

NOTICE INVITING TENDER

The Tata Power Company Limited Invites Tenders (Two-Part Bidding Process), from interested and eligible Vendors for the following Works required for its various Transmission Receiving Stations.

A. Summary of the tendered packages:

Tender Enquiry No.	Work Description	EMD (Rs.)	Tender Participation Fee (Rs.)	Last date and time for Payment of Tender Participation Fee*
CC27NK016	Supply and Services for Protection, Automation, Communication and Metering system for various Transmission receiving station	4,50,000/-	Rs. 2,000/-	1500 Hrs. 18 th August 2026

Interested bidder is strongly advised not to wait by above time and purchase the tender immediately to get the link for bid submission. This will enable them to communicate/raise queries against the subject tender in time.

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 1500 hours on **Tuesday – 18th July 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 **CC27NK016**.

Authorization Letter along with proof of submission of tender fee should be e-mail to **Mr. Nithishkumar Kuppusami** (n.kuppusami@tatapower.com) and copy to **Ms. Vaishali Kachare** (vaishali.Kachare@tatapower.com)

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. Addition technical details: Prequalification Criteria (Technical & Commercial):

Pre-qualification Requirement Criteria			
1	2	3	4
S No	Parameter	Tata Power Requirement	Documents To be submitted by Vendor to ascertain meeting of Pre-qualification requirement
1	Infrastructure	Bidder must be an OEM of Protection relays, Sub-station Automation and Communication system, having manufacturing facility/ assembly in India	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.
2	Supply & Experience	1. The bidder should have supplied minimum 20 nos. Protection, Automation and Communication systems for 110 kV and above sub-stations with at least 10,000 Input-Output Points (of Gateways) for each project. 2. The system supplied should have been in satisfactory commercial operation for a minimum period of 05 years as on scheduled date of the bid opening. 3. Bidder shall offer latest software on open architecture and should have supplied these at least for 5 projects in last 2 years. 4. Protection and Sub-Station Automation must be from the same OEMs. Indian Subsidiaries of global companies having plant in India are also eligible to bid if the qualification requirements stated above are met independently or in combination with the parent company. Declaration from parent company needs to be submitted.	Supply List & Performance Certificates from the utilities / clients 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.
3	Type Test	The bidder shall submit Type test reports obtained from NABL/ International Accredited Lab for the equipment / material offered. The type tests should have been conducted on the equipment / material of the same design. Type test report shall be detailed with all pages included and same shall be shared without any nondisclosure agreement. The type tests should have been conducted within 5 years prior to the date of bid opening. Time period for type test may be extended by another 5 years as a special case, if there is no change in design / material of construction (MOC). In case the type test reports furnished are not for the quoted equipment / material but for the equipment / material with higher voltage class and/or different capacity, then 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	Type Test Report. 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) 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 dispatch of the

		dispatch of the equipment / material.	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)
4	EPC Experience (If applicable)	In case the package involves installation & commissioning of the equipment/ material, then the bidder shall have the following experience: a) Bidder should have successfully completed one single order of value INR 170 Lakhs of similar work in last three years) OR b) Bidder should have successfully completed two single orders of value INR 100 Lakhs of similar work in last three years) OR c) Bidder should have successfully completed three single orders of value INR 80 Lakhs of similar work in last three years)	Performance Certificates from the utilities / clients
5	Capability of Handle Job financially if awarded	Average Annual Turnover of the bidder for last 03 years shall not be less than INR 600 Lakhs.	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) The Prequalification Criteria published along with the tender "In Section C.1 Techno-Commercial PQR" 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.

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

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

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

Note: Above Pre-qualification details need not be submitted at this stage. These shall be required to be submitted along with bid submission. At this stage, Interested Vendors who fulfill above criteria need to participate in tender by paying tender fee and submitting authorization letter as detailed in section "B" above.

D. Price Bid Format: (BOM)

PAC System and Metering System for Chola Kalyan Line 3			
Protection System			
Sr. No	Description	UOM	Qty
	SUPPLY:		
	Lines Description:- 110kV Chola Kalyan 3rd Circuit Line		
1	Completely prewired Conventional Simplex Protection Relay Panel comprising of all the Protection Schemes & accessories as per GTP Data sheet for 110kV Chola Kalyan 3rd Line at TPC Kalyan 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

2	Completely prewired Conventional Simplex Protection Relay Panel comprising of all the Protection Schemes & accessories as per GTP Data sheet for 110kV Chola Kalyan 3rd Line at Railway Chola 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
	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 for 3 years subscription, 2 number of USB ports, 1 ethernet port, 1 HDMI port, 1 RJ45 port and 1 serial port along with standard laptop carrying backpack.	No	1
	SERVICES:		
Sr. No	Description	UOM	Qty
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	1
2	Services for Integration of 110kV 01 No Bay in Existing Busbar Protection Panel at TPC Kalyan	lump sum	1
			Total Basic Price
Automation System			
Substation Automation System for 110kV Chola – Kalyan 3rd Circuit Feed			
Sr. No	Description	UOM	Qty
	(Chola End)		
	Pre-wired Redundant RTU cum Gateway		

1	Pre-wired Redundant RTU cum Gateway (RTU based Hardwire Only) - Power Supply: Redundant 48 V DC, MCBs, 220VDC to 48VDC redundant convertors along with, Diode oring units and AC & DC MCB's to be considered for all panels for redundant 48V DC power supply arrangement Gateway Configuration Software with License I/O Requirement: with 120 DI, 40 DO with Auxiliary relay (Omron Relay for Devices Control & OEN/Omron Relays for other Commands) for each Digital Output 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 KLTD4) for all Digital Outputs and power supplies. Mounting: To be supplied with Prewired Panels (Size: 2300 mm x 800 mm x 800 mm, both side opening). The Panel Quantity shall be based on the configuration and with suitable clearance on maintenance aspects.	Set	1
	Managed L3 Ethernet Switch for Station level 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 RTU cum Gateway Panel Qty: 2 nos. of Switch	Set	1
	GPS Receiver		
2	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 RTU cum Gateway Panel Power Supply: Redundant 48 V DC <i>Refer Technical specification for more details</i>	Set	1
	Networking Accessories		
3	Networking Accessories Networking accessories for integration of BCU's, Relays, Gateway, Condition monitoring devices : All required networking accessories like LIU (With each Relay Panel), Ethernet Switches, Patch panel (for each Ethernet switch), Patch Chords (Fibre optic, UTP) of suitable length, The connectors will be selected to match that of the IEDs and SFPs on the switches, Conduits for all nonarmoured cables, I/O boxes with Quad face plate, 24 Port Patch panels for each L2/L3switch, RJ45 connectors etc. Bidder to consider 20% of spare qty of each component.	Set	1
	Armoured CAT6 UTP Cable (1 Lot = 305 metres)	Mtr	305
	4P X 0.36 Sq. mm armoured multistrand pair, overall shielded, for integration of MFM and other IEDs (1Lot =305 mtrs)	Mtr	305
	8 Core Armoured Multi-mode Fibre Optic Cable (1 Lot = 305 metres)	Mtr	305
	PVC flexible conduit rodent proof design with steel wires embedded (200 Mtr)	Mtr	200
	Kalyan		
	Communication Switches, Network and other Accessories for SAS		

4	For all supplied items at 110kV Kalyan 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.	Set	1			
	Armoured Fibre Optic Cable for SCADA 8 core, Multimode	Mtr	305			
Sr. No	Description	UOM	Qty			
	Services					
5	Installation, Integration and Commissioning of supplied SAS at Tata Power 110kV Kalyan & 110kV Chola End : 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 and Integration with Gateway e) Preparation of ICS and Signal List f) Configuration and Testing of IED's, RTUs, Gateway g) Integration of existing BCU, Protection relays, IEDs, Condition monitoring system with Existing Gateway. h) Time Synchronization of Gateway, BCU,RTU, IEDs with GPS Receiver i) I/O testing, Pre- SAT testing of Hardware and Software functionality j) Integrated testing with Unified SCADA System k) 100% Integrated FAT of GIS,PAC at bidder's work & SAT for Hardware and Software l) Submission of as-built drawing in AutoCAD and PDF Format m) warranty for Hardware & Software inclusive of patch management and software upgradation for the period of 5 Years	Lum psum	1			
	Services of OEM for Configuration, Integration & Testing of 110kV Relays with existing Gateway at 110kV Kalyan RSS	Lum psum	1			
	Services of M/s Kalkitech for configuration, integration with both local DRCA System of the respective station & Centralised DRCA system at existing Tata Power 110kV Kalyan.	Lum psum	1			
			Total Basic Price			
Communication System						
Sr. No	Material	Preferred make	UoM	Quantity		
				Kalyan	Chola	Total
A	SUPPLY					
A.1	12 core Single mode armoured FO-cable	Finolex/Apar/Birla	metre	500	500	1000
A.2	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/Comm scope	Nos.	2	2	4

A. 3	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/Comm scope	Nos.	2	2	4
A. 5	Simplex FO Single mode patch cord with one end LC-other end as per relay FO-port simplex -5 meter	AFS/Comm scope/Tyco /3M	Nos.	4	4	8
A. 6	Simplex FO Single mode patch cord with one end LC-other end as per relay FO-port simplex -10 meter	AFS/Comm scope/Tyco /3M	Nos.	4	4	8
A. 8	Simplex FO Single mode patch cord LCPC-LCPC type simplex - 10 meter	AFS/Comm scope/Tyco /3M	Nos.	4	4	8
A. 9	Simplex FO Single mode patch cord LCPC-LCPC type simplex - 2 meter	AFS/Comm scope/Tyco /3M	Nos.	8	8	16
A. 10	Simplex FO Single mode patch cord LCPC-LCPC type simplex - 10 meter	AFS/Comm scope/Tyco /3M	Nos.	8	8	16
A. 11	Simplex FO Single mode patch cord LCPC-STPC type simplex - 10 meter	AFS/Comm scope/Tyco /3M	Nos.	8	8	16
A. 12	PVC flexible conduit of 1 inch inner diameter	Reputed make	Meter	200	200	400
A. 13	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 Plinth base of 100mm height for mounting on 800*800mm frame 7. Ventilation Fan 8. Depth support channels – 3 pairs 9. Cable channel & 24 port I/O patch panel – 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. Services for installation, testing, commissioning and integration with the existing system/network of Tata Power	President/V ALRACK/W QIndia	Nos.	0	1	1

A. 14	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 10. Redundant 220/110VDC to 48VDC converter, Make: Cossel, Model: PBA600F-48 11. Licenses and integration with existing NMS	Cisco/Juniper/Allied Telesis	Set	0	1	1
A. 15	Substation firewall IDS/IPS in HA mode	Checkpoint	Set	0	1	1
A. 16	Media converter: Fiber to Ethernet / Single mode / LC type / 1310nm/ 40km and 10/100/1000Mbps ethernet with dual power supply 230VAC and 48-72VDC	CTC Union	Nos.	2	2	4
A. 17	FXO Media convertor with 4 Analog voice ports - SM 80km, AC+DC power supply	CTC Union	Nos.	2	0	2
A. 18	FXS Media convertor with 4 Analog voice ports - SM 80km, AC+DC power supply	CTC Union	Nos.	0	2	2
A. 19	Telephone instruments analog phones with caller ID display along with accessories I/O box, RJ11 connector and rosette.	Alcatel, Beetel	No.s	0	4	4
A. 20	Armoured CAT6 cable	Reputed Make	Meters	200	200	400
A. 21	LC-type 10dB Attenuator	Reputed make	Nos.	10	10	20
A. 22	LC-LC type Coupler (Duplex)	Reputed make	Nos.	5	5	10

A. 23	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/Comm scope	Nos.	3	2	5
A. 24	96 core Single mode armored FO cable with HDPE duct (40/33mm)	Finolex/Apar/Birla	Meters	700	500	1200
B	SERVICES					0
B. 1	"Installation, Testing and Commissioning of Communication System at local and remote ends" a) Design and Engineering b) Installation and commissioning of all supplied items c) Cable termination, continuity check of all supplied communication cables d) Preparation of ICS e) Integrated testing, trials and commissioning of communication systems at site. f) Submission of as-built drawing in AutoCAD and PDF Format		Lot	1	1	2
				Total Basic Price		
METERING PANELS- TATA POWER ABT						
	SUPPLY					
Sr. No.	Description				UOM	Qty
A	PREWIRED METERING PANELS					
1	Supply of Secure make Apex 150 ABT type meters.(No internal CTR and PTR to be programmed inside Meter)				Nos	1
2	Design, Engineering, Manufacturing, Inspection, loading, Supply, Transport, Unloading at site, Storage, Erection, Testing, Commissioning of Prewired metering panels with Accessories				Nos	1
B	COMMUNICATION ACCESSORIES					
1	Supply and connection of Serial Device server (Make Moxa, Model – Nport 5232)				Nos	2
2	Supply, laying, termination and connection of Armoured CAT6 (Twisted pair cable) between meters to communication panel				mtrs	200
3	RJ45 I/O Boxes with I/Os (4 Port)				Nos	4
4	CAT6 Patch cables for connectivity between I/O and Meters / L3 switches (2 mts)				Nos	12
5	RJ 45 Connectors				Nos	10
6	Media Converters (Optical to Ethernet) (with 1310nm/1550nm) LC SFP type FOT (Make CTC Union, model FMC-2000MS)				Nos	4

7	Network Layer-3 switch for STU ABT metering connectivity to SLDC (Preferred make: Cisco/Allied Telesis/Juniper) (i) 24 ports - 10/100/1000 Mbps - Copper (ii) 4 ports - 100/1000Mbps - SFP (iii) SFP Transceiver modules/1550nm/70km/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	Nos	1
	SERVICES		
1	Services for preparation of cable schedule and ICS, Installation, testing, configuration of ABT Meters and final commissioning of all material mentioned under supply scope.	LS	1
	SPARES		
1	TTB	Nos	1
2	Secure Make Apex ABT Meter	Nos	1
METERING PANELS- STU			
	SUPPLY		
Sr. No	Description	UOM	Qty
A	PREWIRED METERING PANELS		
1	Supply of L&T make ER300P STU - ABT type meters.	Nos	2
2	Design, Engineering, Manufacturing, Inspection, loading, Supply, Transport, Unloading at site, Storage, Erection, Testing, Commissioning of Prewired metering panels with Accessories	Nos	1
B	COMMUNICATION ACCESSORIES		
1	Supply of Network switch (L2 switch) 8 Port Cu with SFP module and SFP Single mode(Kyland Make: KIEN7009)	Nos	2
2	Supply of Data Concentrator Unit with sim interface (1 DCU for 24 meters)(Kalkitech Make: Sync 2000)	Nos	1
3	CAT 6 LAN cable (pre-crimped 7 feet)	Nos	10
4	Armoured CAT 6 LAN cable for Interpanel	mtrs	200
5	Fiber Optic Cable 48 core Armoured Single mode with HDPE duct	mtrs	1000
6	Media Converters (Optical to Ethernet) (with 1310nm/1550nm) LC SFP type FOT Dual AC+DC powersupply	Nos	15
7	FOP Patch chords LC-PC-LC-PC (5 meters) Single mode	Nos	15
8	FOP Patch chords LC-PC-SC-PC (5 meters) Single mode	Nos	8
9	LIU 19 inch rack mountable LC-PC type single mode 48 core (AFS/Commscope/TE/Tyco make only)	Nos	1
10	LIU Din rail mounting 12 core Single mode LC-PC LIU	Nos	1

11	I/O Box with RJ45 I/O loaded 4 No.s in each box	No.s	5
12	RJ45 connectors	No.s	20
13	Cable dressing, laying, Splicing, interpanel CAT6 LAN cable cripming and routing	Lot	1
	SERVICES		
1	Services for Supervision during Erection, installation.	LS	1
	SPARES		
1	TTB	Nos	1
			Total Basic Price

PAC & Metering System for Powai				
Protection System				
Sr. No	Description	UOM	Qty	
	SUPPLY			
1	Completely prewired Simplex Protection Relay Panel comprising of all the Protection Schemes & accessories as per GTP Data sheet for 110 kV Powai-Metro Line -1 at TATA Powai 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. Bidder to Match M1 and M2 with remote End	Set	1	
2	Completely prewired Simplex Protection Relay Panel comprising of all the Protection Schemes & accessories as per GTP Data sheet for 110 kV Powai-Metro Line -2 at TATA Powai 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. Bidder to Match M1 and M2 with remote End	Set	1	
	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	
Sr. No	Description	UOM	Qty	
	SERVICES			
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	1	
2	Services for Integration of 2 Bays in the Existing Busbar Panel @TATA Powai end	lump sum	1	
				Total Basic Price
Automation System				
Substation Automation System for 110kV Powai Metro Substation				
Sr. No	Description	UOM	Qty	
	Bay Control Unit(BCU)			

1	BCUs with accessories for 110 kV Bays I/O Requirement / BCU: with 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: 48 V DC Accessories: Mounting kit, Pre-fabricated cables for I/Os, Field termination interface modules, Disconnecting (Knife edge CKT4U) type Terminal blocks for Digital Inputs, Droppable stud type terminal blocks (LMAX) for all Digital Outputs and power supplies. Mounting: To be installed in each 110kV GIS LCP panel	Sets	2
	Station Gateway		
2	Redundant Gateway for 110 kV System Power Supply: Redundant 48 V DC Mounting: To be supplied with Pre-wired panel.	Set	1
	Managed L3 Ethernet Switch for Station level Communication (SAS) Communication Ports: 24 PORT L3 W/100/1000 MBPS, Combination of FO & Copper Ports Power Supply: Redundant 48 V DC Mounting Arrangement: To be mounted in Gateway panel Qty: 2 nos.		1
	Miscellaneous RTU Panel		
3	Miscellaneous RTU Panel I/O Requirement: with 240 DI, 120DO, 32 AI with Auxiliary Relays for each Digital Output, Min 4 No. of RS-485 Ports Power Supply: Redundant 48 V DC 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	Set	1
	Communication Switches, Network and other Accessories for SAS		
	Managed L2 Ethernet Switches for Numerical Relay, Monitoring devices, Aux Systems integration with Gateway (Network panel-1_CRP floor). 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.	Set	1

	For all supplied items at 110KV Powai Substation and its Remote Stations 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.	Lot	1
	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. serial 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	Set	1
	Communication Cable: 4P X 0.36 Sq.mm unarmoured multistrand pair and overall shielded for serial communication	mtrs	500
	Communication Cable: 4P X 0.36 Sq.mm armoured multistrand pair and overall shielded for serial communication	mtrs	1000
	Armoured CAT6 UTP Cable	mtrs	500
	Un-Armoured CAT6 UTP Cable	mtrs	200
	Armoured Fibre Optic Cable for SCADA 8 core, MM	mtrs	1000
	Armoured Fibre Optic Cable for SCADA 8 core, SM	mtrs	500
	Temperature & Humidity Transmitter and integration with gateway on RS485 Modbus RTU	nos.	2
	Protocol analyzer	Set	1
	Conduit		
	Multifunction Meter		
5	Multifunction Meter : For all 110KV Bays and Bus PTs Accuracy Class: 0.2S/0.5S Auxiliary Supplies: 90V-260 V AC or DC (Selectable)	nos	2
	GPS Receiver		
6	Redundant GPS Receiver with antenna, Surge protector and cables. Mounting Arrangement : Redundant 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 <i>Refer Technical specification for more details</i>	Set	1
	Training		
7	Training: (Sub-Station Automation & 3rd party items) 10 Engineers x 3 man-days (30 mandays) at Vendor's work	Set	1
	Mandatory Spares		
8	Supply of Mandatory Spares as per the specification (Refer Table-3 of the B2-3E Automation specification)	Lot	1

Services- Automation (For Powai 110KV and Remote Stations)						
Sr. No	Description				UOM	Qty
	Services					
10	Installation, Integration and Commissioning of Automation System - Powai & 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)				Lumps um	1
	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 110kV 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				Lumps um	1
					Total Basic Price	
COMMUNICATION SYSTEM						
Sr. No.	Material	Preferred make	UoM	Qty		
				Pow ai	Metro	Tot al
1	12 core Single mode armoured FO-cable	Finolex/Apar/Birla	metre	500	500	1000
2	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.	5	2	7
3	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.	5	2	7

4	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. For Underground FO cable with EHV	AFS/Commscope	Nos.	4	4	8
5	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.	8	8	16
6	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.	8	8	16
7	Simplex FO multimode patch cord LC-ST type - 10 metre	AFS/Commscope/Tyco/3M	Nos.	10	10	20
8	Simplex FO Single mode patch cord LCPC-SCPC type simplex - 10 meter	AFS/Commscope/Tyco/3M	Nos.	4	4	8
9	Simplex FO Single mode patch cord LCPC-LCPC type simplex - 2 meter	AFS/Commscope/Tyco/3M	Nos.	12	12	24
10	Simplex FO Single mode patch cord LCPC-LCPC type simplex - 10 meter	AFS/Commscope/Tyco/3M	Nos.	10	10	20
11	PVC flexible conduit of 0.75 inch inner diameter	Reputed make	Metre	200	200	400
12	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 Plinth base of 100mm height for mounting on 800*800mm frame 7. Ventilation Fan 8. Depth support channels – 3 pairs 9. Cable channel & 24 port I/O patch panel – 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. Services for installation, testing, commissioning and integration with the existing system/network of Tata Power	President/VAL RACK/WQIndia	Nos.	1	1	2
13	Substation firewall IDS & IPS in High availability	Checkpoint	Set	0	1	1
14	Media converter: Fiber to Ethernet / Single mode / LC type / 1310nm/ 40km and 10/100/1000Mbps ethernet with dual power supply 230VAC and 48-72VDC	CTC Union	Nos.	2	2	4
15	FXO Media convertor with 4 Analog voice ports - SM 80km, AC+DC power supply	CTC Union	Nos.	2	0	2
16	FXS Media convertor with 4 Analog voice ports - SM 80km, AC+DC power supply	CTC Union	Nos.	0	2	2
17	Telephone instruments analog phones with caller ID display along with accessories I/O box, RJ11 connector and rosette.	Alcatel, Beetel	No.s	0	4	4
18	Armoured CAT6 cable	Reputed Make	Metre	200	200	400

			rs			
19	Services for installation, laying, splicing, commissioning, testing and integration at local & remote ends		Lot	1	0	1
					Total Basic Price	
	METERING PANELS- TATA POWER ABT					
SUPPLY						
Sr. No	Description				UOM	Qty
A	PREWIRED METERING PANELS					
1	Supply of Secure make Apex 150 ABT type meters.(No internal CTR and PTR to be programmed inside Meter)				Nos	2
2	Design, Engineering, Manufacturing, Inspection, loading, Supply, Transport, Unloading at site, Storage, Erection, Testing, Commissioning of Prewired metering panels with Accessories				Nos	1
B	COMMUNICATION ACCESSORIES					
1	Supply and connection of Serial Device server (Make Moxa, Model – Nport 5232)				Nos	2
2	Supply, laying, termination and connection of Armoured CAT6 (Twisted pair cable) between meters to communication panel				mtrs	200
3	RJ45 I/O Boxes with I/Os (4 Port)				Nos	1
4	CAT6 Patch cables for connectivity between I/O and Meters / L3 switches (2 mts)				Nos	3
5	RJ 45 Connectors				Nos	4
6	Media Converters (Optical to Ethernet) (with 1310nm/1550nm) LC SFP type FOT (Make CTC Union, model FMC-2000MS)				Nos	3
SERVICES						
1	Services for preparation of cable schedule and ICS, Installation, testing, configuration of ABT Meters and final commissioning of all material mentioned under supply scope.				LS	1
SPARES						
1	TTB				Nos	1
2	Secure Make Apex ABT Meter				Nos	1
METERING PANELS- STU						
SUPPLY						
Sr. No	Description				UOM	Qty
A	PREWIRED METERING PANELS					
1	Supply of L&T make ER300P STU - ABT type meters.				Nos	4
2	Design, Engineering, Manufacturing, Inspection, loading, Supply, Transport, Unloading at site, Storage, Erection, Testing, Commissioning of Prewired metering panels with Accessories				Nos	1
B	COMMUNICATION ACCESSORIES					
1	Supply of Network switch (L2 switch) 8 Port Cu with SFP module and SFP Single mode(Kyland Make: KIEN7009)				Nos	2
2	Supply of Data Concentrator Unit with sim interface (1 DCU for 24 meters)(Kalkitech Make: Sync 2000)				Nos	1
3	CAT 6 LAN cable (pre-crimped 7 feet)				Nos	10
4	Armoured CAT 6 LAN cable for Interpanel				mtrs	200
5	L3 switch for FO connectivity with minimum 12CU+ 4SFP slots with 80 km loaded 4 No.s SFP (As per specs)				Nos	1

6	Fiber Optic Cable 48 core Armoured Single mode with HDPE duct	mtrs	1000
7	Media Converters (Optical to Ethernet) (with 1310nm/1550nm) LC SFP type FOT Dual AC+DC powersupply	Nos	15
8	FOP Patch chords LC-PC-LC-PC (5 meters) Single mode	Nos	15
9	FOP Patch chords LC-PC-SC-PC (5 meters) Single mode	Nos	8
10	LIU 19 inch rack mountable LC-PC type single mode 48 core (AFS/Commscope/TE/Tyco make only)	Nos	1
11	LIU Din rail mounting 12 core Single mode LC-PC LIU	Nos	1
12	I/O Box with RJ45 I/O loaded 4 No.s in each box	No.s	5
13	RJ45 connectors	No.s	20
14	Cable dressing, laying, Splicing, interpanel CAT6 LAN cable cripming and routing	Lot	1
	SERVICES		
1	Services for Supervision during Erection, installation.	LS	1
	SPARES		
1	TTB	Nos	1
		Total Basic Price	

PAC and Metering System for Saki - AEML			
Protection System			
Sl. No.	Description	UOM	Qty
	SUPPLY:		
	Lines Description:- 220kV TPC Saki- AEML Aarey Line		
1	Completely prewired Conventional Simplex Protection Relay Panel comprising of all the Protection Schemes & accessories as per GTP Data sheet for 220kV TPC Saki-AEML Aarey Line at TPC Saki 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
	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 for 3 years subscription, 2 number of USB ports, 1 ethernet port, 1 HDMI port, 1 RJ45 port and 1 serial port along with standard laptop carrying back sack.	No	1
	SERVICES:		
Sl. No.	Description	UOM	Qty
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 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 ends.	lump sum	1

2	Services for Integration of 220kV 01 No Bay in Existing Busbar Protection Panel at TPC Saki	lump sum	1
			Total Basic Price
Substation Automation System for 220kV TPC Saki- AEML Aarey Additional Feed (TPC Saki End)			
Automation System			
Sl. No.	Description	UOM	Qty
	Bay Control Unit (BCU)		
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 Protocol Support: The Bay RTU should have capability to integrate with Existing Gateway with IEC61850 Protocol. 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 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)	Set	1
	GPS Receiver		
2	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 RTU cum Gateway Panel Power Supply: Redundant 48 V DC <i>Refer Technical specification for more details</i>	Set	1
	Communication Switches, Network and other Accessories for SAS		
	For all supplied items at 220kV Saki 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.	Set	1
3	Managed L3 Ethernet Switch with LIU at both the ends for Station level 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: 1 no. of Switch	No.	1
	Communication Cable: 4P X 0.36 Sq.mm armoured multistrand pair and overall shielded for serial communication	Mtr	305
	Armoured CAT6 UTP Cable	Mtr	305
	8 Core Armoured Multi-mode Fibre Optic Cable	Mtr	305
	PVC flexible conduit rodent proof design with steel wires embedded (300 Mtr)	Mtr	300
Services- Automation			
Sl. No.	Description	UOM	Qty
	Services		

4	Installation, Integration and Commissioning of supplied SAS at Tata Power Saki End : 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 and Integration with Gateway e) Preparation of ICS and Signal List f) Configuration and Testing of IED's, RTUs, Gateway g) Integration of existing BCU, Protection relays, IEDs, Condition monitoring system with Existing Gateway. h) Time Synchronization of Gateway, BCU,RTU, IEDs with GPS Receiver i) I/O testing, Pre- SAT testing of Hardware and Software functionality j) Integrated testing with Unified SCADA System k) 100% Integrated FAT of GIS,PAC at bidder's work & SAT for Hardware and Software l) Submission of as-built drawing in AutoCAD and PDF Format m) Warranty for Hardware & Software inclusive of patch management and software upgradation for the period of 5 Years	Lumpsum	1
	Services from M/S Hitachi for Configuration, Integration & Testing of 220kV BCU (1.1) & Numerical Relays on IEC61850 with existing Hitachi Gateway at 220kV Saki RSS.	Lumpsum	1
	Services of M/s Kalkitech for Configuration, Integration with both Local DRCA System of the respective Station & Centralised DRCA System at existing Tata Power Saki end.	Lumpsum	1
Total Basic Price			

Communication System

Sr. No.	Material	Preferred make	UoM	Quantity		
				TPC Saki	AEML Aarey	Total
A	SUPPLY					
A.1	12 core Multi mode armoured FO-cable	Finolex/Apar/Birla	metre	500	0	500
A.2	Fiber Termination Box Suitable to terminate 12-core Multi Mode underground Fiber optic cable 19" Rack Mounting with Connectors loaded with MM type pigtails LC type couplers and cassettes. Rodent Proof design.	AFS/Commscope	Nos.	2	0	2
A.3	Fiber Termination Box Suitable to terminate 12-core Multi Mode underground Fiber optic cable DIN RAIL Mounting with Connectors loaded with MM type pigtails LC type couplers and cassettes. Rodent Proof design.	AFS/Commscope/Preston	Nos.	2	0	2
A.5	Simplex FO Multi mode patch cord with one end LC-other end as per relay FO-port simplex -5 meter	AFS/Commscope/Tyco/3M	Nos.	6	0	6
A.6	Simplex FO Multi mode patch cord with one end LC-other end as per relay FO-port simplex -10 meter	AFS/Commscope/Tyco/3M	Nos.	6	0	6
A.8	Simplex FO Multi mode patch cord LCPC-LCPC type simplex - 10 meter	AFS/Commscope/Tyco/3M	Nos.	6	0	6
A.9	Simplex FO Multi mode patch cord LCPC-LCPC type simplex - 15 meter	AFS/Commscope/Tyco/3M	Nos.	6	0	6
A.10	Simplex FO Multi mode patch cord LCPC-LCPC type simplex - 5 meter	AFS/Commscope/Tyco/3M	Nos.	6	0	6
A.11	Simplex FO Multi mode patch cord LCPC-LCPC type simplex - 2 meter	AFS/Commscope/Tyco/3M	Nos.	6	0	6
A.12	PVC flexible conduit of 1 inch inner diameter	Reputed make	Meter	200	0	200

A.13	LC-LC type Coupler (Duplex)	Reputed make	Nos.	5	0	5
B	SERVICES					
B.1	"Installation, Testing and Commissioning of Communication System at TPC end" a) Design and Engineering b) Installation and commissioning of all supplied items c) Cable termination, continuity check of all supplied communication cables d) Preparation of ICS e) Integrated testing, trials and commissioning of communication systems at site. f) Submission of as-built drawing in AutoCAD and PDF Format		Lot	1	0	1
				Total Basic Price		

PAC system for Dharavi - Wadala			
Protection System			
Sr.No	Description	UOM	Qty
	SUPPLY:		
	Lines Description:- 110kV Dharavi-Wadala Metro Lines		
1	Completely prewired Conventional Simplex Protection Relay Panel comprising of all the Protection Schemes & accessories as per GTP Data sheet for 110kV Dharavi-Wadala Metro Lines at TPC Dharavi 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
	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 for 3 years subscription, 2 number of USB ports, 1 ethernet port, 1 HDMI port, 1 RJ45 port and 1 serial port along with standard laptop carrying backpack.	No	1
	SERVICES:		
Sr.No	Description	UOM	Qty
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 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 end.	lump sum	1
2	Services for Integration of 110kV 02 Nos of Bays in Existing REB670 Busbar Protection Panel at TPC Dharavi	lump sum	1
			Total Basic Price
Automation System			
Substation Automation System for 110kV Dharavi Metro Bays.			
Sr.No	Description	UOM	Qty
	Bay Control Unit(BCU)		

1	Bay RTUs with accessories for 110 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 KLTD4) for all Digital Outputs and power supplies. Mounting: To be installed in each 110 KV GIS LCP panel (Note :- DI and DO Quantity may subject to vary as per GIS Manufacturer Design. To be finalized during detailed Engineering)	Set	2
	Networking Accessories		
2	Managed L2 Ethernet Switches (DIN-Rail) for Numerical Relay, Monitoring devices, Aux Systems 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 1no. Power Supply: Redundant 48 V DC (DC-DC Converter and Diode Oring Unit to be considered) Mounting Arrangement: To be mounted in a Existing RTU cum Gateway Panel.	No.	1
	GPS Receiver		
3	GPS Receiver ,Clock with Time, Date and Frequency Display Unit with redundant antenna, Surge protector and cables Power Supply: Redundant 48 V DC Mounting Arrangement: To be mounted in a Existing RTU cum Gateway Panel. <i>Refer Technical specification for more details</i>	No.	1
	Communication Switches, Network and other Accessories for SAS		
4	For all supplied items at 110kV Dharavi 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.	Set	1
	Communication Cable: 4P X 0.46 Sq.mm armoured multistrand pair and overall shielded for serial communication	Mtr	305
	Armoured CAT6 UTP Cable	Mtr	1000
	Armoured Fibre Optic Cable for SCADA 8 core, Multimode	Mtr	305
	Services		
5	Installation, Integration and Commissioning of supplied SAS at Tata Power 110kV Dharavi End : 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 and Integration with Gateway e) Preparation of ICS and Signal List f) Configuration and Testing of IED's, RTUs, Gateway g) Integration of existing BCU, Protection relays, IEDs, Condition monitoring system with Existing Gateway. h) Time Synchronization of Gateway, BCU,RTU, IEDs with GPS Receiver i) I/O testing, Pre- SAT testing of Hardware and Software functionality j) Integrated testing with Unified SCADA System k) 100% Integrated FAT of GIS,PAC at bidder's work & SAT for Hardware and Software l) Submission of as-built drawing in AutoCAD and PDF Format m) warranty for Hardware & Software inclusive of patch management and software upgradation for the period of 5 Years	Lumpsu m	1

	Services from Hitachi for Configuration, Integration & Testing of 110kV BCUs & Numerical Relays with existing Gateway at 110kV Dharavi RSS.		Lumpsum	1
	Services of M/s Kalkitech for configuration, integration with both local DRCA System of the respective Station & Centralised DRCA System at existing Tata Power 110kV Dharavi end.		Lumpsum	1
			Total Basic Price	
Communication System				
Sr. No.	Material	Preferred make	UoM	Qty
				Dharavi
A	SUPPLY			
A.1	12 core Single mode armoured FO-cable	Finolex/Apar/Birla	metre	500
A.2	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
A.3	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
A.4	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. For Underground FO cable with EHV	AFS/Commscope	Nos.	4
A.5	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.	8
A.6	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.	8
A.8	Simplex FO Single mode patch cord LCPC-LCPC type simplex - 10 meter	AFS/Commscope/Tyco/3M	Nos.	4
A.9	Simplex FO Single mode patch cord LCPC-LCPC type simplex - 2 meter	AFS/Commscope/Tyco/3M	Nos.	12
A.10	Simplex FO Single mode patch cord LCPC-LCPC type simplex - 10 meter	AFS/Commscope/Tyco/3M	Nos.	10
A.11	Simplex FO Single mode patch cord LCPC-STPC type simplex - 10 meter	AFS/Commscope/Tyco/3M	Nos.	10
A.12	PVC flexible conduit of 1 inch outer diameter	Reputed make	Meter	200

A13	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 Plinth base of 100mm height for mounting on 800*800mm frame 7. Ventilation Fan 8. Depth support channels – 3 pairs 9. Cable channel & 24 port I/O patch panel – 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. Services for installation, testing, commissioning and integration with the existing system/network of Tata Power	President/VALRACK/WQI ndia	Nos.	1
A.14	Media converter: Fiber to Ethernet / Single mode / LC type / 1310nm/ 40km and 10/100/1000Mbps ethernet with dual power supply 230VAC and 48-72VDC	CTC Union	Nos.	2
A.15	FXO Media convertor with 4 Analog voice ports - SM 80km, AC+DC power supply	CTC Union	Nos.	2
A.16	FXS Media convertor with 4 Analog voice ports - SM 80km, AC+DC power supply	CTC Union	Nos.	2
A.17	Telephone instruments analog phones with caller ID display along with accessories I/O box, RJ11 connector and rosette.	Alcatel, Beetel	No.s	4
A.18	Armoured CAT6 cable	Reputed Make	Meters	200
A.19	LC-type 10dB Attenuator	Reputed make	Nos.	10
A.20	LC-LC type Coupler (Duplex)	Reputed make	Nos.	5
A.21	96 core Single mode armored FO cable with HDPE duct (40/33mm)	Finolex/Apar/Birla	metre	1000
B	SERVICES			
B.1	"Installation, Testing and Commissioning of Communication System at local and remote ends" a) Design and Engineering b) Installation and commissioning of all supplied items c) Cable termination, continuity check of all supplied communication cables d) Preparation of ICS e) Integrated testing, trials and commissioning of communication systems at site. f) Submission of as-built drawing in AutoCAD and PDF Format		Lot	1
Total Basic Price				

Protection & Automation System for Davdi RSS			
Protection System			
Sr.No	Description	UOM	Qty
	SUPPLY:		
	Lines Description:- 110kV Transfer Breaker Bay at Davdi		

1	Completely prewired Conventional Simplex Protection Relay Panel comprising of all the Protection Schemes & accessories as per GTP Data sheet for 110kV Transfer Breaker Bay at TPC Davdi 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
	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 for 3 years subscription, 2 number of USB ports, 1 ethernet port, 1 HDMI port, 1 RJ45 port and 1 serial port along with standard laptop carrying backpack.	No	1
	SERVICES:		
Sr.No	Description	UOM	Qty
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 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 end.	lump sum	1
2	Services for Augmentation and Wiring (Transfer Bay CT In/out, Trip Transfer Schemes etc) and preparation of ICS for the existing 04 Nos of Bays.	lump sum	1
3	Services for Integration of 110kV 01 No Bay in Existing Busbar Protection Panel at TPC Davdi	lump sum	1
		Total Basic Price	
Automation System			
Substation Automation System for 110kV Transfer Breaker and Bay Addition at Davdi.			
Sr.No	Description	UOM	Qty
	Communication Switches, Network and other Accessories for SAS		
1	For all supplied items at 110kV Davdi: 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.	Set	1
	Armoured Fibre Optic Cable for SCADA 8 core, Multimode	Mtr	305
	Networking Accessories		
2	Managed L2 Ethernet Switches for Numerical Relay, Monitoring devices, Aux Systems integration with Gateway Qty: Total 24 Port with 100/1000 MBPS in each1Switch. 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 Switch shall be 1no. Power Supply: Redundant 48 V DC	No.	1
	Services		

3	Installation, Integration and Commissioning of supplied SAS at Tata Power 110kV Davdi End : 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 and Integration with Gateway e) Preparation of ICS and Signal List f) Configuration and Testing of IED's, RTUs, Gateway g) Integration of existing BCU, Protection relays, IEDs, Condition monitoring system with Existing Gateway. h) Time Synchronization of Gateway, BCU, RTU, IEDs with GPS Receiver i) I/O testing, Pre- SAT testing of Hardware and Software functionality j) Integrated testing with Unified SCADA System k) 100% Integrated FAT of GIS, PAC at bidder's work & SAT for Hardware and Software l) Submission of as-built drawing in AutoCAD and PDF Format m) warranty for Hardware & Software inclusive of patch management and software upgradation for the period of 5 Years	Lumpsum	1
	Services of OEM for Configuration, Integration & Testing of 110kV Relays with existing Gateway at 110kV Davdi RSS	Lumpsum	1

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 with Authorized Person, and only through Tata Power E-Tender System.
