

02nd April 2025

NOTICE INVITING TENDER (NIT)

The Tata Power Company Limited Invites Tenders through E-Tender Two-Part bidding process from interested bidders (with manufacturing / assembling facilities in India) for the following package required for its Transmission Divisions in Mumbai: -

A. Summary of the tendered package:

For the following packages contact person shall be Mr. Naman Patel (naman.patel@tatapower.com) & Mr. Vivek Mittal (vivek.mittal@tatapower.com)

Sr No.	Description	Tender Reference no.	Bid Guarantee Fee / EMD (Rs.)	Tender Fee (Rs.)
1.	Supply and Services for 33KV GIS along with associated equipment at Parel, Mahalaxmi, Borivali, Versova and Mankhurd Receiving Station in Mumbai	CC26NP001	15,00,000/-	2000/-

For additional technical details and Pre-Qualification criteria for the subject works please refer **Section C** below.

B. Guidelines for Participating:

Interested bidders having executed similar projects can participate by submitting the following up to **1500 hrs. Friday 11th April 2025**: -

1. Non-Refundable Tender Fee, as indicated in table above, in the form of Direct deposit in the following bank account and submit the receipt along with a covering letter clearly indicating the Tender Reference number.

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. Bidders to also submit duly signed and stamped letter indicating name of authorized person, contact number and e-mail id (mandatory) on Bidder's letterhead. It is mandatory to mention Tender Reference no. in the said letter.

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

It may be please noted that all future correspondence will be strictly done only with **Interested Bidders** who have done the above steps in time with Authorized Person only through Tata Power E-Tender System.

Earnest Money Deposit (EMD) of **INR 15.00 Lakhs** is not to be submitted now and is required at a later stage along with tender submission in the form of Bank Guarantee.

Section C: Pre-Qualification requirement and Bill of Quantity: (Please refer the following pages for details).

Bidders Prequalifying Requirements for MV GIS			
S No	Parameter	Tata Power Requirement	Documents To be submitted by Vendor to ascertain meeting of Pre-qualification requirement
1	2	3	4
1	Infrastructure	Bidder must be an OEM of MV GIS (including Protection & Automation) OR must have sourced MV GIS MV GIS (including Protection & Automation) with 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 and Experience	<p>Bidder shall have supplied 300 nos of 33kV GIS bays in last 5 years. Out of this 50 quantity of 33kV GIS panels shall be in satisfactory service for last 2 years.</p> <p>"In case the bidder has a previous association with Tata Power for similar products and services, the performance feedback for that bidder by Tata Power shall only be considered irrespective of performance certificates issued by any third organization. Technical performance, delivery timelines, service and support records of past executed projects in Tata Power will be considered for technical evaluation of bidder."</p> <p>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.</p>	<p>Supply List & Performance Certificates from the utilities / clients</p> <p>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.</p>
3	Type Test	<p>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 non disclosure agreement.</p> <p>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).</p> <p>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 despatch of the equipment / material.</p>	<p>Type Test Report.</p> <p>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)</p> <p>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)</p>
4	Commercial Capability	Average Annual turnover of the bidder for last three years shall not be less than Rs 60 Crs.	Copy of audited Balance Sheet and P&L Account to be submitted in this regard.
5	Services Experience	In case the package involves installation & commissioning of the equipment / material, then the bidder shall have installed and commissioned 60 nos Bays, of MV GIS during last 5 years, and 30 Nos MV GIS bays shall be in satisfactory commercial operation for at least last 3 years as on the date of bid submission.	<p>Services List / Performance Certificates from the utilities / clients.</p> <p>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.</p>

BOQ for MV GIS (OPEARTING AT 33kV)

Item	Description	Rating	Unit	Quantity		
				PAREL	MAHALAXMI	VERSOVA
33kV GIS at PAREL, MAHALAXMI & VERSOVA						
A	33kV GIS System(operating at 33kV)					
	Design, engineering, manufacturing, assembly, testing at works, packaging, transport, delivery, unloading and shifting from place of storage to erection site, erection, site testing and commissioning of 33kV GIS along with prewired bay mounted LV panel including BCPU, MFM (including independent for Bus PTs), Aux relays, RCP panels, etc. as per specification for following bays:		Set			
A1	Incomer	2500 A	Nos.	2	1	1
A2	Tie Breaker	2500 A	Nos.	1	1	1
A3	Tie Isolator	2500 A	Nos.	1	1	0
A4	Outgoing	1250 A	Nos.	6	5	3
A6	Bus PT (1 set include 3 nos.)		set	4	2	2
A7	Surge arrestor (1 set = 3 nos.)		set	2	1	1
A8	33 kV Dummy Panels - Optional Price to be quoted. Actual requirement & billing will be done based on site final layout considering price mentioned in this line item		Nos.	2	1	1
Miscellaneous Items						
A9	Dummy plugs for Incomer terminals PAREL: (For Inner Cone - (1 Set = 3 phase dummy plug) means Total = 8 sets) (For Outer Cone - (1 Set = 3 phase dummy plug) means Total = 4 sets) MAHALAXMI: (For Inner Cone - (1 Set = 3 phase dummy plug) means Total = 4 sets) (For Outer Cone - (1 Set = 3 phase dummy plug) means Total = 2 sets) VERSOVA: (For Inner Cone - (1 Set = 3 phase dummy plug) means Total = 4 sets) (For Outer Cone - (1 Set = 3 phase dummy plug) means Total = 2 sets)		Lot	1	1	1
A10	Dummy plugs for Tie breaker terminals PAREL: (For Inner Cone - (1 Set = 3 phase dummy plug) means Total = 4 sets) (For Outer Cone - (1 Set = 3 phase dummy plug) means Total = 2 sets) MAHALAXMI: (For Inner Cone - (1 Set = 3 phase dummy plug) means Total = 4 sets) (For Outer Cone - (1 Set = 3 phase dummy plug) means Total = 2 sets) VERSOVA(for existing I/C-1): (For Inner Cone - (1 Set = 3 phase dummy plug) means Total = 4 sets) (For Outer Cone - (1 Set = 3 phase dummy plug) means Total = 2 sets)		Lot	1	1	1
A11	Dummy plugs for Tie isolator terminals PAREL: (For Inner Cone - (1 Set = 3 phase dummy plug) means Total = 4 sets) (For Outer Cone - (1 Set = 3 phase dummy plug) means Total = 2 sets) MAHALAXMI: (For Inner Cone - (1 Set = 3 phase dummy plug) means Total = 4 sets) (For Outer Cone - (1 Set = 3 phase dummy plug) means Total = 2 sets)		Lot	1	1	1
A12	Dummy plugs for out going feeder terminals PAREL: (For Inner Cone - (1 Set = 3 phase dummy plug) means Total = 12 sets) (For Outer Cone - (1 Set = 3 phase dummy plug) means Total = 6 sets) MAHALAXMI: (For Inner Cone - (1 Set = 3 phase dummy plug) means Total = 10 sets) (For Outer Cone - (1 Set = 3 phase dummy plug) means Total = 5 sets) VERSOVA: (For Inner Cone - (1 Set = 3 phase dummy plug) means Total = 6 sets) (For Outer Cone - (1 Set = 3 phase dummy plug) means Total = 3 sets)		Lot	1	1	1
A13	Voltage plug (1 set = 3 phase)		Set	1	1	1

A14	Current plug (1 set = 3 phase)		Set	2	2	2
A15	Spares for 33 kV GIS: As per section-B table		Lot	1	1	1
A16	GIS Cable terminations- (1 set = 3 phase) 1Cx 630 sqmm XLPE Copper cable - For I/C		Set	8	4	4
A17	GIS Cable terminations- (1 set = 3 phase) 1Cx 630 sqmm cable - Tie breaker		Set	4	4	4
A18	GIS Cable terminations- (1 set = 3 phase) 1Cx 630 sqmm cable - Tie isolator		Set	4	4	0
A19	GIS Cable terminations- (1 set = 3 phase) 1Cx 400 sqmm XLPE Aluminum cable - Outgoing feeders		Set	12	10	6
A20	Separate panel with control TNC switches mounted for breaker and isolator close open along with 1. breaker status indicating lamps 2. SLD mimic to be shown with above control switches		Lot	2	1	1
B	Automation System					
B 1.0	33kV GIS Sub-Station Automation Design, Engineering, Supply, Supervision, Erection, Integrated Testing & Commissioning (Lump sum) work and contract of 33kV Substation Automation System. Refer all of scope of work and specific requirements given in SAS Specification Sub-Station Automation System). SAS Vendor shall indicate or flag additional requirement if any, before bidding only and no cost variation will be allowed after award of contract. Vendor to co-ordinate with peer switchgear team, sub-vendors etc., and provide the complete integrated SAS solution. Bidder shall refer the RFP & technical specification for more details.					
B 1.1	Pre-wired Redundant Gateway (RTU based Hardwire Only) Power Supply: Redundant 48 V DC ,MCBs, Mounting: To be supplied with Pre-wired panels. 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 Redundant Managed L3 Ethernet Switch to be mounted in Gateway panel Communication Ports: 24 PORT L3 W/100/1000 MBPS, 8 FO-MM, SFP ports & 16 Copper Ports. Power Supply: Redundant 48 V DC along with MCB's 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	1	0
B 1.2	Pre-wired Miscellaneous RTU Panel I/O Requirement: with 160DI, 80 DO, 32 AI with Auxiliary relay for each Digital Output Power Supply: Redundant 48 V DC. Consider 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 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 (CMDT4U) for all Digital Outputs and power supplies. Omron/OEN Relays to be considered as Interfacing Relay between DO Card and TBs for all DOs. 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	0	0
B 1.3	GPS Receiver GPS Receiver Clock with Time, Date and Frequency Display Unit with dual antenna, Surge protector and 50 meter antenna cable, 4 NTP/SNTP ports. Ports should compulsory support PRP. Mounting Arrangement : GPS Receiver to be mounted in Gateway Panel. Remote display Time, Date and Frequency Display Unit on a wall in C/R or R/R Power Supply: Redundant 48 V DC		Set	1	1	0
B 1.5	Networking Accessories Networking accessories for integration of BCPUs, Gateway, Condition monitoring devices : All required networking accessories like LIU, 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	1	1

B 1.6	<p>Managed L2 Ethernet Switch and LIUs for 33 kV BCPU & other IEDs communication and integration with Gateway Mounting Arrangement: DIN Rail/Rackmounted in Switchgear based on feasibility To be mounted in Dummy Panel / Switchgear/ Separate Network Panel (Adjacent to the switchgear) along with cable termination accessories. (Bidder shall refer the specification for more details) Qty: Minimum 2 Nos. of Switches with FO & Copper ports (20 FO and 4 Copper)for each bus-section and as per distribution of GIS panels and shall be based on Bidder's offered solution. Each Switch shall have 20% spare FO and Cu ports. (Bidder to consider quantity of L2 Switches / 1 Set / Station based on No. of Bus Sections and GIS Panel Layout of the respective station) 1 Set = 2 nos of Ethernet Switch / 2 No. of LIU (Note :- In case Dummy Panel is not available. Set of DIN Rail Mounted Switch to be considered. For 3 Bay, 1 Set of DIN Rail Mounted Switch and LIU to be considered. Mentioned quantity is with assumption Dummy Panel is available and Rack Mounted Switches of 24 Ports will be supplied)</p>		Set	2	1	1
B 1.7	Redundant Managed L3 Ethernet Switch with Communication Ports: 24 PORT L3 W/100/1000 MBPS, 8 FO-MM, SFP ports & 16 Copper Ports. Power Supply: Redundant 48 V DC along with MCB's		Set	0	0	1
B 1.8	<p>Configuration Laptop Configuration Laptop with Hardware: Laptop with latest processor, 1 TB HDD, 8 GB RAM, DVD RW, 4 USB Ports, 1 ethernet port, 1 HDMI port, 15" Display with 1 no. serial to USB converter. Software: Microsoft Windows compatible with latest version of configuration software, Microsoft Office License pack, Antivirus Quick heal Total Security with three year</p>		nos	1	1	0
B 1.9	Unarmoured CAT6 UTP Cable (1 Lot = 300 metres)		Lot	1	1	1
B 1.10	Armoured CAT6 UTP Cable (1 Lot = 500 metres)		Lot	1	1	1
B 1.11	4P X 0.36 Sq. mm armoured multistrand pair, overall shielded, for integration of MFM and other IEDs (1Lot =500 mtrs)		Lot	2	1	1
B 1.12	4P X 0.36 Sq. mm unarmoured multistrand pair, overall shielded, for integration of MFM and other IEDs (1 Lot = 250 metres)		Lot	1	1	1
B 1.13	8 Core Armoured Multi-mode Fibre Optic Cable (1 Lot = 2000 metres)		Lot	1	1	1
B 1.14	PVC flexible conduit rodent proof design with steel wires embedded (200 Mtr)		Set	1	1	1
B 1.15	<p>Satellite Workstation for SCADA Power Supply : 230V AC To be supplied with operator workstation with hardware viz dual headed LED monitor,Optical Keyboard & Mouse and latest windows OS, Software's with Antivirus Trend Micro (Apex one) with three-year subscription & Standard MS office latest version (Refer Automation specification for More details)</p>		nos	1	0	0
B 1.16	Temperature & Humidity Transmitter and integration with gateway on RS485 Modbus RTU		Nos	4	4	4
B 1.17	Automation mandatory Spares (As per the Spares list indicated in the SAS Specification)		Set	1	1	1
B 1.18	<p>Installation integration with existing SAS and Commissioning Services a) Design, Engineering, Installation, Testing and Commissioning of Sub-station Automation System as per SOW. b) Co-ordination with switchgear team & other sub vendors. c) Preparation of interconnecting cable schedule,Cable laying and termination, continuity check of all power, communication and field cables, d) Powering up of all supplied materials and Configuration of all supplied equipment e) Commissioning and integration of all supplied equipment as per the approved architecture f) All BCPUs, MFM looping and Condition Monitoring Units and Integration with New/Existing Gateway g)Integration of 3rd Party Devices such as Transformer Monitoring Devices, Chargers, UPS, Temp Humidity Sensors etc h) Testing and Integration of BCPUs with existing DRCA System, Firewall and Analysis system as per the approved architecture and testing up to Central DR System i) I/O testing, Pre- SAT testing, testing with Purchaser's Unified SCADA System j) Integrated FAT & SAT for Hardware and Software k) Final As built Document & Drawings Submission in AutoCAD & Pdf format. l) Warranty for Hardware & Software inclusive of patch management and software upgradation for the period of 5 Years</p>		LS	1	1	1
B 1.19	Services of M/s Kalkitech for configuration, integration with both local DRCA System of the respective station & Centralised DRCA system.		LS	1	1	1

B 1.20	Training: (Sub-Station Automation & 3rd party items) 10 Engineers x 3 man-days (30 mandays) at Vendor's work		LS	1

UFLS SYSTEM BILL OF QUANTITY

UFLS SYSTEM BILL OF QUANTITY				
SUPPLY:	Protection system			
Sr. No.	Description	Qty. Set/Nos.		
		Parel	Mahalaxmi	Versova
1	Completely pre-wired Simplex control Type-G Protection panel comprising of protection schemes and accessories as per specification along with IEDs, its networking accessories between IED to gateway, IED to DRCA system, relevent LIUs, switches, patch cords etc. for successful commissioning of underfrequency load shedding scheme.	3 sets	1 Set	NA
3	Proection Relay integration with SCADA & DRCA system at above mentioned stations: Ethernet Swtiches, Converters, Communciation Cables (FO & UTP) and Networking accessories like LIU, patch panel (for each Ethernet switch), Pre-fabricated Patch cords (Fibre optic, UTP) of suitable length, Conduits for all non-armoured cables, I/O boxes with Quad face plate, RJ45 connectors etc.	1 lot	1 lot	NA
	Spares			
1	IED of each model number/ order code/ MLFB shall be supplied as spares	1 lot	1 lot	NA
2	Auxilliary trip relay	1 each type	1 each type	NA
	Services			
1	Services for preparation of cable schedule and ICS, commissioning of protection, automation and communication system along with appropriate human resources, numerical relay testing kit for relay panel commissioning and integration of relays with SCADA, DRCA system to view disturbance record and parameterization from remote	LS	LS	NA

METERING SYSTEM BILL OF QUANTITY					
			Parel	Mahalaxmi	Versova
METERING PANELS					
SUPPLY					
Sr. No.	Description	Nos/set	Qty		
A	PREWIRED METERING PANELS				
1	Design, Engineering, Manufacturing, Inspection, loading, Supply, Transport, Unloading at site, Storage, Erection, Testing, Commissioning of Prewired metering panels	Nos	3	11	3
B	COMMUNICATION ACCESSORIES				
1	Supply and connection of Serial Device server (Make Moxa, Model – Nport 5232)	Nos	2	2	2
2	Supply, laying, termination and connection of Armoured CAT6 (Twisted pair cable) between meters to communication panel	mtrs	80	80	80
SERVICES					
1	Services for preparation of cable schedule and ICS, Installation, testing and commissioning of all material mentioned under supply scope		LS	LS	LS
SPARES					
1	TTB	Nos	1	1	1

BOQ for MV GIS (OPEARTING AT 22kV)

Item	Description	Rating	Unit	Quantity	
				MANKHURD	BORIVALI
33kV GIS at MANKHURD AND BORIVALI RSS					
A	33kV GIS System(operating at 22kV)				
	Design, engineering, manufacturing, assembly, testing at works, packaging, transport, delivery, unloading and shifting from place of storage to erection site, erection, site testing and commissioning of 33kV GIS along with prewired bay mounted LV panel including BCPMU, MFM (including independent for Bus PTs), Aux relays, RCP panels, etc. as per specification for following bays:		Set		
A1	Incomer	2500 A	Nos.	2	0
A2	Tie Breaker	2500 A	Nos.	1	1
A3	Tie Isolator	2500 A	Nos.	1	1
A4	Outgoing	1250 A	Nos.	13	4
A5	Station Transformer feeder	1250 A	Nos.	2	0
A6	Bus PT (1 set include 3 nos.)		set	4	2
A7	Surge arrestor (1 set = 3 nos.)		set	2	0
A8	33 kV Dummy Panels - Optional Price to be quoted. Actual requirement & billing will be done based on site final layout considering price mentioned in this line item		Nos.	3	1
	Miscellaneous Items				
A9	Dummy plugs for Incomer terminals Mankhurd: (For Inner Cone - (1 Set = 3 phase dummy plug) means Total = 8 sets) (For Outer Cone - (1 Set = 3 phase dummy plug) means Total = 4 sets)		Lot	1	1
A10	Dummy plugs for Tie breaker terminals Mankhurd: (For Inner Cone - (1 Set = 3 phase dummy plug) means Total = 4 sets) (For Outer Cone - (1 Set = 3 phase dummy plug) means Total = 2 sets) Borivali: (For Inner Cone - (1 Set = 3 phase dummy plug) means Total = 4 sets) (For Outer Cone - (1 Set = 3 phase dummy plug) means Total = 2 sets)		Lot	1	1
A11	Dummy plugs for Tie Isolator terminals Mankhurd: (For Inner Cone - (1 Set = 3 phase dummy plug) means Total = 4 sets) (For Outer Cone - (1 Set = 3 phase dummy plug) means Total = 2 sets) Borivali : (For Inner Cone - (1 Set = 3 phase dummy plug) means Total = 4 sets) (For Outer Cone - (1 Set = 3 phase dummy plug) means Total = 2 sets)		Lot	1	1
A12	Dummy plugs for out going feeder terminals Mankhurd: (For Inner Cone - (1 Set = 3 phase dummy plug) means Total = 26 sets) (For Outer Cone - (1 Set = 3 phase dummy plug) means Total = 13 sets) Borivali: (For Inner Cone - (1 Set = 3 phase dummy plug) means Total = 8 sets) (For Outer Cone - (1 Set = 3 phase dummy plug) means Total = 4 sets)		Lot	1	1
A13	Dummy plugs for station transformer feeder terminals Mankhurd (For Inner Cone - (1 Set = 3 phase dummy plug) means Total = 4 sets) (For Outer Cone - (1 Set = 3 phase dummy plug) means Total = 2 sets)		Lot	1	0
A14	Voltage plug (1 set = 3 phase)		Set	1	1
A15	Current plug (1 set = 3 phase)		Set	2	2
A16	Spares for 33 kV GIS: As per section-B table		Lot	1	1
A17	GIS Cable terminations- (1 set = 3 phase) 1Cx 630 sqmm XLPE Copper cable - For I/C		Set	8	0
A18	GIS Cable terminations- (1 set = 3 phase) 1Cx 630 sqmm cable - Tie breaker		Set	4	4
A19	GIS Cable terminations- (1 set = 3 phase) 1Cx 630 sqmm cable - Tie isolator		Set	4	4

A20	GIS Cable terminations- (1 set = 3 phase) 1Cx 400 sqmm XLPE Aluminum cable - Outgoing feeders		Set	26	8
A21	GIS Cable terminations- (1 set = 3 phase) 3Cx 400 sqmm cable - Station transformer		Set	4	0
A22	Separate panel with control TNC switches mounted for breaker and isolator close open along with 1. breaker & isolator status indicating lamps 2. SLD mimic to be shown with above control switches		Lot	2	1
B	Automation System				
B 1.0	33kV GIS Sub-Station Automation Design, Engineering, Supply, Supervision, Erection, Integrated Testing & Commissioning (Lump sum) work and contract of 33kV Substation Automation System. Refer all of scope of work and specific requirements given in SAS Specification Sub-Station Automation System). SAS Vendor shall indicate or flag additional requirement if any, before bidding only and no cost variation will be allowed after award of contract.Vendot to co-ordinate with peer switchgear team,sub-vendors etc.,and provide the complete integrated SAS solution. Bidder shall refer the RFP & technical specification for more details.				
B 1.1	Pre-wired Redundant Gateway (RTU based Hardwire Only) Power Supply: Redundant 48 V DC ,MCBs, Mounting: To be supplied with Pre-wired panels. 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 Redundant Managed L3 Ethernet Switch to be mounted in Gateway panel Communication Ports: 24 PORT L3 W/100/1000 MBPS, 8 FO-MM, SFP ports & 16 Copper Ports. Power Supply: Redundant 48 V DC along with MCB's 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	0
B 1.2	Pre-wired Miscellaneous RTU Panel I/O Requirement: with 160DI, 80 DO, 32 AI with Auxiliary relay for each Digital Output Power Supply: Redundant 48 V DC. Consider 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 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 (CMDT4U) for all Digital Outputs and power supplies. Omron/OEN Relays to be considered as Interfacing Relay between DO Card and TBs for all DOs. 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	0
B 1.3	GPS Receiver GPS Receiver Clock with Time, Date and Frequency Display Unit with dual antenna, Surge protector and 50 meter antenna cable, 4 NTP/SNTP ports. Ports should compulsory support PRP. Mounting Arrangement : GPS Receiver to be mounted in Gateway Panel. Remote display Time, Date and Frequency Display Unit on a wall in C/R or R/R Power Supply: Redundant 48 V DC		Set	1	-
B 1.4	Networking Accessories Networking accessories for integration of BCPUs, Gateway, Condition monitoring devices : All required networking accessories like LIU, 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	1

B 1.5	<p>Managed L2 Ethernet Switch and LIUs for 33 kV BCPUs & other IEDs communication and integration with Gateway Mounting Arrangement: DIN Rail/Rackmounted in Switchgear based on feasibility To be mounted in Dummy Panel / Switchgear/ Separate Network Panel (Adjacent to the switchgear) along with cable termination accessories. (Bidder shall refer the specification for more details) Qty: Minimum 2 Nos. of Switches with FO & Copper ports (20 FO and 4 Copper) for each bus-section and as per distribution of GIS panels and shall be based on Bidder's offered solution. Each Switch shall have 20% spare FO and Cu ports. (Bidder to consider quantity of L2 Switches / 1 Set / Station based on No. of Bus Sections and GIS Panel Layout of the respective station) 1 Set = 2 nos of Ethernet Switch / 2 No. of LIU (Note :- In case Dummy Panel is not available. Set of DIN Rail Mounted Switch to be considered. For 3 Bay, 1 Set of DIN Rail Mounted Switch and LIU to be considered. Mentioned quantity is with assumption Dummy Panel is available and Rack Mounted Switches of 24 Ports will be supplied)</p>		Set	2	1
B 1.6	<p>Redundant Managed L3 Ethernet Switch with Communication Ports: 24 PORT L3 W/100/1000 MBPS, 8 FO-MM, SFP ports & 16 Copper Ports. Power Supply: Redundant 48 V DC along with MCB's</p>		Set	0	1
B 1.7	<p>Configuration Laptop Configuration Laptop with Hardware: Laptop with latest processor, 1 TB HDD, 8 GB RAM, DVD RW, 4 USB Ports, 1 ethernet port, 1 HDMI port, 15" Display with 1 no. serial to USB converter. Software: Microsoft Windows compatible with latest version of configuration software, Microsoft Office License pack, Antivirus Quick heal Total Security with three-year subscription, Configuration & maintenance software tools, Diagnostic tools. Logic building Application of RTU, Gateway, Configuration Software and protocol analyzer</p>		nos	1	-
B 1.8	<p>Unarmoured CAT6 UTP Cable (1 Lot = 300 metres)</p>		Lot	1	1
B 1.9	<p>Armoured CAT6 UTP Cable (1 Lot = 500 metres)</p>		Lot	1	1
B 1.10	<p>4P X 0.36 Sq. mm armoured multistrand pair, overall shielded, for integration of MFM and other IEDs (1 Lot = 500 mtrs)</p>		Lot	2	1
B 1.11	<p>4P X 0.36 Sq. mm unarmoured multistrand pair, overall shielded, for integration of MFM and other IEDs (1 Lot = 250 metres)</p>		Lot	1	1
B 1.12	<p>8 Core Armoured Multi-mode Fibre Optic Cable (1 Lot = 2000 metres)</p>		Lot	1	1
B 1.13	<p>PVC flexible conduit rodent proof design with steel wires embedded (200 Mtr)</p>		Set	1	1
B 1.14	<p>Satellite Workstation for SCADA Power Supply : 230V AC To be supplied with operator workstation with hardware viz dual headed LED monitor, Optical Keyboard & Mouse and latest windows OS, Software's with Antivirus Trend Micro (Apex one) with three-year subscription & Standard MS office latest version (Refer Automation specification for More details)</p>		nos	1	0
B 1.15	<p>Temperature & Humidity Transmitter and integration with gateway on RS485 Modbus RTU</p>		Nos	4	4
B 1.16	<p>Automation mandatory Spares (As per the Spares list indicated in the SAS Specification)</p>		Set	1	1
B 1.17	<p>Installation integration with existing SAS and Commissioning Services a) Design, Engineering, Installation, Testing and Commissioning of Sub-station Automation System as per SOW. b) Co-ordination with switchgear team & other sub vendors. c) Preparation of interconnecting cable schedule, Cable laying and termination, continuity check of all power, communication and field cables, d) Powering up of all supplied materials and Configuration of all supplied equipment e) Commissioning and integration of all supplied equipment as per the approved architecture f) All BCPUs, MFM looping and Condition Monitoring Units and Integration with New/Existing Gateway g) Integration of 3rd Party Devices such as Transformer Monitoring Devices, Chargers, UPS, Temp Humidity Sensors etc h) Testing and Integration of BCPUs with existing DRCA System, Firewall and Analysis system as per the approved architecture and testing up to Central DR System i) I/O testing, Pre- SAT testing, testing with Purchaser's Unified SCADA System j) Integrated FAT & SAT for Hardware and Software k) Final As built Document & Drawings Submission in AutoCAD & Pdf format. l) Warranty for Hardware & Software inclusive of patch management and software upgradation for the period of 5 Years</p>		LS	1	1
B 1.18	<p>Services of M/s Kalkitech for configuration, integration with both local DRCA System of the respective station & Centralised DRCA system.</p>		LS	1	1

B 1.19	Training: (Sub-Station Automation & 3rd party items) 10 Engineers x 3 man-days (30 mandays) at Vendor's work		LS	1
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UFLS SYSTEM BILL OF QUANTITY

UFLS SYSTEM BILL OF QUANTITY			
SUPPLY:	Protection system		
Sr. No.	Description	Qty. Set/Nos.	
		Mankhurd	Borivali
1	Completely pre-wired Simplex control Type-G Protection panel comprising of protection schemes and accessories as per specification along with IEDs, its networking accessories between IED to gateway, IED to DRCA system, relevent LIUs, switches, patch cords etc. for successful commissioning of underfrequency load shedding scheme.	3 sets	1 Set
3	Proection Relay integration with SCADA & DRCA system at above mentioned stations: Ethernet Swtiches, Converters, Communciation Cables (FO & UTP) and Networking accessories like LIU, patch panel (for each Ethernet switch), Pre-fabricated Patch cords (Fibre optic, UTP) of suitable length, Conduits for all non-armoured cables, I/O boxes with Quad face plate, RJ45 connectors etc.	1 lot	1 lot
	Spares		
1	IED of each model number/ order code/ MLFB shall be supplied as spares	1 lot	1 lot
2	Auxilliary trip relay	1 each type	1 each type
	Services		
1	Services for preparation of cable schedule and ICS, commissioning of protection, automation and communication system along with appropriate human resources, numerical relay testing kit for relay panel commissioning and integration of relays with SCADA, DRCA system to view disturbance record and parameterization from remote	LS	LS

METERING SYSTEM BILL OF QUANTITY				
			Mankhurd	Borivali
METERING PANELS				
SUPPLY				
Sr. No.	Description	Nos/set	Qty	
A	PREWIRED METERING PANELS			
1	Design, Engineering, Manufacturing, Inspection, loading, Supply, Transport, Unloading at site, Storage, Erection, Testing, Commissioning of Prewired metering panels	Nos	3	11
B	COMMUNICATION ACCESSORIES			
1	Supply and connection of Serial Device server (Make Moxa, Model – Nport 5232)	Nos	2	2
2	Supply, laying, termination and connection of Armoured CAT6 (Twisted pair cable) between meters to communication panel	mtrs	80	80
SERVICES				
1	Services for preparation of cable schedule and ICS, Installation, testing and commissioning of all material mentioned under supply scope		LS	LS
SPARES				
1	TTB	Nos	1	1