query is repeating. Pl refer reply against query no. B-1
13	Tech specifications for STATCOM / TS –STATCOM 045 / R1 dated 17.08.2024	6.3 MV Switchyard & R4SLD OF 220kV SAGAPARA SS	13 of 53	6.3 MV Switchyard • Medium Voltage (MV) delta bus shall be grounded through a Grounding Transformer (i.e. zigzag winding Transformer) along with Suitable resistor in the neutral.	We would like to inform you that, requirement of zigzag winding Transformer is not indicated in the price schedule and SLD, however as per the specification for STATCOM the same is mentioned. We understand that, in line with price schedule the same is not included in the scope of work, Please confirm.	It shall be as per the price schedule; however, the requirement for a grounding transformer will be finalized during detailed engineering.
14	General			Missing Specifications	We request M/s GETCO to furnish the specifications for below items as the same is not available along with RFQ documents : 1. UPS with SLD 2. UPS for STATCOM valve cooling system 3. HVAC system in Valve Hall 4. HVAC system in Scada room & cooling room 5. Fire detection & Extinguisher system 6. Structure work specification for gantry towers, beams & Equipment's	Monitor UPS shall be as per specification and cooler UPS shall be designed by bidder. Various criteria and contingencies are already specified in cooling system clause. Bidder has to device and derive the same to demonstrate the desired reliability and functionality.
15	General			Fire protection system	We understand that there will not be any hydrant system for building, yard & HVWS system for Transformer /ICT/rectors. Please confirm.	NIFPS System as per GETCO requirement
16	General			HVAC system	We understand that there will not be ventilation/ AHU system for valve hall. Bidder to follow the BOQ inline with page no 2- Supply-E-300. Please confirm.	The respective clause has been amended. Kindly refer to Addendum.
17	General			Cable tray	We understand that cable tray to be considered inside the control room building only. Rest all area cables to be laid on angle support only. Please confirm.	To be laid in Conntrol-Cable trench as per GETCO Procedure
18	General				We understand that 'All spares, Tools, Tackles, testing equipment's and Misc. Items' to be supplied as per supply price schedules items. Apart from that we have not envisaged any other tools, spares, accessories, testing and maintenance equipment's in bidder scope. Please confirm.	It shall be as per specification and system functional/performance requirements for reliability and availability
19	PART – I GENERAL TERMS & CONDITIONS WITH COMMERCIAL BID			Order of precedence	We understand for any discrepancy between Bid price schedule (BPS) and section project, the requirement as stated in Bid price schedule (BPS) shall prevail. Kindly confirm.	Repeated query
D	**Clarifications with respect to Civil Works**					
1	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	Cl 1.0. General	3 of 109	……3D model based on architectural drawing for all buildings with all possible views shall be prepared and submitted.	Bidder understands that Statcom control room building is industrial type building with simple architecture and hence 3D model based on architectural drawing is not required. Kindly confirm.	As per Technical Specification & requirements
2	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	Cl 1.0. General	3 of 109	All the work shall be strictly executed as per FIELD QUALITY PLAN approved by GETCO which is shown as ANNEXTURE-'B' & Approved technical specification of GETCO for civil works (Any reference to unit rates, Schedule of Item, Bill of Quantities etc. in the Standard Technical Specification shall be considered as not applicable, as this is an EPC tender on lump sum basis. Units of item shall be strictly as mentioned in BOQ of civil works). Technical specification for civil works for execution is available in corporate office for reference.	We understand that, Civil works is to be quoted as mentioned in the price schedule no 1 Civil E-300. In case any additional requirement arises during execution shall be measured and paid on mutually agreed rates. Please confirm	Confirmed
3	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	Cl 1.0. General	2 of 109	All the design and drawings shall be submitted in two set of hard copy and two set of soft copies with duly sign and stamp by structural designer consultant and bidder both in pdf format.	Bidder understands that sign and stamp by structural designer consultant on all design & drawing is not a compulsory binding for this package. Kindly confirm.	Sign and stamp by structural designer consultant and bidder both on all design & drawing is compulsory.
4	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	Cl 2.2.1 Site Preparation:	6 of 109	Levelling of the plot area (i.e.) grading prior to commencing work in plot/boundary area, will be done by bidder to a formation level as per site condition for the formation level. The required cutting-filling as per GETCO approved finished ground level will be done by bidder. The final grading to the required finished level, with slopes to drainage system, final landscaping etc. shall be done by the bidder as per approved Construction Drawings. Water supply system, Storm water drainage system, Sewage system, Septic Tank and disposal system shall be designed and constructed by the bidder. The drainage and treated effluent from the plot area shall be disposed up to disposal point (outside) including development of drain beyond disposal point during detailed engineering.	Bidder request GETCO to provide maximum distance of disposal point (outside) from the substation yard and the disposal drain length beyond disposal point to be considered for estimation.	As per BOQ & Development of Drain shall be decided during detailed engineering.

Annexure A

Title	**TECHNICAL PREBID CLARIFICATIONS.**
Customer	**GUJARAT ENERGY TRANSMISSION CORPORATION LIMITED**
Project	**DESIGN, ENGINEERING, MANUFACTURING, SUPPLY, ERECTION, TESTING & COMMISSIONING OF ±125 MVAR STATCOM AT 220KV SAGAPARA SUBSTATION ON TURNKEY BASIS**
	OP24101451063 Dtd.: 21-Apr -2025.

S.No	Reference Document	Clause No	Page No	Existing clause	Clarification / Confirmation Required	GETCO Clarifications
5	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	Cl 2.2.2 Soil investigation (Geo Technical Investigation):	6 of 109	Soil data has been provided in bid for reference only. Bidder shall take soil investigation at their own cost and design the civil buildings and foundations for switch yard accordingly as per specification and requirement. GETCO shall pay as per quoted LUMPSUM price only. The BIDDER shall perform a detailed soil investigation to arrive at sufficiently accurate,	Soil data/report has not been enclosed in the bid document, we request for sharing soil data/report.	Soil report enclosed herewith.SBC enclosed is indicative, However for actual location, bidder has to carryout SBC for Design of foundations. i.e. detailed engineering is in the scope of bidder no extra cost pertain to is claimable. In the event that the Soil Bearing Capacity (SBC) results obtained from the investigation are found to be more stringent than those outlined in the GETCO SBC document, the worst-case SBC from both the Geotechnical investigation reports must be considered for the design and drawing process of all civil structures at the sub-station.
6	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	2.2.2.2.4 PLATE LOAD TEST	9 of 109	…….. The location and depth of the test shall be as given below: a) One each at STATCOM building location, Gantry foundation location, Reactor foundation location, transformer foundation location, Capacitor bank foundation location at the proposed foundation depth below finished ground level for bearing capacity. b) One at Building/Control room/colony area Undisturbed tube samples shall be collected at 1.0 m and 2.5m depths from natural ground level for carrying out laboratory tests……	We understand that plate load test is applicable only for main heavy structural foundations like one for STATCOM building & one for transformer/reactor foundation, so we propose to have plate load test at two locations only. Please confirm.	As per Technical Specification
7	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	2.2.2.2.4 PLATE LOAD TEST	9 of 109	…….. The location and depth of the test shall be as given below: a) One each at STATCOM building location, Gantry foundation location, Reactor foundation location, transformer foundation location, Capacitor bank foundation location at the proposed foundation depth below finished ground level for bearing capacity. b) One at Building/Control room/colony area Undisturbed tube samples shall be collected at 1.0 m and 2.5m depths from natural ground level for carrying out laboratory tests……	Further to above, bidder understands that colony area is not part of this contract scope. Hence, no plate load test is required in colony area. Please confirm.	Confirmed
8	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	Cl 2.2.3 Design, Engineering and civil work for :	16 of 109	a) 220kV Statcom Control Room building (GF+ FIRST FLOOR+ SECOND FLOOR(TERRACE WITH CABIN AND ANY OTHER IF REQUIRED) including Panel room, Cooling system room, Valve Hall, Store, Cable Vault, Cable trench, lobby, passage, Work shop, Scada Room, LV Room, Battery Room, Pantry, Discussion room/Conference Room, Lavatory Blocks (for Male, Female and Handicapped), Stair Cabin, Lift etc.	We would like to inform you that, the provisions of clause no 2.2.3 are not matching with tender drawing part of bid document, kindly confirm whether Discussion room/Conference Room & Lavatory Block for Handicapped in Statcom control room building to be considered in present scope or not.	It Shall be as per Technical Specification & GETCO Requirements.
9	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	2.2.3 Design, Engineering and civil work for :	17 of 109	Please note that minimum depth of foundation shall be as under 1)For Normal soil strata/soft rock strata (Open footing) -- 2500mm 2)2) For pile foundation -- 2000mm cut-off level 3)3) For Hard rock strata - 1500mm plus anchoring of sufficient capacity (inside 4)hard rock strata) of HILTI or Equivalent company product	We understand that, cut off level/founding level of foundation is measured from FGL of substation. Please confirm. Soil data/report & contour drawing has not been enclosed in the bid document, we request for sharing soil data/report.	cut off level/founding level of foundation is measured from FGL of substation.For SBC Report pl refer above sr.No.5.
10	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	2.2.3 Design, Engineering and civil work for :	19 of 109	Separate fire escape doors shall also be provided in the Statcom Control Room Building.	We understand that on One side of Statcom control room building Fire Escape door is to be provided. Please confirm & Also mention Fire Rating of the door.	It Shall be as per Technical Specification & relevent standard.
11	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	2.2.3 Design, Engineering and civil work for :	19 of 109	The hall shall be suitable for mounting EOT crane (Supply of EOT Crane is not part of civil work) Loading platform at entrance for equipment shall be provided of minimum size of 6000 x 4000mm of adequate capacity or as per Tender drawing.	We understand that inside valve hall for lifting of equipment's mono rail of capacity 2.5 to 3.0 ton is required. Requirement of EOT crane with platform on both sides will increase the Valve Hall size resulting increasing overall cost of project. Hence, we request you to re verify the requirement of EOT crane, walkway platform with cage ladder inside Valve Hall. Please confirm.	It Shall be as per Technical Specification
12	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	2.2.3 Design, Engineering and civil work for :	19 of 109	Loading platform at entrance for equipment shall be provided of minimum size of 6000 x 4000mm of adequate capacity or as per Tender drawing.	Reference to Statcom control room building tender drawing attached with RFQ documents, kindly confirm the requirement of Loading platform at entrance of size of 6000 x 4000mm of adequate capacity as same has not been shown in shared tender drawing.	It Shall be as per Technical Specification & GETCO Requirements.
13	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	2.2.3 Design, Engineering and civil work for :	19 of 109	Walkway along the length of Hall on both the side which width not less than 1.0m shall be provided at gantry girder level along with climbing arrangement to facilitate for maintenance. All steel work shall be painted with one coat of steel primer and two coats of synthetic enamel paint after erection. A steel staircase equipped with a railing, if required shall be constructed as directed E.I.C.	We would like to inform you that, already RCC staircase has been proposed in Statcom control room building tender drawing, hence no other dedicated staircase with railing will be required for accessing the valve hall roof. Only Cage Ladder (If required) shall be provided for accessing walkway platform inside the valve hall. Please confirm.	Dedicated staircase with railing shall be provided.
14	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	2.2.3 Design, Engineering and civil work for :	19 of 109	Statcom building shall be RCC Framed Structure situated Panel Room, Valve Hall, Cooling system Room, Filtration arrangement, Cable trench, Ladies and Gents Toilet Block on GF level. It will include a L.V. Room, SCADA Room, Battery Room, Conference Room/Discussion Room, Ladies and Gents Toilet Block on FF level, an elevator Lift area, a Machine room and any other Room on SF level if required and stair cabin. Which shall be made of RCC frame structure of minimum concrete grade of M25.	We understand that, Ladies and Gents Toilet Block on GF level, Conference Room/Discussion Room on FF level, and elevator Lift area, a Machine room on SF level, not to be considered in present scope of Statcom control building, as the same has not been shown in tender drawing "TENTATIVE GROUND FLOOR /FIRST FLOOR PLAN FLOORING DETAIL & PLINTH PROTECTION DETAIL OF STATCOM CONTROL ROOM BUILDING AT 220KV SUB- STATION" DRG. NO: GETCO / C /2S-041&059/CR-017. Please confirm.	Tender drawing is reference purpose only.However, building shall be fulfill all the technical requirement for the STATCOM Work & any GETCO requirements.
15	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	2.2.3 Design, Engineering and civil work for :	21 of 109	(5) L.V. ROOM, SCADA ROOM, BATTERY ROOM, LADIES AND GENTS' TOILET BLOCK MINIMUM CLEAR HEIGHT SHALL BE CONSIDER 4.0MTR.	We understand that bidder is free to decide the Statcom Valve Hall height as per system requirement. Please confirm.	It shall be as per Technical specification & requirements.
16	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	2.2.3 Design, Engineering and civil work for :	21 of 109	STATCOM CONTROL ROOM BUILDING OF RCC FRAMED STRUCTURE : The Finished Floor level of the Ground floor Building shall be minimum EL (+) 1.2 m. i.e. one point two meter above Finished Ground level.	Reference to technical specification and shared Statcom control room building tender drawing, kindly confirm the correct Finished Floor level of building to be considered.	It shall be as per Technical specification & requirements.
17	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	2.2.3 Design, Engineering and civil work for :	22 of 109	Roof / Floor Finishes The contractor shall submit performance guarantee of the waterproofing item as mentioned in BOQ./ GETCO procedure. Rainwater pipes from roof shall be fixed on the outside face of the column and encased later with concrete.	Reference to Bid Price Schedule (1 Civil E-300) and technical specification, kindly confirm the following: 1.Bidder understands that waterproofing performance guarantee shall be as per waterproofing admixture manufacturer. 2.Bidder understand that encasing grade of concrete shall be M20 for Rain water pipe on the outside face of the column.	It shall be as per Technical specification & BOQ
18	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	2.2.3 Design, Engineering and civil work for :	28 of 109	Toilet details including plumbing and sanitation 2. Two toilets at control area floor, one for Gents and other for ladies, shall be provided in the building. Attached toilet shall be provided with conference room, separate for Gents and ladies as per approved in drawing.	Reference to technical specification & shared building tender drawings, kindly confirm, the no. of toilets for Gents & ladies to be considered on each floor of Statcom control room building.	It shall be as per Technical specification,BOQ & requirements.
19	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	2.2.3 (g) Design, Engineering and civil work for :	33 of 109	Approach road to building: The scope of this item includes the construction of an access road required from the main road within the substation to the building, if necessary. This access road should have a width of 3.0 meters and must be constructed using 75mm thick paver blocks. Further details and specifications regarding the paver blocks are provided below. Providing & Fixing precast rubber dye interlocking concrete block 75mm thick with concrete M-20 compressed by mechanically Pressed and as per approved design incl. 75 mm average Thick layer of approved quality of river sand bellow concrete block in slope, filling the joints of the concrete block with screened sand etc. Complete including all material, labour, tools & tackles, curing for successful complication of the work as directed by EIC. However, thickness of river sand below paver block shall be decided on the basis of soil conditions and recommendation of soil testing agency.	Reference to Bid Price Schedule (1 Civil E-300) line-item details no. 5, technical specification and vide tender attached drawing, kindly confirm the type of road detail to be considered in front of Statcom Control room building / security hut & inside the substation yard.	It shall be as per technical Specification, BOQ & Technical requirements.
20	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	2.2.3 (b) Minimum grade of concrete.	36 of 109	Providing & laying RCC FOUNDATIONS FOR SUPPORT STRUCTURES FOR FOLLOWING EQUIPMENT/TOWERGANTRY/TRANSFORMER/ REACTOR etc of minimum grade M-25 for exposed work including the cost of excavation in all sorts of….	Reference to Bid Price Schedule (1 Civil E-300) line-item details no. 2 & technical specification, bidder understands that for Equipment/Tower Gantry/Transformer foundations minimum grade of concrete shall be M20. Kindly confirm.	It shall be as per technical Specification
21	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	2.2.3 (b) Minimum depth of foundations	36 of 109	Please note that minimum depth of foundation shall be as under (1) For Normal soil strata/soft rock strata (Open footing) - 3500mm for Tower Gantry foundation & 1500mm for Equipment support structure foundation. (2) For pile foundation - 2000mm cutoff level for Tower Gantry foundation & 1500mm cutoff level for Equipment support structure foundation. (3) For Hard rock strata - 2000mm plus anchoring of sufficient capacity (inside hard rock strata) of HILTI or Equivalent company product for Tower Gantry Foundation & 1500mm plus anchoring of sufficient capacity (inside hard rock strata) of HILTI or Equivalent company product for Equipment support structure foundation.	We understand that, cut off level/founding level of foundation is measured from FGL of substation. Please confirm. Soil data/report & contour drawing has not been enclosed in the bid document, we request for sharing soil data/report.	Please refer above sr.No.5 & 9
22	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	2.2.3 (b) Minimum depth of foundations	37 of 109	9. D.G. set plinth shall be designed as per relevant codes and standards and as per manufacture's specification and guidelines. Top of plinth shall be 300mm above TOC. Minimum depth of foundation shall be 1500mm inside Ground level.	Reference to Bid Price Schedule line-item details & technical specification, bidder understands that for minimum depth of foundation for DG shall be 750mm below finished ground level. Kindly confirm.	It shall be as per technical Specification.

Annexure A

Title	**TECHNICAL PREBID CLARIFICATIONS.**				
Customer	**GUJARAT ENERGY TRANSMISSION CORPORATION LIMITED**				
Project	**DESIGN, ENGINEERING, MANUFACTURING, SUPPLY, ERECTION, TESTING & COMMISSIONING OF ±125 MVAR STATCOM AT 220KV SAGAPARA SUBSTATION ON TURNKEY BASIS**				
	OP24101451063 Dtd.: 21-Apr -2025.				

S.No	Reference Document	Clause No	Page No	Existing clause	Clarification / Confirmation Required	GETCO Clarifications
23	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	Cl 2.2.3 (b)Transformer /Reactor Foundations	39 of 109	i. For Transformer of 220/66kv(160MVA)/XXkv including Radiator Bank and Other Foundations and Its Marshalling Work and Its Track up to Road Including Required Rail Pieces. The rate includes design and construction as per relevant standards and codes and CEA requirement & design of rail cum road. Tender drawing is attached herewith for ready reference. (Construction of Transformer foundation shall be cast in two stage as under……	As per technical specification clause no. 2.2.3 (b) (i) GETCO to provide drawing of transformer but the same was not the part of bid document, please furnish the same.	It shall be as per technical Specification.
24	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	Cl 2.2.3 (b)Transformer /Reactor Foundations	40 of 109	7. Each Autotransformer/Reactor including oil conservator tank and cooler banks etc. shall be placed in a self-sufficient pit surrounded by retaining walls (Pit walls). The clear distance of the retaining wall of the pit from the Autotransformer/Reactor shall be 20% of the Autotransformer/Reactor height or 0.8 m whichever is more…….	Reference to technical specification, bidder understands that the clear distance of the retaining wall of the pit from the Autotransformer/Reactor shall be 20% of the Autotransformer/Reactor height (oil containing part) or 0.8 m whichever is more, kindly confirm.	It shall be as per technical Specification.
25	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	Cl 2.2.3 (b) Oil Sump	41 of 109	Oil sump.(For 50000 litre capacity) RCC OIL SUMP as per attached Tender Drawing.	Reference to Bid Price Schedule (1 Civil E-300) line item details, bidder understands that Oil Sump is not in present scope of work. Kindly Confirm. If Oil sump is in present scope, then bidder request to share tender drawing for estimation of quantities.	It shall be as per BOQ & Technical Specification.
26	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	Cl 2.2.3 (b) Oil Sump	41 of 109	Looking to the soil conditions, Oil sump shall be rested on pile foundation. The minimum Grade of concrete shall be M20.	Reference to Bid Price Schedule (1 Civil E-300) line-item details, bidder understands that Oil Sump is not in present scope of work. Kindly Confirm. If Oil sump is in present scope, then bidder request to share tender drawing for estimation of quantities.	It shall be as per BOQ & Technical Specification.
27	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	Cl 2.2.3 (c) Toilet block system for Labors	42 of 109	Toilet block system for Labors including foundations and its all related required items, ramp with platform as per latest relevant standards. (Note: Tentative arrangement of toilet block to be provided as decided by concern EE(const)/EE(civil). However, it is important that bidder shall study and include full requirements- functional, operational & maintenance, safety and national codes etc which are essential and necessary for building as per standards in their bid.).	Reference to Bid Price Schedule (1 Civil E-300) line-item details, bidder understands that toilet block system for Labors including foundations and its all related required items is not in present scope of work. Kindly Confirm Further, if same is required, please add line item in price schedule and provide the drawings.	It shall be as per BOQ & Technical Specification.
28	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	Cl 2.2.3 (e) Fire Wall	46 of 109	RCC FIRE PROTECTION WALL in all respect with latest relevant STANDARDS and CODES…..	Reference to Bid Price Schedule (1 Civil E-300) line-item details no. 4, technical specification and shared tender drawing, bidder understands that RCC framed structure with brick/cc block infill wall type fire wall is in scope. Kindly confirm.	It shall be as per Technical Specification, BOQ, & tender drawing.
29	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	Cl 2.2.3 (e) Fire Wall	46 of 109	8. The firewall will be made of reinforced concrete of minimum M25 Grade of concrete.	Reference to Bid Price Schedule (1 Civil E-300) line-item details no. 4, technical specification and vide tender attached drawing, bidder understands that grade of concrete for fire wall shall be M20. Kindly confirm.	It shall be as per BOQ & Technical Specification.
30	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	Cl 2.2.3 (f) R.C.C. Roads, Culverts, Paving, Storm water drains & Peripheral drain	47, 48 of 109	RCC Roads supported by WBM road (WBM road having Minimum 600mm thickness shall consist of GSB layer & WMM layer as per MORT & H specification (minimum thickness of GSB layer shall be 300mm thick but which may be increased as per design requirements and minimum thickness of WMM layer shall be 300mm which may increase as per design requirement), Minimum thickness of RCC road shall be 300mm. C.D Works, 100mm thick PCC, Paving & Storm water Drains in all respect shall be provided as per latest relevant STANDARDS. Design of WBM road shall be done as per CBR value and other soil data. [Pg 47 of 109] 4. The road shall have minimum thickness of 300mm thick RCC (M-25 with reinforcement (as per requirement of IS code) on the top. Below it 100mm thick PCC M15 shall be provided. [Pg 48 of 109] 7. RCC paving of 500 width on both side of road for main road from entrance gate to Building & from Main road to Control room building shall be provided.	We would like to inform you that, Bid Price Schedule line-item details, technical specification and shared tender drawing for road works, detail of roads like GSB/WMM thickness, Top RCC thickness, shoulder width & its type etc are not matching. kindly confirm correct road details to be considered for estimation.	It shall be as per technical specification & decided during detailed engineering.
31	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	Cl 2.2.3 (f) Vehical Parking Shed.	49 of 109	Vehicle parking sheds (Approx. size shall be 16.0 x 5.0 meter) of steel tubular structure with PVC fire resistance roof as per latest relevant STANDARDS. 'Finolex' of equivalent make corrugate sheet fire resistance Roofing fixed with required quality nut / washer complete, including plates, multiwall corrugated sheet of required thk. including filling in gaps with silicon etc complete.	Specification clause specify for vehicle parking details whereas Bid Price Schedule does not have line-item for the same, we understand that Vehicle parking shed is not in present scope of work. Kindly Confirm.	It shall be as per BOQ & Technical Specification.
32	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	Cl 2.2.3 (g) SECURITY CABIN	50 of 109	Please note that minimum depth of foundation shall be as under (1) For Normal soil strata/soft rock strata (Open footing) -- 2000mm (2) For pile foundation -- 500mm cutoff level (3) For Hard rock strata - 1000mm plus anchoring of sufficient capacity(inside hard rock strata) of HILTI or Equivalent company product However, Scope of work shall be inclusive of all the works/items mentioned in Tender drawing, Technical specification and requirement to complete the work as per relevant IS codes and standards.	We understand that, cut off level/founding level of foundation is measured from FGL of substation. Please confirm. Soil data/report & contour drawing has not been enclosed in the bid document, we request for sharing soil data/report.	Please refer above sr.No.5 & 9
33	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	Cl 2.2.3 (h) Water Supply System internal & external with U/G + OH tanks.	53 of 109	Water supply: (I) The Bidder shall carry out all the external plumbing/erection works required for supply of water to the control room cum administrative building. Type.4 quarter, Transit camp cum Guest house building beyond the Bore well. (II) The Bidder shall carry out all the plumbing/erection works required for supply of water to fire water tank beyond the Borewell.	Since construction of transit camp, administrative building, residential quarters, guest house and fire water pump house/tank are not in the present scope of work, bidder understands that external plumbing/erection works required for supply of water beyond the borewell is limited to Statcom control room building only. Kindly Confirm	It shall be as per BOQ & Technical Specification.
34	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	Cl 2.2.3 (i) Septic Tank with Soak Pit and drainage system (External).	54 of 109	Providing 3000 MM. internal diameter & 4.0 Mt. deep SOAK PIT including excavation in all types of soil & soft rock & B.B.C.C. (1:4:8) bedding 300mm. thick below masonry and 450mm. thick Brick Masonry in C.M.(1:6) up to 1500mm. height, 350mm. thick for further 1500mm. and 230mm.thick for remaining height honey combed, plastering in C.M.(1:3) outside up to 1.5 Mt. height and 100mm. thick R.C.C. Slab with 600X600mm. C.I .HEAVY cover with frame, with necessary reinforcement as per design & C.I. Vent pipe 1800mm. long with Bella Masonry pillar 350X350X450 plastered all around filling 40 to 50mm. size……	While referring Bid Price Schedule (1 Civil E-300) line-item no. 8B, technical specification & SHARED tender drawings for soak pit, we found there is a mismatch in size, we understand that for soak pit sizes as per Bid Price Schedule line-item details No. 4 has to be followed. Kindly confirm.	It shall be as per BOQ.
35	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	Cl 2.2.3 (j & k) Metal spreading with micro-levelling & anti-weed treatment.	57 of 109	k) Supply & Spreading black trap stone machine crushed kapchi metal 25 to 40 mm. size metal in yard in 100mm layer with 75mm thick PCC 1:5:10 underneath including watering, ramming, dressing up to one level, royalty, all Government taxes transportation etc., complete as directed by E.I.C.	We understand that metal spreading is to be done only under present scope of work and not under existing/future scope area. Please confirm.	It shall be as per BOQ & Technical Specification.
36	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	Cl 2.2.3 (i & m) Dismantling BB/Bela/Rubble masonry. Dismantling CC/RCC.	59 of 109	i)Dismantling BB/Bela/Rubble masonry. m) Dismantling CC/RCC.	We understand that dumping yard is available within the substation premises. If not please indicate the distance of dumping yard and we understand all statutory approval (if required) for dumping yard shall be arranged by GETCO. Please confirm.	Bidder has to dispose off dismentled stuff at any lead at their own cost.
37	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	Cl 2.2.3 (p) chain link fencing cum Retaining wall	62 of 109	Looking to the soil conditions, RCC Retaining wall shall be as below: Please note that minimum depth of foundation shall be as under (1)for Normal soil strata/soft rock strata (Open footing) -- 1500mm (2) For pile foundation –1000mm cutoff level (3) For Hard rock strata - 1000mm plus anchoring of sufficient capacity(inside hard rock strata) of HILTI or Equivalent company product for Equipment support structure foundation.	We understand that, cut off level/founding level of foundation is measured from FGL of substation. Please confirm. Bidder request to share soil data/report, as no soil data/ report has been shared with attached tender documents.	Please refer above sr.No.5 & 9
38	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	Cl 2.2.3 (v). (A) II. Design Loads	70 of 109	Seismic Zone – V shall be considered irrespective of location.	As per IS 1893 Part 1_2016, substation location lies in seismic zone IV. Substation buildings, transformer foundation, equipment/tower structures foundations shall be designed for the same. Please confirm.	As per technical Specification, for All Civil works, Seismic Zone – V shall be considered irrespective of location.
39	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	Cl 2.2.3 (v). (A) II. Cement & Concrete Grades	75 of 109	M-15: Levelling course (Min. 100 mm thick) Below footings, Tanks, base slab for drains, fill concrete etc (Min. cement consumption shall be 300 kg. Per cmt of concrete.)	Issued tender drawings has levelling course/lean concrete grade as 1:4:8. We understand that attached tender drawing is superseded irrespective of detailed items mentioned in Technical specifications . Please confirm.	It shall be as per Technical Specification.
40	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	Cl 2.2.3 (v). (B) General requirements for civil works under scope of bidder:	80 of 109	14. Projection of PCC shall be kept minimum 150mm all around foundations of all buildings/switch yard Gantry & Equipment ,cable trench, Bus duct support strctures, circuit breaker, Transformer / Reactor etc.	Issued tender drawings has PCC projection as 75mm, 100mm & 150mm around foundations. We understand that detailed item mentioned in Technical specification is superseded irrespective of issued tender drawings. Please confirm.	It shall be as per Technical Specification.
41	TECHNICAL SPECIFICATIONS CIVIL WORKS FOR 220/XX KV STATCOM SUB STATION (INDOOR/OUTDOOR –	1.0 GENERAL	2 of 109	In case of ambiguity between codes, specifications and drawings, the most stringent of them shall govern.	We understand that in case of ambiguity between Codes, Specifications, Drawings & Price schedule , the BID PRICE SCHEDULE (BPS) shall prevail. Please confirm.	In case of ambiguity between codes, specifications, drawings & price schedule, the most stringent of them shall govern
42	General			Clearance of existing in GETCO proposed switchyard premises for 220KV STATCOM	We would like to inform you that, during the site visit it was observed , 66kV Live line crossing in proposed plot area for 220KV Statcom, we understand that, scope for rerouting/ removal of this 66KV Line shall be in scope of GETCO . Please confirm.	Confirmed
43	General			Clearance of existing trees, bushes, grass and vegetation in GETCO proposed switchyard premises for 220KV STATCOM	We would like to inform you that, during the site visit it was observed, there are trees in the proposed substation area, we understand that, scope for removal and necessary approval of this shall be in scope of GETCO . Please confirm.	Removal of trees of any size and dimensions is in scope of bidders only.
44	General				We would like to inform you that, during the site visit it was observed, a overhead water tank near the proposed site location, we understand that, rerouting of any underground pipe other utilities ,etc dismantling and reconstruction of the overhead water tank if required shall be in scope of GETCO and not in present scope. Please confirm.	Demolition and reconstruction of OH water tank if required will be in the scope of GETCO. However Minor re routing of existing water supply line if required can be considered in the scope of bidder if required.
	Clarifications with respect to Operation and AMC:					

Annexure A

Title	**TECHNICAL PREBID CLARIFICATIONS.**
Customer	**GUJARAT ENERGY TRANSMISSION CORPORATION LIMITED**
Project	**DESIGN, ENGINEERING, MANUFACTURING, SUPPLY, ERECTION, TESTING & COMMISSIONING OF ±125 MVAR STATCOM AT 220KV SAGAPARA SUBSTATION ON TURNKEY BASIS**
	OP24101451063 Dtd.: 21-Apr -2025.

S.No	Reference Document	Clause No	Page No	Existing clause	Clarification / Confirmation Required	GETCO Clarifications
1	Technical Specification for Static Synchronous Compensator (STATCOM)/Page 51 of 53 & Price Schedule (Supply-I)			**Operation and** AMC: *The operation of STATCOM during first 6 months of the guarantee period after taking over of the system shall be done by supplier jointly with GETCO. *The maintenance of the STATCOM for initial period of 5 years (excluding guarantee period) after successfully commissioning shall be carried out by supplier. *The maintenance includes corrective, preventive and breakdown maintenance. *During guarantee period, GETCO will do only cleaning and up keeping. *Any maintenance during guarantee period, if required, shall be done by bidder and five years maintenance period shall start from the expiry of guarantee period of two years after taking over the system *Bidder shall have to mandatorily quote rates of Operation and AMC in price schedule. In absence of above, bid may be liable to be rejected. & **Price schedule:** Maintenace of STATCOM for inital 5 years (excluding guarantee period) Operation f STATCOM during first six month of guarantee period jointly with GETCO	We would like to inform you that, Tender specifications does not clarify the scope of works for operation & AMC of STATCOM and also there is no manpower details given for Operation & Maintenance of the STATCOM hence:. A. Please specify the scope of work for Annual Maintenance Contract (AMC) B . We would request you to furnish the following Manpower Details: 1. Number of Man power required. 2. Profile of the manpower to be deputed. 3. Minimum Experience for manpower to be considered. C. Any O&M spares, tools and tackles required for maintenance and operation during the AMC period of 5 years after guarantee period, same shall be charged extra as applicable and the prices quoted by bidders in the BPS is not required to be inclusive of any prices for spares, tools and consumables. Please confirm our understanding. D. We understand that, cost of calling specialist in case of breakdown during the AMC period shall be extra as applicable . Please confirm. E. We understand no permanent manpower is required for corrective O& M works. For preventive checkup only 2-3 visits' per year will be done by supervisor. In case of corrective action noticed in that visits', same shall be informed to GETCO and necessary actions shall be taken jointly by GETCO and the contractor. The additional cost shall be jointly decided by GETCO and the contractor which does not include cost for spares, tools, cost of technician. Please confirm our understanding. We would like to inform you that the above requirements are mandatory to be furnished by client during bidding stage for proper financial evaluation of the bid and bringing all the bidders at par.	The respective clause has been amended. Kindly refer to addendum. The respective clause has been amended. Kindly refer to addendum.
2	Technical Specification for Static Synchronous Compensator (STATCOM)/Page 51 of 53 & Price Schedule (Supply-I)				We understand that Mobile cranes, articulated boom lift, Trucks for loads shall be provided by GETCO whenever required. Please confirm also Shift personnel may utilize the control room of sub-station along with toilets, etc. Please confirm	The respective clause has been amended. Kindly refer to addendum.
3	Technical Specification for Static Synchronous Compensator (STATCOM)/Page 51 of 53 & Price Schedule (Supply-I)			Shifting and handling of spares/equipment	Please specify the scope of work regarding Shifting and handling of spares/equipment from sub stores to location during breakdown/preventive maintenance etc in contractor scope or employer. Pls confirm	The respective clause has been amended. Kindly refer to addendum.
4	Technical Specification for Static Synchronous Compensator (STATCOM)/Page 51 of 53 & Price Schedule (Supply-I)			Calibrations of the testing and measuring instruments	We understand that all types of Third-party calibrations of the testing and measuring instruments other than contractor scope of supply shall be in the scope of employer GETCO. Please confirm	Query is not clear?
5	Technical Specification for Static Synchronous Compensator (STATCOM)/Page 51 of 53 & Price Schedule (Supply-I)			POWER SUPPLY	We understand that GETCO will supply 415V, 3-Phase four wire AC power, for operation and maintenance activities free of charge. Please confirm	**The power so consumed shall be charged at the prevailing tariff rate**