Corrigendum 2

NOTICE INVITING TENDER

The Tata Power Company Limited Invites Tenders (Two-Part Bidding Process), from interested and eligible Vendors for the following work.

Corrigendum to Tender issued vide advertisement published dated 06th January 2026.

A. Summary of the tendered packages:

Sr. No.	Description	Tender Reference no.	Bid Guarantee Fee / EMD (Rs.)	Tender Fee (Rs.)
1.	Corrigendum 2_CC26ASM003_EPC of SITC of 220kV GIS bays along with the PAC & other Auxiliaries at MSETCL Bhandup Substation for LILO at 220kV Kalwa Salsette-5 Line	CC26ASM003	14,00,000/-	2,000/-

Please note, above is a Corrigendum to the Tender CC26ASM003 advertised on 06th January 2026. The bidders who have already participated in the Tender shall be retained as "participant" & they shall not be required to participate again by submitting the Tender Fee of INR 2,000/-.

For additional technical details and Pre-qualification criteria for the subject works please refer section C below.

B. Guidelines for Participating:

Interested and eligible vendors can participate by submitting the following up to 15:00 hours on **Wednesday, 18th March 2026.**

1. Payment of non-refundable Tender Fee, as indicated in table above to be paid by direct deposit in following bank account.

   Beneficiary Name – The Tata Power Co. Ltd.

   Bank Name – HDFC Bank Ltd.

   Branch Name – Fort Branch, Mumbai

   Address – Maneckji Wadia Building, Nanik Motwani Marg, Fort, Mumbai 400023.

   Branch Code – 60

   Bank & Branch Code – 400240015

   Account No – 00600110000763

   Account type – CC

   IFSC Code – HDFC0000060

2. Submission of duly signed and stamped Authorization Letter indicating name of authorized person, contact number and e-mail id (mandatory) on Vendor's letterhead. The letter shall also mandatorily include payment details of Tender fee and Tender Reference no **CC26ASM003.**

E-mail with necessary attachment of 1 and 2 above to be send to amol.mote@tatapower.com and with copy to vivek.mittal@tatapower.com before "Last date and time for Payment of Tender Participation Fee".

Note: - Once the above-mentioned documents are received, detailed RFP shall be issued through our e-tender system.

3. It is clarified that Bid Guarantee/EMD as mentioned in section "A" above, is not required to be submitted at this stage, and it will be required to be submitted in the form of Bank guarantee at the time of Bid Submission.

C. Corrigendum details:

This corrigendum has been issued due to revision in PQR, BOQ & date extension for Paying Tender fee & submission of Authorization letter (for participation in tender).

Please refer further sections for revised PQR and BOQ.

Revised calendar of Events:

(a)	Access to NIT through Tata Power website	16th January 2026.
(b)	Last date and time for Payment of Tender Participation Fee to get e-tender link for bid submission*	By 18th March 2026, Thursday, 15:00 Hrs.
(c)	Last date and time of receipt of Bids along with EMD**	By 30th March 2026, 15:00 Hrs.

Note: -

* All future corrigendum's if any, to the said tender will be published on Tender section of above website (Tata Power --> Business Associates --> Tender Documents) only.

**These dates and time are as planned and tentative. In case of change the same shall be intimated to Authorized Person of Interested Bidder through E-Tender System.

Except above all other terms & conditions of the original tender document shall remain same.

It may be noted that all future correspondence will be strictly done only with Interested Vendors who have done the above steps (As mentioned in section "B") in time, and only through Tata Power E-tender system.

FORMAT C.1

Technical Pre-Qualification Requirement and Submission Format

Tender No

Package Name

Bidder :

Note : Vendor Submission / claim without suitable backup document will not be accepted and Bid is Liable for Rejection

This format duly filled in editable Excel format has to be uploaded as Bid Submission with all relevant Backup Document

C.1.Pre-Qualification Requirement Criteria_R1

Sr No	Parameter	Tata Power Requirement	Documents to be submitted by vendor to ascertain meeting of Pre-Qualification Requirement
1	2	3	4
(A)	**Infrastructure**	Bidder must be an OEM of EHV GIS or PAC for EHV system or MV GIS approved by Tata Power with manufacturing facility/assembly in India. Make of EHV GIS offered during Tender evaluation stage shall not be changed post award. The bidder must have in-house routine and acceptance testing facilities for acceptance as per relevant IS/IEC. **Or** **1. The EPC bidder should have designed, manufactured and supplied or integrated and supplied systems and supervised erection and commissioning for 220 kV and above EHV GIS substation.** **2. All equipment offered must be sourced from vendors who have manufacturing/ facilities in India and have in-house routine and acceptance testing facilities for acceptance as per relevant IS/IEC.** **3. Bidder shall offer only 1 make of GIS and 1 set makes (as per specs) of Protection Automation and Communication equipment for evualtion and shall maitain the same for PO finalisation.**	Self-undertaking to be submitted in this regard. Tata Power reserves the right to inspect the said manufacturing facility as a proof of compliance to this parameter.
(B)	**EPC Experience**	1. EPC Bidder shall have completed EPC commissioning of 5 GIS substations (220kV and above) with all associated balance of electrical and mechanical systems in last 10 years out of which at least 02 nos shall be in satisfactory commercial operation since last 03 years (from the date of bid submission). 2. All EHV GIS substation related Electrical and Mechanical balance of plant works 3. The EPC bidder should have appoint competant commissioining engr, erection engr with back up team who has succesfully comissioined similar type of work as per speciifcation in past 5 years.	a) Supply List, purchase orders & Performance Certificates from the utilities / clients. b) Self-undertaking to be submitted in this regard. TATA Power reserves the right to inspect the said commissioned facility as a proof of compliance to this parameter.
(C)	**Complaince to QAI / Safety requirement**	Acceptance of minimum quality requirements & Safety Conseqence management plan defined in technical specifications including SQP, FQP & Safety.	Bidder to confirm.

FORMAT C.1

Technical Pre-Qualification Requirement and Submission Format

Tender No

Package Name

Bidder :

Note : Vendor Submission / claim without suitable backup document will not be accepted and Bid is Liable for Rejection

This format duly filled in editable Excel format has to be uploaded as Bid Submission with all relevant Backup Document

C.1.Pre-Qualification Requirement Criteria_R1

Sr No	Parameter	Tata Power Requirement	Documents to be submitted by vendor to ascertain meeting of Pre-Qualification Requirement
1	2	3	4
(D)	**Type Test for GIS**	Bidder shall offer EHV GIS in this project which is sucessfully type tested (as per IEC or equivalent Standard). Type test reports of offered design, manufactured either in Indian facilities or in parent facilities are acceptable. The type test certificate of the EHV GIS shall not be more than 5 years old as on the scheduled date of BID opening. Time period for type test may be extended by another 5 years as a special case, if their is no change in design/material of construction (MOC). Same shall be in line with latest guidlines of CEA for Type test of EHV GIS.	1. Type test reports.
			2. List of type tests carried out.
			3. All type test reports of offered EHV GIS design, manufactured either in Indian facility or in parent facility.
			4. Undertaking that there is no change in design / Material of Construction (MOC) if Type Test Report older than 5 years but less than 10 years prior to date of bid opening has to be considered (if applicable). Same shall be in line with latest guidlines of CEA for Type test of EHV GIS.
			5. Undertaking that type test shall be carried out for the offered equipment / material from NABL / International Accredited Lab without any cost implication to the owner and the Type Test reports shall be submitted before despatch of the equipment / material, in case type test reports furnished are not for the quoted equipment / material but for the equipment / material with higher voltage class and/or different capacity (if applicable).
(E)	**Type Test for Other Systems**	Bidder shall offer all equipments in this project which are sucessfully type tested (as per IEC or equivalent Standard). Type test reports of offered design, manufactured either in Indian facilities or in parent facilities are acceptable. The type test certificate of the equipments shall not be more than 5 years old as on the scheduled date of BID opening. Time period for type test may be extended by another 5 years as a special case, if their is no change in design/material of construction (MOC). Same shall be in line with latest guidlines of CEA for Type test of EHV GIS substation.	1. Type test reports.
			2. List of type tests carried out.
			3. All Type test reports of offered all BOP equipment design, manufactured either in Indian facility or in parent facility.
			4. Undertaking that there is no change in design / material of construction (MOC) if Type Test Report older than 5 years but less than 10 years prior to date of bid opening has to be considered (if applicable). Same shall be in line with latest guidlines of CEA for Type test of EHV GIS substation.

FORMAT C.1

Technical Pre-Qualification Requirement and Submission Format

Tender No

Package Name

Bidder :

Note : Vendor Submission / claim without suitable backup document will not be accepted and Bid is Liable for Rejection

This format duly filled in editable Excel format has to be uploaded as Bid Submission with all relevant Backup Document

C.1.Pre-Qualification Requirement Criteria_R1

Sr No	Parameter	Tata Power Requirement	Documents to be submitted by vendor to ascertain meeting of Pre-Qualification Requirement
1	2	3	4
			5. Undertaking that type test shall be carried out for the offered equipment / material from NABL / International Accredited Lab without any cost implication to the owner and the Type Test reports shall be submitted before despatch of the equipment / material, in case type test reports furnished are not for the quoted equipment / material but for the equipment / material with higher voltage class and/or different capacity (if applicable).
(H)	**Commercial Capability**	Average annual turnover of the Vendor for last three financial years shall not be less than **INR 30.00 Crs**.	Profit and Loss Statements, Balance Sheet, Cash Flow Statements for the Three (3) preceding financial years duly audited and approved by Authorized Audit Firm / CA.

Note -

1) Please note that the PQR is for information only and the documentary evidence to ascertain meeting of the requirement has to be submitted along with the bid and not along with the tender fee.

2) Tata Power reserves the right to review and approve / reject the Bidder based on Document Submission.

3) The Prequalification Criteria published along with the tender “In Section C.1 Pre Qualificaiton Criteria_R1" is the total & complete pre-qualification requirement for the tender and shall prevail over any other/additional pre-qualification requirement mentioned elsewhere in the tender.

4) Apart from the above PQR bidder must also qualify in Safety evaluation. Details will be shared along with tender documents.

5) In case the bidder has a previous association with any of Tata Power Group companies for similar products and services, the performance feedback of the bidder by the Tata Power Group companies shall only be considered for evaluation purpose, irrespective of performance certificates issued by any third organization.

Annexure-1

245kV Outdoor GIS substation at MSETCL Bhandup

Billing break up for EPC package-Overall BOQ

Design, Engineering, Manufacturing and Testing at Manufacturer's works, packing and forwarding, transport, insurance during transit, delivery in good condition at site, storage at site, handling at site, Erection, Testing after Erection, commissioning, performance testing and handing over of the following

EPC for 245 kV Outdoor GIS substation at MSETCL Bhandup:BOQ-R0

Item	Description	UOM	Qty
B2.1	**SITC OF 220 KV GIS (4 Bays + 2 PT)** **+Refer Annexure-2 for billing break-up**	**Lot**	**1**
B2.2	**PROTECTION AND CONTROL SYSTEM BASED ON PROCESS BUS AND IEC61850 FOR 110 / 220 KV SUBSTATION EQUIPMENT** **+Refer Annexure-3 for billing break-up**	**Lot**	**1**
B2.3	**SUB-STATION AUTOMATION SYSTEM INCULDING REMOTE END** **+Refer Annexure-4 for billing break-up**	**Lot**	**1**
B2.4	**SITC OF COMMUNICATION SYSTEM** **+Refer Annexure-5 for billing break-up**	**Lot**	**1**
B2.5	**SITC OF BALANCE OF PLANT** **+Refer Annexure-6 for billing break-up**	**Lot**	**1**

Scope for Statutory approvals

Item	Description	UOM	Qty
B2.6	Statutory approval associated with the project like Intimation of disapproval (IOD), Construction commencement certificate, conditional & final NOC from MCGM Chief fire officer (CFO), Building permissions, approval from MCGM, Electrical inspectors' approval for all electrical installations under the project, Occupation certificate (OC), IGBC certificate etc required for installation, commissioning and load service of new 245 kV GIS at MSETCL Bhandup RSS project	Lumpsum	1

Scope for extended warranty

Item	Description	UOM	Qty
B2.7	Scope of works for activities under extended warranty as mentioned in technical specification (as applicable)	Lumpsum (cost for 05 years)	1

Note: This price schedule is for the purpose of price breakup only. Scope of works is as per the Scope and specification documents provided in the tender.

Annexure-2

245kV Outdoor GIS substation at MSETCL Bhandup

Billing break up for 245 kV GIS

Design, Engineering, Manufacturing and Testing at Manufacturer's works, packing and forwarding, transport, insurance during transit, delivery in good condition at site, storage at site, handling at site, Erection, Testing after Erection, commissioning, performance testing and handing over of the following

Item	Description	Unit	Nos.
1	**245kV Outdoor GIS with bus bar rating of 2500A, 50 kA, 3 Sec (Double Bus configuration) as per enclosed SLD**		
1.1	Line Bay – with double Cable Head 245kV, 2500 A continuous, 50 kA, 3 seconds, three phase enclosure type GIS along with 245kV double Cable termination arrangement complete (245kV, 2 Run, 1C x 1600 sq mm, Cu, Lead Sheath XLPE Cable) as per IEC 63371-209 (compatible with dry type EHV cable termination) with CT / VT and free-standing Local Control Panels	No.	2
1.2	Tie Bay – with Double Cable Head 245kV, 2500 A continuous, 50 kA, 3 seconds, three phase enclosure type GIS along with 245kV double Cable termination arrangement complete (245kV, 2 Run, 1C x 1600 sq mm, Cu, Lead Sheath XLPE Cable) as per IEC 63371-209 (compatible with dry type EHV cable termination) with CT / VT and free-standing Local Control Panels	No.	1
1.3	Bus Coupler Bay - 245kV, 3150A continuous, 50 kA, 3 seconds, three phase enclosure type GIS along with CT and free-standing Local Control Panels	No.	1
1.4	Bus VT 245kV, 50 kA, 3 seconds three phase enclosure type GIS Bus VT, along with maintenance type isolation device and high-speed Earthing switch for bus grounding.	Set	2
1.5	Surge Arrestor – (Optional price to be given) GIS type Surge Arrestors (SAs), one set (03 nos.) complete with all the accessories mounted on the GIS bays	Set	3
1.6	Mandatory Spares - Essential/Mandatory Spares as per Section 11.0 Details indicating unit prices to be submitted separately. Lump sum price to be indicated here.	Lot	1
1.7	Recommended Spares - Recommended Spares by manufacture Details indicating unit prices to be submitted separately. Lump sum price to be indicated here.	Lot	1
1.8	Special Erection / Maintenance Tools & Tackles Special Erection / Maintenance Tools & Tackles as per Section 11.0 Details indicating unit prices to be submitted separately. Lumped price to be indicated here.	Lot	1

Annexure-2

245kV Outdoor GIS substation at MSETCL Bhandup

Billing break up for 245 kV GIS

Design, Engineering, Manufacturing and Testing at Manufacturer's works, packing and forwarding, transport, insurance during transit, delivery in good condition at site, storage at site, handling at site, Erection, Testing after Erection, commissioning, performance testing and handing over of the following

Item	Description	Unit	Nos.
1.1	**Erection, testing & commissioning**		
A	Erection, testing & commissioning of per GIS bay & including all the accessories & SAs if needed (item 1.1 to 1.3 above). with complete material handling and material management at site.	Lot	1
B	Erection, testing & commissioning of VTs for Main Bus (03 nos per set) and with maintenance type earth switch for each bus (item 1.4 above) with complete material handling and material management at site.	Set	2
2	**Other Requirements**		
2.1	**UHF Portable PD monitoring system** Portable partial discharge measurement instrument along with all hardware & software.	Set	1
2.2	Providing system for SF6 pressure transmitters and their integration with SCADA over Modbus protocol for remote indication of compartment pressure on real time basis	Set	1
	Total Price		
	Notes:		
1	Any other item and accessories not specified above but necessary to complete the GIS commissioning has to be provide by GIS Bidder. A separate list with rate and cost of the same shall be provided by GIS Bidder.		

Annexure-3

245kV Outdoor GIS substation at MSETCL Bhandup

Design, Engineering, Manufacturing and Testing at Manufacturer's works, packing and forwarding, transport, insurance during transit, delivery in good condition at site, storage at site, handling at site, Erection, Testing after Erection, commissioning, performance testing and handing over of the following

SUPPLY:	**Protection System**

Item	Description	Unit	Nos	Remarks
	PROTECTION PANELS			
1	Completely prewired Simplex Protection Relay Panel comprising of all the Protection Schemes & accessories as per GTP Data sheet for **220 kV Kalwa-TATA Bhandup Line @TATA Bhandup end** with TYPE-A protection along with its networking accessories IED to gateway, IED to DRCA system, relevant LIUs, switches, patch cords and any other necessary communication system.	Set	1	M1 and M2 At TATA Bhandup Shall be Matched as per Kalwa end. M1-RED670 M2-P545 Separate LBBU relay to be considered as per MSETCL philosophy.
2	Completely prewired Simplex Protection Relay Panel comprising of all the Protection Schemes & accessories as per GTP Data sheet for **220 kV Salsette-TATA Bhandup Line @TATA Bhandup end** with TYPE-A protection along with its networking accessories IED to gateway, IED to DRCA system, relevant LIUs, switches, patch cords and any other necessary communication system.	Set	1	M1 and M2 At TATA Bhandup Shall be Matched as per Salsette end. M1-RED670 M2-P545 Separate LBBU relay to be considered as per MSETCL philosophy.
3	Completely prewired Simplex Protection Relay Panel comprising of all the Protection Schemes & accessories as per GTP Data sheet for **220 kV BusCoupler @TATA Bhandup end** with TYPE-B protection along with its networking accessories IED to gateway, IED to DRCA system, relevant LIUs, switches, patch cords and any other necessary communication system.	Set	1	Separate LBBU relay to be considered as per MSETCL philosophy.
4	Completely prewired Simplex Protection Relay Panel comprising of all the Protection Schemes & accessories as per GTP Data sheet for **220 kV Tie Line from TATA Bhandup to MSTECL Bhandup @TATA Bhandup and MSETCL Bhandup end** with TYPE-A protection along with its networking accessories IED to gateway, IED to DRCA system, relevant LIUs, switches, patch cords and any other necessary communication system.	Set	2	Separate LBBU relay to be considered as per MSETCL philosophy.
5	Completely wired Simplex Control and Protection Relay Panel comprising of all the Protection Schemes & accessories as per GTP datasheet for 220kV Busbar Protection **@TATA Bhandup end** of minimum 14 nos of bays with TYPE-F protection along with its networking accessories IED to gateway, IED to DRCA system, relevant LIUs, switches, patch cords and any other necessary communication system.	Set	1	Wiring to be done for 14 Bays

Annexure-3

245kV Outdoor GIS substation at MSETCL Bhandup

Design, Engineering, Manufacturing and Testing at Manufacturer's works, packing and forwarding, transport, insurance during transit, delivery in good condition at site, storage at site, handling at site, Erection, Testing after Erection, commissioning, performance testing and handing over of the following

SUPPLY:	**Protection System**

Item	Description	Unit	Nos	Remarks
	PMU panel for 220kV Kalwa- Bhandup and 220kV Bhandup-Salsette Line PMU Panel having capacity of single line with all relevant accessories for extending connectivity till SLDC as per shared datasheet and CEA guidelines. 1. PMU system as per PGCIL/CTU Requirement complete with full length pre wired panel with all necessary accessories, cables (LT Power/Control/ FO/Earthing,Patch Cords (fiber / Copper), LIU, Power supply unit etc as per B2.10 Datasheet. 2. GPS system as per B2.10 Datasheet. 3. L3 switch with FO+CU ports suitable for connecting for local networking (with all necessary accessories, cables including FO cable for inter connectivity etc. as per B2.10 Datasheet.i.e Nos. of Switches, Nos. of FO & Copper ports in each switch will be based on PMU quantity & required ports with 20% spare FO and CU ports on each switch. 4 12 Core FO armoured cable (MM/SM) -500 mtrs 5. CAT-6 UTP Cables - 500 mtrs			PMUs shall be placed at Kalwa and Salsette
6	6. LIU & Patch cords for neworking as per Architecture - 1 Lot	Set	2	ends.
7	Busbar Protection Bay Unit for MSETCl end Panel at MSETCL GIS I/C with all accessories necessary for integration with Existing Busbar protection of MSETCL	Set	1	Existing Busbar protection is Siemens make Distributed type 7SS
	SPARES			
1	One number spare IED of each type, each order code, each MLFB / CORTEC number shall be supplied as spare	Set	1	
2	One number spare auxiliary relays used for trip, alarm, supervision, PT selection, contact multiplication, TNC, lamp etc shall be supplied as spare.	Set	1	
3	Laptop for relay configuration and relay settings with following configuration: HP/Dell/Lenovo make, 15.6 inch, 32GB RAM, 500GB SSD, Core i7, with licensed copy of Windows 11 OS, with Antivirus, 2 number of USB ports, 1 ethernet port, 1 HDMI port, 1 RJ45 port and 1 serial port along with standard laptop carrying backsack.	No	1	
4	PMU	No	1	

SERVICES:	**Protection System**

Sr. No.	Description	Qty. Set / Nos.		
1	(i) Services for commissioning Protection, Automation and communication system along with appropriate human resources, Numerical relay testing kit for relay panel commissioning and integration of relays (existing and new one) with SCADA system to view disturbance record and Parameterization from remote for local as well as remote end. (ii) Services from engineer for other make IEDs for commissioning and integration with SAS and communication system. (iii) Services for integration of Relays with existing systems at local and remote ends.	lump sum	lump sum	
2	Integration Services of Tie to MSETCL Bay Panel in Existing Siemens Make 7SS85 Busbar at MSTECL Bhandup.	lump sum	lump sum	
3	Service for integration of PMU with PDC	lump sum	lump sum	

Annexure-4

245kV Outdoor GIS substation at MSETCL Bhandup

Billing break up for Station Automation

Design, Engineering, Manufacturing and Testing at Manufacturer's works, packing and forwarding, transport, insurance during transit, delivery in good condition at site, storage at site, handling at site, Erection, Testing after Erection, commissioning, performance testing and handing over of the following

Bill of Material of SAS for 220 KV MSETCL Bhandup - Conventional Substation				
Sl. No.	Item		Description	Qty
				MSETCL_Bhandup-220KV
1	Bay Control Unit(BCU)	1.1	**Bay RTUs with accessories for 220 KV Bays** **I/O Requirement :** With min 96 DI, 20 DO, 0 AI with MM2XPD (18 Nos) & MM4XPD (2 Nos) OMRON make Relays for each Digital Output, 2 No. of RS-485 Ports for Modbus Integration **Power Supply:** Redundant 48 V DC **Accessories**: Mounting kit,Pre-fabricated cables for I/Os, Field termination interface modules with LEDs, Disconnecting (Knife edge CKT4U) type Terminal blocks for Digital Inputs ,Droppable stud type terminal blocks (Elmex KLTDM4) for all Digital Outputs and power supplies. **Mounting:** To be installed in each 220 KV GIS LCP panel (Note :- DI and DO Quantity may subject to vary as per GIS Manufacturer Design. To be finalized during detailed Engineering)	4 Sets
2	Station Gateway	2.1	**Redundant Gateway for 220 KV System (RTU Based)** **Power Supply:** Redundant 48 V DC (DC-DC Converter and Diode Oring Unit to be considered) **Serial Ports :** Min 8 No of RS485 Ports for Modbus RTU **Mounting:** To be supplied with Pre-wired panel.	1 Set
		2.2	**Managed L3 Ethernet Switch for Communication (SAS)** **Communication Ports:** 24 PORT L3 W/100/1000 MBPS, Combination of FO & Copper Ports as per System Architecture Requirement. 2 No of Single Mode 1 GBPS SFP based Ports with SFP. **Power Supply:** Redundant 48 V DC (DC-DC Converter and Diode Oring Unit to be considered) **Mounting Arrangement:** To be mounted in Gateway panel **Qty:** 2 nos. of Switch	
3	Miscellaneous RTU Panel	3.1	**220 KV Miscellaneous RTU Panel** **I/O Requirement:** with 360 DI, 180 DO, 64 AI with Auxiliary Relays for each Digital Output, Min 4 No. of RS-485 Ports (Omron/OEN Relays for each Digital Output) **Power Supply:** Redundant 48 V DC (DC-DC Converter and Diode Oring Unit to be considered) **Mounting:** To be supplied with Pre-wired panel .Number of Panels shall be based on the configuration and with suitable clearance on maintenance aspects. **Other Accessories:** Pre-fabricated cables for I/Os, Auxiliaries relays for power supply monitoring, MCBs for all type of Power Supplies, Field termination interface modules with LEDs, Disconnecting (Knife edge CKT4U) type Terminal blocks for Digital Inputs ,Droppable stud type terminal blocks (Elmex KLTDM4) for all Digital Outputs and power supplies.	1 Set

Annexure-4

245kV Outdoor GIS substation at MSETCL Bhandup

Billing break up for Station Automation

Design, Engineering, Manufacturing and Testing at Manufacturer's works, packing and forwarding, transport, insurance during transit, delivery in good condition at site, storage at site, handling at site, Erection, Testing after Erection, commissioning, performance testing and handing over of the following

Bill of Material of SAS for 220 KV MSETCL Bhandup - Conventional Substation				
Sl. No.	**Item**		**Description**	**Qty**
		4.1	**Managed L2 Ethernet Switches for LCP RTUs, Numerical Relay, Misc. RTU Integration with Gateway.** **Qty:** Total 24 Port with 100/1000 MBPS in each Switch. Nos. of FO & Copper ports in each switch will be based on IED quantity & ports with 20% spare FO and CU ports on each switch. **Min Quantity of Switches shall be 2nos.** **Power Supply:** Redundant 48 V DC (DC-DC Converter and Diode Oring Unit to be considered) **Mounting Arrangement:** To be mounted in a Separate Network Panel.	1 Set
		4.2	**For all supplied items at 220KV MSETCL Bhandup Substation** **Networking accessories like Ethernet Switches, SM and MM LIU, patch panel (for each Ethernet switch), Pre-fabricated Patch cords (SM/MM Fibre optic, UTP) of suitable length, Conduits for all non-armoured cables, I/O boxes with Quad face plate, RJ45 connectors etc.** **Note :-** 1)At Remote End, Bidder to study Existing Architecture and propose solution for integration with Existing Architecture. Switches and other equipments to be considered for successful integration 2)At Stations where Relays to be integrated with existing DRCA, required Networking Accessories such as LIUs, Switches, IO Boxes for extending Network upto DRCA to be considered	1 Lot
		4.3	**Configuration Laptop for SAS** **Hardware:** Laptop with latest processor, 1 TB SSD, 32 GB RAM, DVD RW, 4 USB Ports, 1no Ethernet port, 15" Display with 1 no. RS-485 to USB converter **Power Supply:** 230 V AC Microsoft Windows compatible with latest version of configuration software, latest Microsoft Office License pack, Trend Micro Antivirus (Apex One) with three-year subscription, Configuration & maintenance software tools, Diagnostic tools. Logic building Application of RTU, Gateway **Note** :- RS-485 to USB Converter should have TX-RX Port at One End and USB at Other which can be connected in Laptop	1 Set
		4.4	**Communication Cable:** 4P X 0.36 Sq.mm unarmoured multistrand pair and overall shielded for serial communication	500 mtrs
		4.5	**Communication Cable:** 4P X 0.36 Sq.mm armoured multistrand pair and overall shielded for serial communication	2000 mtrs
		4.6	Armoured CAT6 UTP Cable	2000 mtrs
		4.7	Un-Armoured CAT6 UTP Cable	305 mtrs
		4.8	Armoured Fibre Optic Cable for SCADA 8 core, MM	2000 mtrs
	Communication	4.9	Armoured Fibre Optic Cable for SCADA 8 core, SM	500 mtrs
	Switches, Network	4.1	Temperature & Humidity Transmitter and integration with gateway on RS485 Modbus RTU	3 nos.
	and other	4.11	Protocol analyzer	1 Set
4	**Accessories forSAS**	4.12	Conduit	500 mtrs

Annexure-4

245kV Outdoor GIS substation at MSETCL Bhandup

Billing break up for Station Automation

Design, Engineering, Manufacturing and Testing at Manufacturer's works, packing and forwarding, transport, insurance during transit, delivery in good condition at site, storage at site, handling at site, Erection, Testing after Erection, commissioning, performance testing and handing over of the following

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Bill of Material of SAS for 220 KV MSETCL Bhandup - Conventional Substation				
Sl. No.	Item		Description	Qty
5	Multifunction Meter	5.1	**Multifunction Meter : For all 220 KV Bays and Bus PTs** **Accuracy Class: 0.2S** **Auxiliary Supplies: 90V-260 V AC or DC (Selectable)** **(PAS Software required for configuration of MFM to be installed in Laptop)**	6 nos
6	GPS Receiver	6.1	**GPS Receiver ,Clock with Time, Date and Frequency Display Unit with redundant antenna, Surge protector and cables** **Mounting Arrangement :** GPS Receiver to be mounted in Gateway Panel **Power Supply**: Redundant 48 V DC **Remote display Mounting :** Time, Date and Frequency Display Unit on a wall in C/R or R/R *Refer Technical specification for more details*	1 Set
7	Disturbance Record Collector and Analysis	7.1	**Disturbance Record Collector (DRC)**	1 Set
		7.2	**Disturbance Record Analysis System**	
		7.3	**Redundant Firewall cum Router**	
8	Satellite WorkStation for SCADA	8.1	**Satellite Workstation for SCADA** **To be supplied with operator workstation with hardware viz dual headed LED monitor,CPU,Optical Keyboard & Mouse and Software's with Trend Micro Apex-One Anti-virus (3years subscription) & Professional MS office** *(Refer Automation specification for More details)*	1 Set
9	Training	9.1	**Training: (Sub-Station Automation & 3rd party items)** 10 Engineers x 3 man-days (30 mandays) at Vendor's work	1 Set
10	Mandatory Spares	10.1	Supply of Mandatory Spares as per the specification (Refer Table-3 of the B2-3E Automation specification)	1 Lot

Annexure-4

245kV Outdoor GIS substation at MSETCL Bhandup

Billing break up for Station Automation

Design, Engineering, Manufacturing and Testing at Manufacturer's works, packing and forwarding, transport, insurance during transit, delivery in good condition at site, storage at site, handling at site, Erection, Testing after Erection, commissioning, performance testing and handing over of the following

Bill of Material of SAS for 220 KV MSETCL Bhandup - Conventional Substation				
Sl. No.	Item		Description	Qty
Services- Automation				
Sl. No.	Item	Description		MSETCL_Bhandup-
11	Services	11.1	Installation, Integration and Commissioning of Automation System - MSETCL Bhandup & remote stations for the supplied items a) Engineering b) Installation and commissioning of all supplied items c) Cable termination, continuity check of all communication cables d) All Protection Relay, MFM looping, T&H looping, Transformer Monitoring Devices, Cable Monitoring Devices (Shealth Monitoring, DTS, DAS etc), Auxillary System (Chargers, UPS, BESS,ACDB, DCDB etc) and their Integration with Gateway e) Preparation of ICS and Signal List f) Configuration and Testing of IED's, RTUs, Gateway, Monitoring Devices etc. g) Time Synchronization of Gateway, BCU,RTU, IEDs with GPS Receiver h) I/O testing, Pre- SAT testing of Hardware and Software functionality i) Integrated testing with Unified SCADA System j) 100% Integrated FAT & SAT for Hardware and Software k) Submission of as-built drawing in AutoCAD and PDF Format l) warranty for Hardware & Software inclusive of patch management and software upgradation for the period of 5 Years (Refer specification for more details)	Lumpsum
		11.2	Installation and commissioning of DRCA a) Engineering, Installation and commissioning of all supplied items b) Cable termination, continuity check of all communication cables c) Display Building viz SLD, Alarm & Event Page, Report Templates on DRCA d) Time Synchronization of DRCA system with Protection Relays & BCPUs. e) Configuration & integration of 220kV Protection Relays and any other Relays if any in DRCA system f) Integration of 33/22KV BCPUs with new DRCA System f) Configuration of Firewalls g) Integrated testing, Pre- SAT testing of Hardware and Software functionality with local & Central DR System. h) Integrated FAT & SAT for Hardware and Software i) Submission of As-built drawing in AutoCAD and PDF Format	Lumpsum
			Notes :-	
			Quantities indicated are Indicative only and shall vary based on site conditions and layout. The rates shall be fixed. Contractor has to provide a separate list with rate and cost separately and give total price for complete Electrical works. Items not listed but required for completing the works shall be done by the contractor without any additional payments.	
			Supply: Rates for Supply shall include all taxes, Duties, levies, Packing and forwarding, Transport to site, Transit insurance etc.	
			Installation: Rates for installation shall include all taxes. Handling, movement to site, assembly, alignment, cleaning, installation, testing and commissioning including labour, tools, tackles, consumables etc. complete.	

Annexure-5

245kV Outdoor GIS substation at MSETCL Bhandup

Billing break up for COMMUNICATION SYSTEM

Design, Engineering, Manufacturing and Testing at Manufacturer's works, packing and forwarding, transport, insurance during transit, delivery in good condition at site, storage at site, handling at site, Erection, Testing after Erection, commissioning, performance testing and handing over of the following

Sr. No.	Material	Preferred make	UoM	Quantity			
				Salsette	Bhandup	Kalwa	Total
1	96 core Single mode armored FO cable with HDPE duct (40/33mm)	Finolex/Apar/Birla	metre	500	1000	500	2000
2	12 core Single mode armoured FO-cable	Finolex/Apar/Birla	metre	500	1000	500	2000
3	12 core Multi mode armoured FO-cable	Finolex/Apar/Birla	metre	500	1000	500	2000
4	Fiber Termination Box Suitable to terminate 12-core Single Mode underground Fiber optic cable 19" Rack Mounting with Connectors loaded with SM type pigtails LC type couplers and cassettes. Rodent Proof design.	AFS/Commscope	Nos.	3	5	3	11
5	Fiber Termination Box Suitable to terminate 12-core Single Mode underground Fiber optic cable DIN RAIL Mounting with Connectors loaded with SM type pigtails LC type couplers and cassettes. Rodent Proof design.	AFS/Commscope/Preston	Nos.	3	5	3	11
6	Fiber Termination Box Suitable to terminate 96-core Single Mode underground Fiber optic cable 19" Rack Mounting with Connectors loaded with SM type pigtails LC type couplers and cassettes. Rodent Proof design.	AFS/Commscope	Nos.	0	2	0	2
7	Fiber Termination Box Suitable to terminate 12-core Multi Mode underground Fiber optic cable 19" Rack Mounting with Connectors loaded with MM type pigtails ST type couplers and cassettes. Rodent Proof design.	AFS/Commscope	Nos.	2	3	2	7
8	Fiber Termination Box Suitable to terminate 12-core Multi Mode underground Fiber optic cable DIN RAIL Mounting with Connectors loaded with SM type pigtails ST type couplers and cassettes. Rodent Proof design.	AFS/Commscope/Preston	Nos.	2	3	2	7
9	Simplex FO multimode patch cord with one end ST port and other end as per relay FO-port simplex - 5 meter	AFS/Commscope/Tyco/3M	Nos.	6	12	6	24
10	Simplex FO multimode patch cord with one end ST port and other end as per relay FO-port simplex - 10 meter	AFS/Commscope/Tyco/3M	Nos.	6	12	6	24
11	Simplex FO Single mode patch cord with one end LC-other end as per relay FO-port simplex -5 meter	AFS/Commscope/Tyco/3M	Nos.	6	12	6	24
12	Simplex FO Single mode patch cord with one end LC-other end as per relay FO-port simplex -10 meter	AFS/Commscope/Tyco/3M	Nos.	10	10	10	30
13	Simplex FO multimode patch cord LC-ST type - 10 metre	AFS/Commscope/Tyco/3M	Nos.	8	16	8	32
14	Simplex FO Single mode patch cord LCPC-SCPC type simplex - 10 meter	AFS/Commscope/Tyco/3M	Nos.	6	6	6	18
15	Simplex FO Single mode patch cord LCPC-LCPC type simplex - 2 meter	AFS/Commscope/Tyco/3M	Nos.	10	10	10	30
16	Simplex FO Single mode patch cord LCPC-LCPC type simplex - 10 meter	AFS/Commscope/Tyco/3M	Nos.	10	10	10	30
17	PVC flexible conduit of 0.75 inch diameter	Reputed make	Meter	300	300	300	900

Annexure-5

245kV Outdoor GIS substation at MSETCL Bhandup

Billing break up for COMMUNICATION SYSTEM

Design, Engineering, Manufacturing and Testing at Manufacturer's works, packing and forwarding, transport, insurance during transit, delivery in good condition at site, storage at site, handling at site, Erection, Testing after Erection, commissioning, performance testing and handing over of the following

Sr. No.	Material	Preferred make	UoM	Quantity			
				Salsette	Bhandup	Kalwa	Total
18	42 U floor mounting type panel, suitable for 19'' equipment mounting, width 800 mm and depth 800 mm having following accessories. 1. Offered panel shall have front and back opening with locking facility. 2. Panel shall have robust aluminium extruded main frame and all steel sheet shall be powder coated. 3. Proper Provision for cable entries and gland plate from bottom side 4. 19 inch equipment mounting trays – 4 Nos. 5. AC distribution board for 8 outlets. Vertical mounted at rear side. 6. It shall have roller wheels. 7. Ventilation Fan 8. Depth support channels – 3 pairs 9. Cable channel – 2 Nos. 10. Panel shall have proper earthing connection arrangement (Earthing bar). 11. Panel shall be provided with C-channel mounted DC MCB's 2 nos. (-48 V DC, 10 Amp rating) and AC MCB (230 V AC, 10 Amp rating) 12. Licenses for integration with the existing NMS. 13. Services for installation, testing, commissioning and integration with the existing system/network of Tata Power	President/VALRACK/WQIndia	Nos.	0	1	0	1

Annexure-5

245kV Outdoor GIS substation at MSETCL Bhandup

Billing break up for COMMUNICATION SYSTEM

Design, Engineering, Manufacturing and Testing at Manufacturer's works, packing and forwarding, transport, insurance during transit, delivery in good condition at site, storage at site, handling at site, Erection, Testing after Erection, commissioning, performance testing and handing over of the following

Sr. No.	Material	Preferred make	UoM	Quantity			
				Salsette	Bhandup	Kalwa	Total
	Panel mounted stacked Layer 3 switches consisting of : 1. Layer 3 switches – 2 Nos., each with a) 24 copper ports 10/100/1000 mbps b) Network expansion module suitable for at least 4 SFP modules 1/10 Gbps d) SFP Transceiver 1310 nm single mode 40 km - 2 Nos. e) SFP Transceiver 1550 nm single mode 80 km - 2 Nos. f) Stacking modules with Stacking Cables g) Power supply module - 48 V DC with cable - 1 No. h) USB compatible console cable i) Accessory kit & Rack mounting kit j) Software license for OS, stacking and other advance routing functions 2. Patch panel 24 ports – 2 Nos. 3. 3 Ft UTP CAT6 patch cord - 12 Nos. 4. 7 Ft UTP CAT6 patch cord - 6 Nos. 5. I/O Box dual port with RJ45 female connector - 2 Nos. 6. Panel pre wired 42 U – 1 No., 19" 42 U network Panel with all standard accessories (such as Mounting Trays Minimum - 3 Nos. Window Mouldings, Cable Manager-3 Nos., Cable routing trays ,Cooling Fans -4 Nos., Base plate with pre punched knockable inlets for cable entry, Cable Routing trays on both inner walls, Front Glass Door, Split Back door, AC distribution board with minimum 8 outlets) 7. DC MCBs 10A -4 Nos., AC MCB-230V AC - 1 No. 8. Independent Diode Oring Units for each DC Voltage input source, Make Paramount with appropriate current rating 9. MCBs for DC Voltage Input sources, 2 Nos. 48V DC and 2 Nos. 220/110V DC with appropriate current rating						
19	10. Redundant 220/110VDC to 48VDC converter, Make: Cossel, Model: PBA600F-48	Cisco/ Juniper/ Allied Telesis	Set	0	1	0	1

Annexure-5

245kV Outdoor GIS substation at MSETCL Bhandup

Billing break up for COMMUNICATION SYSTEM

Design, Engineering, Manufacturing and Testing at Manufacturer's works, packing and forwarding, transport, insurance during transit, delivery in good condition at site, storage at site, handling at site, Erection, Testing after Erection, commissioning, performance testing and handing over of the following

Sr. No.	Material	Preferred make	UoM	Quantity			
				Salsette	Bhandup	Kalwa	Total
20	SDH/MPLS-TP equipment for line teleprotection and data connectivity (i) Dual CPU with 4*10G MPLS-TP fiber ports - 1 set (ii) C37.94 interface card for differential protection with min. 4 ports - 2 Nos. (iii) SDH aggregator card with STM-1/4/16 (4 ports) - 1 No. (iv) E1 interfaces card with min 8 E1 ports - 1No. (v) 10/100/1000M Ethernet switching card with min 8 ports with POE - 1 No. (vi) Teleprotection interface card with 4 commands - 2 Nos. (vii) Swing frame panel - Rittal make (viii) Dual power supply wiring to incorporate 2 Nos. 110V/220V DC sources and 2 Nos. ungrounded 48VDC sources. Appropriate DC-DC converters to be considered as below: -- 110V/220V to -48VDC converter - 2 Nos. -- Ungrounded 48VDC to -48VDC converter - 2 Nos. (ix) Licenses for integration with the existing NMS. (x) Services for installation, testing, commissioning and integration with the existing system/network of Tata Power	ABB FOX615	Set	0	1	0	1
21	Cards for existing SDH/MPLS-TP equipment for smooth integration: (i) C37.94 interface card for differential protection with min. 4 ports loaded with SFPs- 2 Nos. (ii) Teleprotection interface card with 4 commands - 1 No. (iii) 10G MPLS-TP SFP / 1550nm / 80km - 2 Nos. (iv) 1G MPLS-TP SFP / 1550nm / 80 km - 2 Nos. (v) STM-4 / 1550nm / 80km - 2 Nos.	ABB FOX615	Lot	1	0	1	2
22	Substation firewall IDS/IPS in HA mode	Checkpoint	Set	0	1	0	1
23	Media converter: Fiber to Ethernet / Single mode / LC type / 1310nm/ 40km and 10/100/1000Mbps ethernt with dual power supply 230VAC and 48-72VDC	CTC Union	Nos.	2	4	2	8
24	Industrial Grade Public Address System covering all building floorss, operational areas, security gate and entire building periphery	Ahuja/Bosch/Mecall systems	Nos.	0	1	0	1
25	RTU for Fiber monitoring system	EXFO	Nos.	0	1	0	1

Annexure-5

245kV Outdoor GIS substation at MSETCL Bhandup

Billing break up for COMMUNICATION SYSTEM

Design, Engineering, Manufacturing and Testing at Manufacturer's works, packing and forwarding, transport, insurance during transit, delivery in good condition at site, storage at site, handling at site, Erection, Testing after Erection, commissioning, performance testing and handing over of the following

Sr. No.	Material	Preferred make	UoM	Quantity			
				Salsette	Bhandup	Kalwa	Total
26	Network Layer-3 switch for STU metering connectivity to SLDC (i) 24 ports - 10/100/1000 Mbps - Copper (ii) 4 ports - 100/1000Mbps - SFP (iii) SFP Transceiver modules/1550nm/80km/1G - 4 Nos. (iv) Power supply module = -48VDC with supply cables (v) USB compatible console cable (vii) Accessory kit & Rack mounting kit (viii) Software license for OS and other advance routing functions	Cisco/ Juniper/ Allied Telesis	Nos.	1	1	1	3
27	Media gateway FXO 16 channel for VOIP extension with services of installation, testing and commissioning	Core IP	Nos.	2	0	0	2
28	Media gateway FXS 16 channel for VOIP extension with services of installation, testing and commissioning	Core IP	Nos.	0	2	2	4

Annexure-6

245kV Outdoor GIS substation at MSETCL Bhandup

Billing break up for BALANCE OF PLANT(BOP) SYSTEM

Design, Engineering, Manufacturing and Testing at Manufacturer's works, packing and forwarding, transport, insurance during transit, delivery in good condition at site, storage at site, handling at site, Erection, Testing after Erection, commissioning, performance testing and handing over of the following

Sr No	Equipment description	Tentative Quantity
	SITC of following equipment as per specifications	
	LV CABLES	
1	LV Power cables, Aluminum, XLPE, Armored (1.1 kV Class) as per standard specification.	1 Lot
2	Control / Instrumentation / SCADA cables, Copper, PVC, Armoured (1.1 kV Class)	1 Lot
	AC System Auxiliaries	
	Following requirement for ACDB is tentative, however bidder to consider complete scope main ACDB and Sub-ACDB project for commissioning of project as per statutory guidelines	
3	Sub ACDB (Aluminum Bus bar) – 245 kV GIS	1 No.
	DC system	
	Following requirement for DCDB is tentative, however bidder to consider complete scope main DCDB and Sub-DCDB project for commissioning of project as per statutory guidelines	
	220V DC System	
4	220V DC Plante Battery System – Minimum 535 Ah.	
	Actual sizing shall be as per the project requirement and future bays requirement. It shall be as per the standard Ah rating mentioned in battery standards specifications.	2 No.
5	220V DC SMPS Battery Charger – Minimum 120 Amp FCB and suitable, as per battery and load cycle	2 No.
6	220V to 48V DC Converter for SCADA and Telecom Loads	2 No.
7	220V Sub DCDB (Copper Bus bar)	1 No.
8	Cable carrier system as per specification	1 Lot
9	Earthing & Lightning System (includes indoor and outdoor earthing): Also includes above and below ground earthing rated for 50 kA for 3 sec.- earth grid shall be with copper material.	
	Earthing mat design shall be done by Tata Power. Bidder shall indicate the no and location of risers to be tapped from the mat to the floor but executed by Tata Power. Further earthing arrangements from riser to all the equipments including EHV GIS shall be in the scope of the bidder.	1 Lot
	Procurement of earthing related material and laying for Main Earthing Grid shall not be in scope of the bidder.	
	Material required for earthing of equipment to riser is in the scope of bidder.	
10	DSLP protection as per IEC 62305 and Tata Power specifications for entire GIS building, transformers and complete station area is proposed.	1 Lot
11	Miscellaneous Support Structures, base frames and fixtures for all equipment	1 Lot
12	Safety Equipment's	1 Lot
13	Boards at each floor	
	• EHV/MV/LV SLD boards for complete station	1 Lot
	• SLD LOTO Key boards	
	• Tool arrangement boards	
14	LOTO accessories	1 Lot
15	Safety Signage boards	1 Lot
16	Safety tools & tackles	1 Lot

Annexure-6

245kV Outdoor GIS substation at MSETCL Bhandup

Billing break up for BALANCE OF PLANT(BOP) SYSTEM

Design, Engineering, Manufacturing and Testing at Manufacturer's works, packing and forwarding, transport, insurance during transit, delivery in good condition at site, storage at site, handling at site, Erection, Testing after Erection, commissioning, performance testing and handing over of the following

Sr No	Equipment description	Tentative Quantity
	Mechanical Equipment's	
17	Heating Ventilation and Air Conditioning system (HVAC)	1 Lot
18	Public address System	1 Lot
19	Spares for electrical auxiliaries (As per standard specification mention in Section-B for each equipment/ system within battery limit)	1 Lot
20	Supply of ISI marked 245 kV and 1.1 kV insulating mats as per IS 15652 as per specifications	1 Lot
21	Supply and installation of metal nameplates per feeder as per Tata Power standard requirement as per specification	1 Lot
22	Supply and services for Fire retardant paint for 245 kV cables	Approx.60 meters
23	Other miscellaneous material, resources, activities as per specifications issued and required for completion of Balance of Plant job scope.	LS
24	Housekeeping and cleaning/removal of waste material like big rocks and excavated soil, solar panel pallets, plastic waste, wooden material & any other scrap material at sites shall be removed/disposed from plant.	1 Lot
	It is complete liability of contractor for disposing of material undisputedly outside the plant area.	
25	Construction Power supply equipment/system as per Clause no. A2.14 in above section-A.	1 Lot
26	Support structures for 220 kV Power Cables from the ground floor to 220kV GIS floor	1 Lot