

**ABSTRACT OF BILL OF QUANTITIES
REVAMP OF HT & LT ELECTRIFICATION SYSTEM**

Section	Description.	Supply +Installation Amount
1	ANNEXURE-A (HT-EXTERNAL BOQ)	
2	ANNEXURE-B (LT-EXTERNAL BOQ)	
3	ANNEXURE-C (DG BOQ)	
4	ANNEXURE-D(LIGHTNING PROTECTION)	
5	ANNEXURE-E(VTPN/DB)	
6	ANNEXURE-F(CIVIL WORKS RELATED TO THE ELECTRICAL SERVICES FOR BOTH HT AND LT ELECTRICAL SYSTEM.)	
SUB-TOTAL PROJECT COST:		
GST @_____ %:		
GRAND-TOTAL PROJECT COST:		



ANNEXURE-A
BILL OF QUANTITY
(11KV HT YARD, TRANSFORMERS, HT PANEL, HT-CABLINGS EARTHING SYSTEM)
REVAMP OF HT & LT ELECTRIFICATION SYSTEM

	DESCRIPTION	UNIT	QTY	UNIT RATE(Rs)		TOTAL RATE(Rs)	
				SUPPLY	ERECTION	SUPPLY	ERECTION
				(Rs)	(Rs)	(Rs)	(Rs)
1.0	11KV DOUBLE POLE STRUCTURE						
1.1	Supply, Erection, Testing and Commissioning of Single pole structure consists of the following: *175 x 85mm ISMB section 9 Mtrs Height with 100 x 50 ISMC cross channels. *11KV, 630A GOS, lightning arrester, HG fuses, jumpers, ACSR conductor, clamps and connectors, insulators with all necessary accessories. * Galvanised Nuts and bolts. * Earth pits for lightning arrester with necessary 25x3mm copper strip which connect the lightning arrestors to earth pits. *Earth pit for structure body earthing with necessary 25x3mm copper strip which connects DP structure to earth pits. * This earth pits shall be of 2.5 meters long 50mm dia perforated GI pipe B class complete as per IS 3043 of 1986 or latest revision which includes brick work, plastering, filling alternate layers of salt, coke and sand including funnel and CI cover (as per drawing) including cost and conveyance of all materials, labour charges etc., complete for finished item of work. As per State Electricity board standards complete with all accessories and including necessary civil works.	LOT	1				
	NOTE: SUBJECT TO COORDINATION AND REQUIREMENT AS PER TSSPDCL						
2.0	CT PT METERING INSTALLATION						
2.1	Erection of (CT / PT With TVM)Metering supplied by Electricity Board with all necessary wiring for the CT / PT, Sealing in-cordination with Electricity Board Authorities as per the requirement. This includes construction of the pedestal as directed by Electricity Board Authorities. This includes the co-ordination with Electricity Board-MRT officials to successfully test and commission the metering.	LOT	1				



ANNEXURE-A
BILL OF QUANTITY
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	DESCRIPTION	UNIT	QTY	UNIT RATE(Rs)		TOTAL RATE(Rs)	
				SUPPLY	ERECTION	SUPPLY	ERECTION
				(Rs)	(Rs)	(Rs)	(Rs)
3.0	11KV HT VCB OUTDOOR PANEL (KIOSK TYPE)						
	CONSTRUCTION - The Switch Gear Panel shall be compartmentalised Designed with cubicles fabricated out of High Quality Sheet Steel and the panels shall be dust and vermin proof and with degree of protection IP 55 as per IS 2147. The panels shall be designed having the Following Segregations separately.						
	a) Breaker compartment						
	b) Busbar compartment						
	c) Cable and CT compartment						
	d) Instrument and Relay Compartment						
	The Cubical shall be designed for insertion of circuit breaker, which shall be horizontal draw out/horizontal isolation type. Automatic operating type shutters to be provided to ensure no direct access to the live parts.						
	The clearances between phase to phase and phase to earth shall be provided in accordance with the relevant standards. The bus bars shall be supported by bus support insulators placed at regular intervals.						
	The panels shall be powder coated with epoxy base paint to give an aesthetically pleasing						
	Medium High Voltage Vacuum Circuit Breaker should consist of manual and motor operated spring charged mechanism, mounted on withdrawable truck with three vacuum interrupters. The operating mechanism shall be simple and robust in design.						
	The mechanism shall be trip free and suitable for rapid reclosing. The vacuum interpters shall be capable of withstanding for switching capacitive currents and also magnetising currents. The closing operation shall be followed by motor operated spring charge mechanism with electrical anti pumping feature.						
	SAFETY FEATURES:						
	a) Interlocks to be provided in such away that breaker closing to be prevented in intermediate position between service, test and isolated positions.						
	b) Mechanical interlock to be provided in order to prevent truck racking in and out when breaker is in closed position.						
	c) Breaker shall be inserted only when control plug and socket is in position.						
	d) Control plug and socket shall be removed only in isolated position.						
	e) Earthing through a draw-out earthing truck with solid links on the bus bar and feeder side to be provided.						
	f) Integral earthing switch, slow closing type or with making capacity to be provided.						
	g) Through - Breaker earthing						



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				SUPPLY	ERECTION	SUPPLY	ERECTION
				(Rs)	(Rs)	(Rs)	(Rs)
1	11 KV, HT VCB ISOLATOR (OUTDOOR) PANEL-(ICOG)-1No						
	Supply, erection, testing, commissioning of 11KV, 800A, 25.1KA Horizontal Draw out type VCB Manually and Motor Operated spring arging mechanism , With 230V AC Supply for Motor,110V DC for shunt Trip coil and Closing Coil. Axu. Contact 4No+4Nc, Mechanical ON and OFF indicator and Push button,Mechanical operation counters with lightning surge arrester.The Each VCB Shall be Provided with DC Power Pack.						
	POTENTIAL TRANSFORMER: (1No)						
	Cast resin PT with HT and LT HRC Fuses, Ratio:11KV/√3,110V/√3,110V/√3+ Three Phase, Burden 100 VA, Acc. CL-1						
	CURRENT TRANSFORMER: (3 No's)						
	Ratio 100/1A, Core 1 : 20VA, CL - 0.2 for Metering, Core 2 : 20VA, CL - 5P 10 for Protection.						
	METERING: (1set)						
	96Sq.mm Digital Ammeter with selector switch Digital type .						
	96 Sq.mm Digital Voltmeter with selector switch Digital voltmeter .						
	PROTECTION RELAYS:						
	1) TRIPLE POLE NON DIRECTIONAL IDMT - 2 O/C + 1 E/F Relay of EE make Equivalent to CDG 31 or Digital Numerical relay and shall be compatable for BMS with communication port.-1 No.	LOT	1				
	2) Master Trip Relay - (1No)						
	3) Trip Circuit Super Vision Relay - (1No)						
	INDICATION LAMPS:						
	1) ON, OFF and Trip Indication Lamps for RYB. - (1 set)						
	2) Trip Circuit Healthy lamp. - (1 set)						
	3) Spring Charging lamp. - (1 set)						
	4) Auto trip. - (1 set)						
	5) LED Type R-Y-B Phase Indication Lamps. - (1 set)						
	CONTROL SWITCHES/PUSH BUTTON						
	a) T-N-C Switch (Breaker Control Switch) - (1 set)						
	b) Trip circuit Healthy Push Button - (1 set)						
	Control Wiring with appropriate colors - (1 set)						
	230V AC/110V DC Power Pack - 1 No						
	Alarm scheme with hooter, Accept and Reset Button with 8Way Annunciation window. - (1 set)						
	Bus Bar with 630Amps Aluminium (Electrical Grade). - (1 set)						
	Note: The CTS/PTS specified are Cast Resin and Testing / Approval are as per ERDA Test Lab.						



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	DESCRIPTION	UNIT	QTY	UNIT RATE(Rs)		TOTAL RATE(Rs)	
				SUPPLY	ERECTION	SUPPLY	ERECTION
				(Rs)	(Rs)	(Rs)	(Rs)
4.0	11KV HT VCB PANEL-(INDOOR TYPE)						
	CONSTRUCTION - The Switch Gear Panel shall be compartmentalised Designed with cubicles fabricated out of High Quality Sheet Steel and the panels shall be dust and vermin proof and with degree of protection IP 55 as per IS 2147. The panels shall be designed having the Following Segregations separately.						
	a) Breaker compartment						
	b) Busbar compartment						
	c) Cable and CT compartment						
	d) Instrument and Relay Compartment						
	The Cubical shall be designed for insertion of circuit breaker, which shall be horizontal draw out/horizontal isolation type. Automatic operating type shutters to be provided to ensure no direct access to the live parts.						
	The clearances between phase to phase and phase to earth shall be provided in accordance with the relevant standards. The bus bars shall be supported by bus support insulators placed at regular intervals.						
	The panels shall be powder coated with epoxy base paint to give an aesthetically pleasing						
	Medium High Voltage Vacuum Circuit Breaker should consist of manual and motor operated spring charged mechanism, mounted on withdrawable truck with three vacuum interrupters. The operating mechanism shall be simple and robust in design.						
	The mechanism shall be trip free and suitable for rapid reclosing. The vacuum interpters shall be capable of withstanding for switching capacitive currents and also magnetising currents. The closing operation shall be followed by motor operated spring charge mechanism with electrical anti pumping feature.						
	SAFETY FEATURES:						
	a) Interlocks to be provided in such away that breaker closing to be prevented in intermediate position between service, test and isolated positions.						
	b) Mechanical interlock to be provided in order to prevent truck racking in and out when breaker is in closed possition.						
	c) Breaker shall be inserted only when control plug and socket is in position.						
	d) Control plug and socket shall be removed only in isolated position.						
	e) Earthing through a draw-out earthing truck with solid links on the bus bar and feeder side to be provided.						
	f) Integral earthing switch, slow closing type or with making capacity to be provided.						
	g) Through - Breaker earthing						



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	DESCRIPTION	UNIT	QTY	UNIT RATE(Rs)		TOTAL RATE(Rs)	
				SUPPLY	ERECTION	SUPPLY	ERECTION
				(Rs)	(Rs)	(Rs)	(Rs)
A	INCOMING - 1: (1 No)						
	Supply, erection, testing, commissioning of 11KV, 800A, 25.1KA Horizontal Draw out type VCB Manually and Motor Operated spring arging mechanism , With 230V AC Supply for Motor,110V DC for shunt Trip coil and Closing Coil. Axu. Contact 4No+4Nc, Mechanical ON and OFF indicator and Push button,Mechanical operation counters with lightning surge arrester.The Each VCB Shall be Provided with DC Power Pack.						
	POTENTIAL TRANSFORMER: (1No)						
	Cast resin PT with HT and LT HRC Fuses, Ratio:11KV/√3,110V/√3,110V/√3+ Three Phase, Burden 100 VA, Acc. CL-0.5						
	CURRENT TRANSFORMER: (3 No's)						
	Ratio 100/1A, Core 1 : 15VA, CL - 0.5 for Metering, Core 2 : 15VA, CL - 5P 10 for Protection.						
	METERING: (1set)						
	96Sq.mm Digital Ammeter with selector switch Digital type .						
	96 Sq.mm Digital Voltmeter with selector switch Digital voltmeter .						
	PROTECTION RELAYS:						
	1) TRIPLE POLE NON DIRECTIONAL IDMT - 2 O/C + 1 E/F Relay of EE make Equivalent to CDG 31 or Digital Numerical relay and shall be compatable for BMS with communication port.-1 No.						
	2) Master Trip Relay - (1No)						
	3) Trip Circuit Super Vision Relay - (1No)						
	INDICATION LAMPS:						
	1) ON, OFF and Trip Indication Lamps for RYB. - (1 set)						
	2) Trip Circuit Healthy lamp. - (1 set)						
	3) Spring Charging lamp. - (1 set)						
	4) Auto trip. - (1 set)						
	5) LED Type R-Y-B Phase Indication Lamps. - (1 set)						
	CONTROL SWITCHES/PUSH BUTTON						
	a) T-N-C Switch (Breaker Control Switch) - (1 set)						
	b) Trip circuit Healthy Push Button - (1 set)						
	Control Wiring with appropriate colors - (1 set)						
	230V AC/110V DC Power Pack - 1 No						
	Alarm scheme with hooter, Accept and Reset Button with 8Way Annunciation window. - (1 set)						
	Bus Bar with 630Amps Aluminium (Electrical Grade). - (1 set)						
	Note: The CTS/PTS specified are Cast Resin and Testing / Approval are as per ERDA Test Lab.						



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				SUPPLY (Rs)	ERECTION (Rs)	SUPPLY (Rs)	ERECTION (Rs)
B	OUTGOING FEEDERS (2 No)						
	Supply, erection, testing, commissioning of 11KV, 630A, 25.1KA Horizontal Draw out type VCB Manually and Motor Operated spring arging mechanism , With 230V AC Supply for Motor,110V DC for shunt Trip coil and Closing Coil. Axu. Contact 4No+4Nc, Mechanical ON and OFF indicator and Push button,Mechanical operation counters with lightning surge arrester.The Each VCB Shall be Provided with DC Power Pack.						
	POTENTIAL TRANSFORMER: (1No)						
	Cast resin PT with HT and LT HRC Fuses, Ratio:11KV/√3,110V/√3,110V/√3+ Three Phase, Burden 50 VA, Acc. CL-0.5						
	CURRENT TRANSFORMER: (3 No's)						
	Ratio 50/1A, Core 1 : 15VA, CL – PS for SPECIAL CLASS PROTECTION. Core 2 : 15VA, CL – 0.5 for Metering, Core 3 : 15VA, CL - 5P 10 for Protection.						
	METERING: (1set)						
	96Sq.mm Digital Ammeter with selector switch Digital type						
	96 Sq.mm Digital Voltmeter with selector switch Digital voltmeter						
	PROTECTION RELAYS:						
	1) TRIPLE POLE NON DIRECTIONAL IDMT - 2 O/C + 1 E/F Relay of EE make Equivalent to CDG 31 or Digital Numerical relay and shall be compatible for BMS with communication port.-1 No.						
	2) Master Trip Relay - (1No)	LOT	1				
	3) Trip Circuit Super Vision Relay - (1No)						
	4) Transformer Auxiliary Relay - (1No)						
	INDICATION LAMPS:						
	1) ON, OFF and Trip Indication Lamps for RYB. - (1 set)						
	2) Trip Circuit Healthy lamp. - (1 set)						
	3) Spring Charging lamp. - (1 set)						
	4) Auto trip. - (1 set)						
	5) LED Type R-Y-B Phase Indication Lamps. - (1 set)						
	CONTROL SWITCHES/PUSH BUTTON						
	a) T-N-C Switch (Breaker Control Switch) - (1 set)						
	b) Trip circuit Healthy Push Button - (1 set)						
	Control Wiring with appropriate colors - (1 set)						
	230V AC/110V DC Power Pack - 1 No						
	Alarm scheme with hooter, Accept and Reset Button with 8Way Annunciation window. - (1 set)						
	Bus Bar with 630Amps Aluminium (Electrical Grade). - (1 set)						
	COMMON FOR SWITCHGEAR:						
	Heater ON and OFF Switch with Space heater, single Phase switch socket and cubicle lamp for panel illumination, MCB's for AC/DC Control - (1 set)						
	MS sheet enclosure suitable for installation with incoming and outgoing cable entry. - (1 set)						
	Note: The CTS/PTS specified are Cast Resin and Testing / Approval are as per ERDA Test Lab.						



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	DESCRIPTION	UNIT	QTY	UNIT RATE(Rs)		TOTAL RATE(Rs)	
				SUPPLY	ERECTION	SUPPLY	ERECTION
				(Rs)	(Rs)	(Rs)	(Rs)
5.0	DISTRIBUTION TRANSFORMER (OIL FILLED OUTDOOR)						
5.1	Supply, erection, testing, commissioning and installation of 11KV / 415V, 500KVA, 50Hz, Z=4.5/5% ONAN (OIL Filled), Outdoor type transformer with OLTC with ±10% instep of 1.25% manufactured as per IS 1180 PART-2 with all standard accessories and as per TSSPDCL approved standards as per Technical Specification and SLD.	Each	2				
5.2	The Tenderer/Bidder shall give the warranty of 5 Years for the Transformer and the price for the same need to be quoted by the Tenderer/Bidder. The warranty must cover quarterly checks of the transformers and oil filtration as and when required as per schedule of the OEM.	Each	2				
5.3	The Tenderer/Bidder shall quote for the Comprehensive AMC for another 5 years post expiry of warranty for Transformers as per the OEM Checklist and Operating Manual.						
	Amc Rate for 1st Year after expiry of Warranty of 5 years:	Each	2				
	Amc Rate for 2nd Year after expiry of Warranty of 5 years:	Each	2				
	Amc Rate for 3rd Year after expiry of Warranty of 5 years:	Each	2				
	Amc Rate for 4th Year after expiry of Warranty of 5 years:	Each	2				
	Amc Rate for 5th Year after expiry of Warranty of 5 years:	Each	2				
6	HT CABLES :-						
	Laying, testing and commissioning of following HT cables in Hume Pipes at a depth of 750mm form the ground level. The work shall be carried out as per the specification and as per the directions of the Engineer-in-charge at Site .						
6.1	11KVX3CX240 Sq.mm AL.XLPE.Cable Armoured	Metres	500				
6.2	11KVX3CX120 Sq.mm AL.XLPE.Cable Armoured	Metres	50				
7	HT CABLE TERMINATIONS (including supply of Double Compression glands and lugs)						
	Following points to be noted for Cable Termination at Both Source and Destination ends of Each cable:- 1)All the Cable Termination will be with Heat Shrinkable Sleeves only. 2)HT Cables:- for 1 Run of HT cable ,we are mentioning 2No's of Termination Kits,i.e (1No of Termination Kits for Source and Destination each),Please Note that each Termination Kit must contain the Lugs and Glands for all the Three Phases . 3)LT Cables:- for 1 Run of LT cable ,we are mentioning 2No's of Termination Kits,i.e (1No of Termination Kits for Source and Destination each),Please Note that each Termination Kit must contain the Lugs and Glands for all the Three Phases and Neutral . 4) The Tenderer should consider all the above points and accordingly quote for each Cable Terminations.						
	Termination of HT Cable for the following sizes. The termination shall include gland fixing and lugging with copper/aluminium lugs. .						
7.1	11KV, 3C x 240 Sq.mm /XLPE,AL.AR. Cable	Each	6				
7.2	11KV, 3C x 120 Sq.mm /XLPE,AL.AR. Cable	Each	4				



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BILL OF QUANTITY
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REVAMP OF HT & LT ELECTRIFICATION SYSTEM

	DESCRIPTION	UNIT	QTY	UNIT RATE(Rs)		TOTAL RATE(Rs)	
				SUPPLY	ERECTION	SUPPLY	ERECTION
				(Rs)	(Rs)	(Rs)	(Rs)
8.0	EARTHING SYSTEM : (EARTH FLATS)						
1	Supply, Laying and fixing of 100 x 10mm GI flat	Metres	100				
2	Supply, Laying and fixing of 75 x 6mm CU flat	Metres	100				
3	Supply, Laying and fixing of 75 x 6mm GI flat	Metres	100				
4	Supply, Laying and fixing of 50 x 6mm GI flat	Metres	100				
9	CONVENTIONAL EARTH PITS :						
a)	Seperate earth pit for the BODY with 100mm dia "B" class 2.5 long CI pipe with providing GI funnel covered with mesh of suitable size enclosed in a CC chamber of 450mm X 450mm X 3mm with suitable reinforced CI cover duly providing staggered holes of 16 nos of 12mm dia to the earth electrode filling salt and charcoal around 150mm from the bottom of the pipe to the bottom of CC chamber. The connections from the electrode through GI strip of 40 X 6mm length provided with suitable size of 14 nos holes with GI washers, nuts, bolts and all labour charges etc., complete. (For Transformers & HT Body)	Each	8				
b)	Providing of earth station with copper plate Electrodes of 600mm X 600mm X 1.5mm with Connecting Wires are conforming to NBC - 2016,UL as well as Several National/International Standards.These maintenance free Plate Electrode offers Long Life , Electrode as well as Conductors are made of high Conductivity ,Non Corrosive Copper,Exothermically Welded to Copper conductor in order to offer Maximum Life ,Two Meter Long Two Rons of Connecting Wires Ensure deep burying of the Plates in Soil complete with excavation supply ,fixing and Constructing brick chamber with cover plate having locking arrangements complete as per NBC-2016. Copper Plate need to be filled with 50Kgs of carbon based Low resistivity (0.0041 ohm per Mtr) Earth Enhancing compound as per IEC- 62561-7.The cost and coveyance of all materials, labour charges etc., complete for finished item of work. (For Transformers Neutral)	Each	4				
	Note: 1) All Earth Pit Chambers need to be Constructed with 100mm Solid Blocks. All Earth Pit Chambers to be Numbered and Painted with Reputed make Paint. 2) All Civil Works Related to Earth Pits are under the Scope of Electrical Contractor only.						



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	DESCRIPTION	UNIT	QTY	UNIT RATE(Rs)		TOTAL RATE(Rs)	
				SUPPLY	ERECTION	SUPPLY	ERECTION
				(Rs)	(Rs)	(Rs)	(Rs)
10.0	SAFETY ACCESSORIES :						
	Supply and installation of following safety accessories.						
	i) 10 class dry powder type fire extinguisher - 15						
	ii) Pair of sand brockets (two buckets on one stand) - 10						
	iii) Shock treatment chart in Telugu and English duly framed - 5						
	v) Enamelled Danger Boards for 11KV - 2						
	vi) Rubbermat-10No's						
	vii) ABC Dry Chemical Powder fire Extinguisher 1kg capacity stored pressure type fitted with guage and supplied complete with Intial charge wall bracket as per IS: 13489 with ISI mark. - 2	Lot	1				
	viii) ABC Dry Chemical Powder stored pressure type Fire extinuisher 2kg capacity fitted with pressure guage and supplied complete with Intial charge wall bracket as per IS: 13489 specification. - 2						
	ix) ABC DCP stored pressure 5kgs. capacity Fired Extinguisher. With discharge hose and Nozzle. Supplied complete with Intial charge wall bracket as per IS: 13489 with as ISI mark and ABC DCP powder is as per IS:14609 with ISI mark. - 2						
	x) CO2 type Fire Extingushier 4.5kgs. Capacity made from Brand seam less drawn steel cylinder with High pressure Discharge hose and HORN supplied complete with Intial charge wall bracket as per IS: 2878 specification with ISI mark. - 2						
11.0	Liasioning with TSSEB/CEIG Authorities for Drawings / documentations / Estimation / Power Sanction approval, till the total release of Power as per the Project Requirement.	Lot	1				
SUB TOTAL:							
GRAND TOTAL:							

ANNEXURE-B							
BILL OF QUANTITY							
(EXTERNAL -LT DISTRIBUTION SYSTEM, MAIN LT PANELS/SUB-BUILDING PANEL,LT CABLES, EARTHING Etc.)							
REVAMP OF HT & LT ELECTRIFICATION SYSTEM							
	DESCRIPTION	UNIT	QTY	UNIT RATE(Rs)		TOTAL RATE(Rs)	
				SUPPLY (Rs)	ERECTION (Rs)	SUPPLY (Rs)	ERECTION (Rs)
1.0	LT PANELS	LOT	1				
	<p>Assembly of the Transportable Sections and Transportations of the Equipment within the Site.Loading & Unloading, Installation, making earth terminations, testing and commissioning of LT panel, cubicle type, made out of 14 swg CRCA sheet steel, totally enclosed, IP 54 protection, free standing, floor mounting, dust and vermin proof ,indoor, compartmentalised, powder coated painting suitable for operation on 3 Phase and neutral, 415V, 50 Hz AC supply system with busbars extensible on both sides, interconnections with suitable size of copper lead/ solid aluminium strips, control circuit with breaker control switch & auto/ manual selector switch, ammeter, ammeter selector switches voltmeter, voltmeter selector switches, indicating lamps CT's, all incoming & outgoing feeders with true rms value multifunction power cum energy meters with ports & wired out, interlocking. complete with releases for protection all as shown on drawing including installation complete as required items and as per specifications:</p>						
	<p>ELECTRICAL NOTES:-</p> <p>A)MAIN PCC PANEL</p> <p>1) ALL INCOMING BREAKERS ARE MP BASED (EDO) WITH MFM WITH RS485 COMMUNICATION PORT , 4NO + 4NC POTENTIAL FREE CONTACTS AND RESTRICTED EARTH FAULT PROTECTION FOR EB INCOMERS IN MAIN PCC PANEL.</p> <p>2) ALL INCOMING/OUTGOING BREAKERS ON AND ABOVE THAN 250A MCCB ARE MICROPROCESSOR BASED RELEASES WITH RS485 COMMUNICATION PORT WITH ALL PROTECTIONS O/C,S/C,E/F AND 4NO + 4NC POTENTIAL FREE CONTACTS AS PER THE SLD.</p> <p>3) ALL MCCB'S LOWER THAN 250AMPS RATINGS SHOULD BE THERMAL MAGNETIC BASED RELEASES PROVIDED WITH S/C AND O/C PROTECTIONS, IT SHALL HAVE RS485 COMMUNICATION PORT.</p> <p>4)ALL THE ACB'S ARE EDO AND MCCB'S ARE MDO.</p> <p>B)COMMON POINTS FOR ALL THE PANELS.</p>						
	<p>1) ALL INCOMING FEEDERS ACB/MCCB WITH MP BASED /Thermal Magnetic Based AS APPLICABLE 4NO + 4NC POTENTIAL FREE CONTACTS , MFM AND INDICATIONS LAMPS AND ALL OUTGOING BREAKERS MCB'S /MCCB'S WITH 4NO + 4NC OR 2NO + 2NC POTENTIAL FREE CONTACTS WITH ON/OFF INDICATION LAMPS</p> <p>2) ALL CAPACITOR BANKS ARE HEAVY DUTY WITH METALLIZED POLYPROPYLENE (MPP).</p> <p>3)ALL MCB'S SHOULD BE PROVIDED WITH FAULT INDICATIONS.</p> <p>4) ALL THE MULTIFUNCTION METERS (MFM), KWH METER MUST BE PROVIDED WITH RS 485 COMMUNICATION PORT.</p> <p>5) ALL THE MFM SHALL SHOW FOLLOWING PARAMETERS V, A, F, PF, KW, KVA, KVAR, KWH, KVAH, KVARH, RUNHOURS, ON HOURS, PHASE ANGLE, INTERRUPTS, THD, EVENTS (HIGH-LOW), NEUTRAL CURRENT, K FACTOR, MAXIMUM DEMAND (KW & KVA).</p>						
1.1	MAIN LT- Indoor Type (The LT PANEL Consisting of the Following)						

ANNEXURE-B							
BILL OF QUANTITY							
(EXTERNAL -LT DISTRIBUTION SYSTEM, MAIN LT PANELS/SUB-BUILDING PANEL,LT CABLES, EARTHING Etc.)							
REVAMP OF HT & LT ELECTRIFICATION SYSTEM							
	DESCRIPTION	UNIT	QTY	UNIT RATE(Rs)		TOTAL RATE(Rs)	
				SUPPLY	ERECTION	SUPPLY	ERECTION
	ELECTRICAL +MECHANICAL INTERLOCKING WITH PLC PROGRAMMING						
a)	Incomer-1 (From EB Transformer-1)						
	800A, 4P. EDO ACB of 50KA breaking capacity with O/C, S/C, E/F and Micro Processor based Releases With RS485 communication port - 1No						
	6A, control MCB of C-Curve - 3Nos						
	Multifunction Meter(MFM) With RS485 communication port - 1 No.						
	LED Type R-Y-B Phase Indication Lamps. - (1 set)						
	On,Off & Trip Indications: (1 sets)						
	800/5A, CL-1, 15VA, Tape wound CT's - 3Nos						
b)	Incomer-2 (From DG Sync.Panel)						
	800A, 4P. EDO ACB of 50KA breaking capacity with O/C, S/C, E/F and Micro Processor based Releases With RS485 communication port- 1No						
	6A, control MCB of C-Curve - 3Nos						
	Multifunction Meter(MFM) With RS485 communication port - 1 No.						
	LED Type R-Y-B Phase Indication Lamps. - (1 set)						
	On,Off & Trip Indications: (1 sets)						
	800/5A, CL-1, 15VA, Tape wound CT's - 3Nos						
c)	BUS COUPLER						
	1250A, 4P. EDO, ACB of 50KA breaking capacity having O/C, S/C, E/F with Micro Processor based Releases with RS485 - 1Nos with all necessary indication lamps and standard protection requirements.						



ANNEXURE-B

BILL OF QUANTITY

(EXTERNAL -LT DISTRIBUTION SYSTEM, MAIN LT PANELS/SUB-BUILDING PANEL,LT CABLES, EARTHING Etc.)

REVAMP OF HT & LT ELECTRIFICATION SYSTEM

	DESCRIPTION	UNIT	QTY	UNIT RATE(Rs)		TOTAL RATE(Rs)	
				SUPPLY	ERECTION	SUPPLY	ERECTION
d)	Incomer-3 (From EB Transformer-2)						
	800A, 4P. EDO ACB of 50KA breaking capacity with O/C, S/C, E/F and Micro Processor based Releases With RS485 communication port- 1No						
	6A, control MCB of C-Curve - 3Nos						
	Multifunction Meter(MFM) With RS485 communication port - 1 No.						
	LED Type R-Y-B Phase Indication Lamps. - (1 set)						
	On,Off & Trip Indications: (1 sets)						
	800/5A, CL-1, 15VA, Tape wound CT's - 3Nos						
e)	Incomer-4 (From DG Sync.Panel)						
	1250A, 4P. EDO ACB of 50KA breaking capacity with O/C, S/C, E/F and Micro Processor based Releases With RS485 communication port- 1No						
	6A, control MCB of C-Curve - 3Nos						
	Maximum Demand Controller (MDC) With RS485 communication port - 1 No.						
	LED Type R-Y-B Phase Indication Lamps. - (1 set)						
	On,Off & Trip Indications: (1 sets)						
	1250/5A, CL-1, 15VA, Tape wound CT's - 3Nos						
f)	Outgoing Feeders on						
1)	BUS Section-1						
1)	630A, 4P, MCCB of 50KA breaking capacity with O/C, S/C, E/F and Micro Processor based Releases With RS485 communication port - 3No's. (Each consisting of following.)						
	6A, control MCB of C-Curve - 3Nos						
	Multifunction Meter(MFM) With RS485 communication port - 1 No.						
	LED Type R-Y-B Phase Indication Lamps. - (1 set)						
	On,Off & Trip Indications: (1 sets)						
	630/5A, CL-1, 15VA, Tape wound CT's - 3Nos						



ANNEXURE-B

BILL OF QUANTITY

(EXTERNAL -LT DISTRIBUTION SYSTEM, MAIN LT PANELS/SUB-BUILDING PANEL,LT CABLES, EARTHING Etc.)

REVAMP OF HT & LT ELECTRIFICATION SYSTEM

	DESCRIPTION	UNIT	QTY	UNIT RATE(Rs)		TOTAL RATE(Rs)	
				SUPPLY	ERECTION	SUPPLY	ERECTION
2)	400A, 4P, MCCB of 35KA breaking capacity with O/C, S/C, E/F and Micro Processor based Releases With RS485 communication port- 2No's. (Each consisting of following.)						
	6A, control MCB of C-Curve - 3Nos						
	Multifunction Meter(MFM) With RS485 communication port - 1 No.						
	LED Type R-Y-B Phase Indication Lamps. - (1 set)						
	On,Off & Trip Indications: (1 sets)						
	400/5A, CL-1, 15VA, Tape wound CT's - 3Nos						
3)	315A, 4P, MCCB of 35KA breaking capacity with O/C, S/C, E/F and Micro Processor based Releases With RS485 communication port - 2No's. (Each consisting of following.)						
	6A, control MCB of C-Curve - 3Nos						
	Multifunction Meter(MFM) With RS485 communication port - 1 No.						
	LED Type R-Y-B Phase Indication Lamps. - (1 set)						
	On,Off & Trip Indications: (1 sets)						
	315/5A, CL-1, 15VA, Tape wound CT's - 3Nos						
4)	250A, 4P, MCCB of 35KA breaking capacity with O/C, S/C, E/F and Micro Processor based Releases With RS485 communication port- 4No's. (Each consisting of following.)						
	6A, control MCB of C-Curve - 3Nos						
	Multifunction Meter(MFM) With RS485 communication port - 1 No.						
	LED Type R-Y-B Phase Indication Lamps. - (1 set)						
	On,Off & Trip Indications: (1 sets)						
	250/5A, CL-1, 15VA, Tape wound CT's - 3Nos						
II) BUS Section-2							
1)	630A, 4P, MCCB of 50KA breaking capacity with O/C, S/C, E/F and Micro Processor based Releases With RS485 communication port - 3No's. (Each consisting of following.)						
	6A, control MCB of C-Curve - 3Nos						
	Multifunction Meter(MFM) With RS485 communication port - 1 No.						
	LED Type R-Y-B Phase Indication Lamps. - (1 set)						
	On,Off & Trip Indications: (1 sets)						
	630/5A, CL-1, 15VA, Tape wound CT's - 3Nos						
2)	400A, 4P, MCCB of 35KA breaking capacity with O/C, S/C, E/F and Micro Processor based Releases With RS485 communication port- 2No's. (Each consisting of following.)						
	6A, control MCB of C-Curve - 3Nos						
	Multifunction Meter(MFM) With RS485 communication port - 1 No.						
	LED Type R-Y-B Phase Indication Lamps. - (1 set)						
	On,Off & Trip Indications: (1 sets)						
	400/5A, CL-1, 15VA, Tape wound CT's - 3Nos						



ANNEXURE-B

BILL OF QUANTITY

(EXTERNAL -LT DISTRIBUTION SYSTEM, MAIN LT PANELS/SUB-BUILDING PANEL,LT CABLES, EARTHING Etc.)

REVAMP OF HT & LT ELECTRIFICATION SYSTEM

	DESCRIPTION	UNIT	QTY	UNIT RATE(Rs)		TOTAL RATE(Rs)	
				SUPPLY	ERECTION	SUPPLY	ERECTION
3)	315A, 4P, MCCB of 35KA breaking capacity with O/C, S/C, E/F and Micro Processor based Releases With RS485 communication port - 1No's. (Each consisting of following.)						
	6A, control MCB of C-Curve - 3Nos						
	Multifunction Meter(MFM) With RS485 communication port - 1 No.						
	LED Type R-Y-B Phase Indication Lamps. - (1 set)						
	On,Off & Trip Indications: (1 sets)						
	315/5A, CL-1, 15VA, Tape wound CT's - 3Nos						
4)	250A, 4P, MCCB of 35KA breaking capacity with O/C, S/C, E/F and Micro Processor based Releases With RS485 communication port- 3No's. (Each consisting of following.)						
	6A, control MCB of C-Curve - 3Nos						
	Multifunction Meter(MFM) With RS485 communication port - 1 No.						
	LED Type R-Y-B Phase Indication Lamps. - (1 set)						
	On,Off & Trip Indications: (1 sets)						
	250/5A, CL-1, 15VA, Tape wound CT's - 3Nos						
5)	100A, 4P. MCCB of 25KA breaking capacity having O/C, S/C,E/F with Thermal Magnetic Based Releases - 1No's. (Each consisting of following.)						
	100Amps Earth Fault Module with CBCT						
	6A, control MCB of C-Curve - 3Nos						
	Multifunction Meter(MFM) With RS485 communication port - 1 No.						
	LED Type R-Y-B Phase Indication Lamps. - (1 set)						
	On,Off & Trip Indications: (1 sets)						
100/5A, CL-1, 15VA, Tape wound CT's - 3Nos							

ANNEXURE-B							
BILL OF QUANTITY							
(EXTERNAL -LT DISTRIBUTION SYSTEM, MAIN LT PANELS/SUB-BUILDING PANEL,LT CABLES, EARTHING Etc.)							
REVAMP OF HT & LT ELECTRIFICATION SYSTEM							
	DESCRIPTION	UNIT	QTY	UNIT RATE(Rs)		TOTAL RATE(Rs)	
				SUPPLY	ERECTION	SUPPLY	ERECTION
6)	63A, 4P. MCCB of 25KA breaking capacity having O/C, S/C, with Thermal Magnetic Based Releases - 1No's. (Each consisting of following.) On,Off & Trip Indications: (1 sets)						
e)	Surge Protection Device as Per IS/IEC 62305 Part4 & IEC 61643 Part 11: 2011 This panel shall include SPD of following specification:- IEC 61643-11: 2011 tested, VDE approved (UL 1449 4th edition listed) Bus barmounted Type 1+2 Surge Protection Device of following specification :Uo - 240 V 50/60Hz, MCOV of 350 V ,Iimp -12.5 kA (10/350µs) & Imax - 140 kA (8/20µ sec),Voltage Protection Level, Up < 1.3 kV,Response time < 1 ns,TOV withstand 5sec: 528 V.Model: CAPE Raycap - STRIKESORB 40-CWarranty : 10 Years(2 sets of SPD'S as per SLD)						
g)	Bus Bars Bus Bars Section-1 : 415V,1600 Amps,3Phase, 4W E91 Grade Aluminium Bus Bars Section-2 : 415V,1600 Amps,3Phase, 4W E91 Grade Aluminium						
2.0	MDB-EFC BUILDING (Electrical Room-2, Near Kitchen Area-EFC Building)	LOT	1				
a)	Incomer-1 630A, 4P, MCCB of 50KA breaking capacity with O/C, S/C, E/F and Micro Processor based Releases With RS485 communication port - 1No's. (Each consisting of following.) 6A, control MCB of C-Curve - 3Nos Multifunction Meter(MFM) With RS485 communication port - 1 No. LED Type R-Y-B Phase Indication Lamps. - (1 set) On,Off & Trip Indications: (1 sets) 630/5A, CL-1, 15VA, Tape wound CT's - 3Nos						
	Bus Section-1						
b)	Outgoings 1) 160A,TPN,MCCB of 25KA breaking capacity having O/C, S/C, with Thermal Magnetic Based Releases - 2No's. (Each consisting of following.) On,Off & Trip Indications: (1 sets) 2) 125A,TPN,MCCB of 25KA breaking capacity having O/C, S/C, with Thermal Magnetic Based Releases - 6No's. (Each consisting of following.) On,Off & Trip Indications: (1 sets) 3) 63A,4P,MCCB of 25KA breaking capacity having O/C, S/C, with Thermal Magnetic Based Releases - 4No's. (Each consisting of following.) On,Off & Trip Indications: (1 sets)						
c)	Bus Bar Section-1 415V,800 Amps,3Phase, 4W E91 Grade Aluminium						



ANNEXURE-B

BILL OF QUANTITY

(EXTERNAL -LT DISTRIBUTION SYSTEM, MAIN LT PANELS/SUB-BUILDING PANEL,LT CABLES, EARTHING Etc.)

REVAMP OF HT & LT ELECTRIFICATION SYSTEM

	DESCRIPTION	UNIT	QTY	UNIT RATE(Rs)		TOTAL RATE(Rs)	
				SUPPLY	ERECTION	SUPPLY	ERECTION
d)	Incomer-2						
	630A, 4P, MCCB of 50KA breaking capacity with O/C, S/C, E/F and Micro Processor based Releases With RS485 communication port - 1No's. (Each consisting of following.)						
	6A, control MCB of C-Curve - 3Nos						
	Multifunction Meter(MFM) With RS485 communication port - 1 No.						
	LED Type R-Y-B Phase Indication Lamps. - (1 set)						
	On,Off & Trip Indications: (1 sets)						
	630/5A, CL-1, 15VA, Tape wound CT's - 3Nos						
	Bus Section-2						
e)	Outgoings						
1)	160A,TPN,MCCB of 25KA breaking capacity having O/C, S/C, with Thermal Magnetic Based Releases - 3No's. (Each consisting of following.)						
	On,Off & Trip Indications: (1 sets)						
2)	125A,4P,MCCB of 25KA breaking capacity having O/C, S/C, with Thermal Magnetic Based Releases - 3No's. (Each consisting of following.)						
	On,Off & Trip Indications: (1 sets)						
3)	100A,TPN,MCCB of 25KA breaking capacity having O/C, S/C, with Thermal Magnetic Based Releases - 8No's. (Each consisting of following.)						
	On,Off & Trip Indications: (1 sets)						
4)	63A,4P,MCCB of 25KA breaking capacity having O/C, S/C, with Thermal Magnetic Based Releases - 5No's. (Each consisting of following.)						
	On,Off & Trip Indications: (1 sets)						
5)	63A,TPN,MCB of 10KA breaking capacity having O/C, S/C, with Thermal Magnetic Based Releases - 1No's. (Each consisting of following.)						
f)	Bus Bar Section-2						
	415V,800 Amps,3Phase, 4W E91 Grade Aluminium						



ANNEXURE-B

BILL OF QUANTITY

(EXTERNAL -LT DISTRIBUTION SYSTEM, MAIN LT PANELS/SUB-BUILDING PANEL,LT CABLES, EARTHING Etc.)

REVAMP OF HT & LT ELECTRIFICATION SYSTEM

	DESCRIPTION	UNIT	QTY	UNIT RATE(Rs)		TOTAL RATE(Rs)	
				SUPPLY	ERECTION	SUPPLY	ERECTION
g)	Surge Protection Device as Per IS/IEC 62305 Part4 & IEC 61643 Part 11: 2011						
	This panel shall include SPD of following specification:- IEC 61643-11: 2011 tested, VDE approved DINRAIL mounted Type 2 Surge Protection Device of following specification :Uo - 240 V, MCOV - 300 V , In (L-N/N-PE) - 20 kA / 40 kA (8/20µ sec) I _{max} (L-N/N-PE) - 50 kA / 65 kA (8/20µ sec), Voltage Protection Level, Up < 1.5 kV, Response time (L-N/N-PE) : < 25 ns / < 100 ns TOV withstand 5 sec (L-N) : 337 V, TOV withstand 200 ms (N-PE) : 1200 V, Short Circuit Current Rating - 25 kA,Back-up Fuse Rating - 125 A gGModel: CAPE Raycap - ProTec T2-300-3+1-R (Article No. IZ59.0122)- (2 sets of SPD'S as per SLD)						
	630A, 4P, MCCB of 50KA breaking capacity with O/C, S/C, E/F and Micro Processor based Releases With RS485 communication port - 1Nos with all necessary indication lamps and standard protection requirements.						
3.0	MDB ADMIN BUILDING (Electrical Room-3)	LOT	1				
a)	Incomer-1						
	630A, 4P, MCCB of 50KA breaking capacity with O/C, S/C, E/F and Micro Processor based Releases With RS485 communication port - 1No's. (Each consisting of following.)						
	6A, control MCB of C-Curve - 3Nos						
	Multifunction Meter(MFM) With RS485 communication port - 1 No.						
	LED Type R-Y-B Phase Indication Lamps. - (1 set)						
	On,Off & Trip Indications: (1 sets)						
	630/5A, CL-1, 15VA, Tape wound CT's - 3Nos						



ANNEXURE-B

BILL OF QUANTITY

(EXTERNAL -LT DISTRIBUTION SYSTEM, MAIN LT PANELS/SUB-BUILDING PANEL,LT CABLES, EARTHING Etc.)

REVAMP OF HT & LT ELECTRIFICATION SYSTEM

	DESCRIPTION	UNIT	QTY	UNIT RATE(Rs)		TOTAL RATE(Rs)	
				SUPPLY	ERECTION	SUPPLY	ERECTION
	Bus Section-1						
b)	Outgoings						
1)	160A,TPN,MCCB of 25KA breaking capacity having O/C, S/C, with Thermal Magnetic Based Releases - 6No's. (Each consisting of following.) On,Off & Trip Indications: (1 sets)						
2)	125A,4P,MCCB of 25KA breaking capacity having O/C, S/C, with Thermal Magnetic Based Releases - 2No's. (Each consisting of following.) On,Off & Trip Indications: (1 sets)						
3)	63A,4P,MCCB of 25KA breaking capacity having O/C, S/C, with Thermal Magnetic Based Releases - 4No's. (Each consisting of following.) On,Off & Trip Indications: (1 sets)						
c)	Bus Bar Section-1 415V,800 Amps,3Phase, 4W E91 Grade Aluminium						
d)	Incomer-2 630A, 4P, MCCB of 50KA breaking capacity with O/C, S/C, E/F and Micro Processor based Releases With RS485 communication port - 1No's. (Each consisting of following.) 6A, control MCB of C-Curve - 3Nos Multifunction Meter(MFM) With RS485 communication port - 1 No. LED Type R-Y-B Phase Indication Lamps. - (1 set) On,Off & Trip Indications: (1 sets) 630/5A, CL-1, 15VA, Tape wound CT's - 3Nos						
	Bus Section-2						
e)	Outgoings						
1)	160A,TPN,MCCB of 25KA breaking capacity having O/C, S/C, with Thermal Magnetic Based Releases - 7No's. (Each consisting of following.) On,Off & Trip Indications: (1 sets)						
2)	100A,TPN,MCCB of 25KA breaking capacity having O/C, S/C, with Thermal Magnetic Based Releases - 1No's. (Each consisting of following.) On,Off & Trip Indications: (1 sets)						

ANNEXURE-B							
BILL OF QUANTITY							
(EXTERNAL -LT DISTRIBUTION SYSTEM, MAIN LT PANELS/SUB-BUILDING PANEL,LT CABLES, EARTHING Etc.)							
REVAMP OF HT & LT ELECTRIFICATION SYSTEM							
	DESCRIPTION	UNIT	QTY	UNIT RATE(Rs)		TOTAL RATE(Rs)	
				SUPPLY	ERECTION	SUPPLY	ERECTION
3)	63A,4P,MCCB of 25KA breaking capacity having O/C, S/C, with Thermal Magnetic Based Releases - 2No's. (Each consisting of following.) On,Off & Trip Indications: (1 sets)						
4)	63A,TPN,MCB of 10KA breaking capacity having O/C, S/C, with Thermal Magnetic Based Releases - 2No's. (Each consisting of following.) On,Off & Trip Indications: (1 sets)						
5)	40A,TPN,MCB of 10KA breaking capacity having O/C, S/C, with Thermal Magnetic Based Releases - 1No's. (Each consisting of following.)						
f)	Bus Bar Section-2 415V,800 Amps,3Phase, 4W E91 Grade Aluminium						
g)	Surge Protection Device as Per IS/IEC 62305 Part4 & IEC 61643 Part 11: 2011 This panel shall include SPD of following specification:- IEC 61643-11: 2011 tested, VDE approved DINRAIL mounted Type 2 Surge Protection Device of following specification :Uo - 240 V, MCOV - 300 V , In (L-N/N-PE) - 20 kA / 40 kA (8/20µ sec) I _{max} (L-N/N-PE) - 50 kA / 65 kA (8/20µ sec), Voltage Protection Level, Up < 1.5 kV, Response time (L-N/N-PE) : < 25 ns / < 100 ns TOV withstand 5 sec (L-N) : 337 V, TOV withstand 200 ms (N-PE) : 1200 V, Short Circuit Current Rating - 25 kA,Back-up Fuse Rating - 125 A gGModel: CAPE Raycap - ProTec T2-300-3+1-R (Article No. IZ59.0122)- (2 sets of SPD'S as per SLD)						
h)	BUS COUPLER 630A, 4P, MCCB of 50KA breaking capacity with O/C, S/C, E/F and Micro Processor based Releases With RS485 communication port - 1Nos with all necessary indication lamps and standard protection requirements.						

ANNEXURE-B							
BILL OF QUANTITY							
(EXTERNAL -LT DISTRIBUTION SYSTEM, MAIN LT PANELS/SUB-BUILDING PANEL,LT CABLES, EARTHING Etc.)							
REVAMP OF HT & LT ELECTRIFICATION SYSTEM							
	DESCRIPTION	UNIT	QTY	UNIT RATE(Rs)		TOTAL RATE(Rs)	
				SUPPLY	ERECTION	SUPPLY	ERECTION
4.0	UPS-PANEL (Electrical Room-3-Admin Building)	LOT	1				
a)	Incomer						
	315A, 4P, MCCB of 35KA breaking capacity with O/C, S/C, E/F and Micro Processor based Releases With RS485 communication port - 1No's. (Each consisting of following.)						
	6A, control MCB of C-Curve - 3Nos						
	Multifunction Meter(MFM) With RS485 communication port - 1 No.						
	LED Type R-Y-B Phase Indication Lamps. - (1 set)						
	On,Off & Trip Indications: (1 sets)						
	315/5A, CL-1, 15VA, Tape wound CT's - 3Nos						
b)	Outgoings						
1)	63A,TPN,MCB of 10KA breaking capacity having O/C, S/C, with Thermal Magnetic Based Releases - 12No's.						
c)	Bus Bars						
	415V,315 Amps,3Phase, 4W E91 Grade Aluminium						
d)	Surge Protection Device as Per IS/IEC 62305 Part4 & IEC 61643 Part 11: 2011						
	This panel shall include SPD of following specification:- IEC 61643-11: 2011 tested, VDE approved DINRAIL mounted Type 2 Surge Protection Device of following specification :Uo - 240 V, MCOV - 300 V , In (L-N/N-PE) - 20 kA / 40 kA (8/20µ sec) I _{max} (L-N/N-PE) - 50 kA / 65 kA (8/20µ sec), Voltage Protection Level, U _p < 1.5 kV, Response time (L-N/N-PE) : < 25 ns / < 100 ns TOV withstand 5 sec (L-N) : 337 V, TOV withstand 200 ms (N-PE) : 1200 V, Short Circuit Current Rating - 25 kA,Back-up Fuse Rating - 125 A gGModel: CAPE Raycap - ProTec T2-300-3+1-R (Article No. IZ59.0122)-(1 sets of SPD'S as per SLD)						

ANNEXURE-B							
BILL OF QUANTITY							
(EXTERNAL -LT DISTRIBUTION SYSTEM, MAIN LT PANELS/SUB-BUILDING PANEL,LT CABLES, EARTHING Etc.)							
REVAMP OF HT & LT ELECTRIFICATION SYSTEM							
	DESCRIPTION	UNIT	QTY	UNIT RATE(Rs)		TOTAL RATE(Rs)	
				SUPPLY	ERECTION	SUPPLY	ERECTION
5.0	UPS-PANEL-1 (DATA CENTRE & OTHERS)	LOT	1				
a)	Incomer-1 250A, 4P, MCCB of 35KA breaking capacity with O/C, S/C, E/F and Micro Processor based Releases With RS485 communication port - 1No's. (Each consisting of following.)						
	6A, control MCB of C-Curve - 3Nos						
	Multifunction Meter(MFM) With RS485 communication port - 1 No.						
	LED Type R-Y-B Phase Indication Lamps. - (1 set)						
	On,Off & Trip Indications: (1 sets)						
	250/5A, CL-1, 15VA, Tape wound CT's - 3Nos						
	Bus Section-1						
b)	Outgoings						
1)	100,4P,MCCB of 25KA breaking capacity having O/C, S/C, with Thermal Magnetic Based Releases - 2No's. (Each consisting of following.)						
	6A, control MCB of C-Curve - 3Nos						
	Multifunction Meter(MFM) With RS485 communication port - 1 No.						
	LED Type R-Y-B Phase Indication Lamps. - (1 set)						
	On,Off & Trip Indications: (1 sets)						
	100/5A, CL-1, 15VA, Tape wound CT's - 3Nos						
2)	63A,4P,MCCB of 25KA breaking capacity having O/C, S/C, with Thermal Magnetic Based Releases - 1No's. (Each consisting of following.)						
	On,Off & Trip Indications: (1 sets)						
c)	Bus Bar Section-1						
	415V,250 Amps,3Phase, 4W E91 Grade Aluminium						
	Bus Section-2						
d)	Incomer-2 250A, 4P, MCCB of 35KA breaking capacity with O/C, S/C, E/F and Micro Processor based Releases With RS485 communication port - 1No's. (Each consisting of following.)						
	6A, control MCB of C-Curve - 3Nos						
	Multifunction Meter(MFM) With RS485 communication port - 1 No.						
	LED Type R-Y-B Phase Indication Lamps. - (1 set)						
	On,Off & Trip Indications: (1 sets)						
	250/5A, CL-1, 15VA, Tape wound CT's - 3Nos						

ANNEXURE-B							
BILL OF QUANTITY							
(EXTERNAL -LT DISTRIBUTION SYSTEM, MAIN LT PANELS/SUB-BUILDING PANEL,LT CABLES, EARTHING Etc.)							
REVAMP OF HT & LT ELECTRIFICATION SYSTEM							
	DESCRIPTION	UNIT	QTY	UNIT RATE(Rs)		TOTAL RATE(Rs)	
				SUPPLY	ERECTION	SUPPLY	ERECTION
e)	Outgoings						
1)	100,4P,MCCB of 25KA breaking capacity having O/C, S/C, with Thermal Magnetic Based Releases - 2No's. (Each consisting of following.)						
	6A, control MCB of C-Curve - 3Nos						
	Multifunction Meter(MFM) With RS485 communication port - 1 No.						
	LED Type R-Y-B Phase Indication Lamps. - (1 set)						
	On,Off & Trip Indications: (1 sets)						
	100/5A, CL-1, 15VA, Tape wound CT's - 3Nos						
2)	63A,4P,MCCB of 25KA breaking capacity having O/C, S/C, with Thermal Magnetic Based Releases - 1No's. (Each consisting of following.)						
	On,Off & Trip Indications: (1 sets)						
f)	Bus Bar Section-2						
	415V,250 Amps,3Phase, 4W E91 Grade Aluminium						
g)	Surge Protection Device as Per IS/IEC 62305 Part4 & IEC 61643 Part 11: 2011						
	This panel shall include SPD of following specification:- IEC 61643-11: 2011 tested, VDE approved DINRAIL mounted Type 2 Surge Protection Device of following specification :Uo - 240 V, MCOV - 300 V , In (L-N/N-PE) - 20 kA / 40 kA (8/20µ sec) Imax (L-N/N-PE) - 50 kA / 65 kA (8/20µ sec), Voltage Protection Level, Up < 1.5 kV, Response time (L-N/N-PE) : < 25 ns / < 100 ns TOV withstand 5 sec (L-N) : 337 V, TOV withstand 200 ms (N-PE) : 1200 V, Short Circuit Current Rating - 25 kA,Back-up Fuse Rating - 125 A gGModel: CAPE Raycap - ProTec T2-300-3+1-R (Article No. IZ59.0122)- (2 sets of SPD'S as per SLD)						
h)	BUS COUPLER						
	250A, 4P, MCCB of 50KA breaking capacity with O/C, S/C, E/F and Micro Processor based Releases With RS485 communication port - 1Nos with all necessary indication lamps and standard protection requirements.						

ANNEXURE-B							
BILL OF QUANTITY							
(EXTERNAL -LT DISTRIBUTION SYSTEM, MAIN LT PANELS/SUB-BUILDING PANEL,LT CABLES, EARTHING Etc.)							
REVAMP OF HT & LT ELECTRIFICATION SYSTEM							
6.0	DESCRIPTION	UNIT	QTY	UNIT RATE(Rs)		TOTAL RATE(Rs)	
				SUPPLY	ERECTION	SUPPLY	ERECTION
	UPS-PANEL-2 (NEAR UPS UNITS/FLOOR)	LOT	1				
a)	Incomer-1 250A, 4P, MCCB of 35KA breaking capacity with O/C, S/C, E/F and Micro Processor based Releases With RS485 communication port - 1No's. (Each consisting of following.) 6A, control MCB of C-Curve - 3Nos Multifunction Meter(MFM) With RS485 communication port - 1 No. LED Type R-Y-B Phase Indication Lamps. - (1 set) On,Off & Trip Indications: (1 sets) 250/5A, CL-1, 15VA, Tape wound CT's - 3Nos						
	Bus Section-1						
b)	Outgoings 1) 125,4P,MCCB of 25KA breaking capacity having O/C, S/C, with Thermal Magnetic Based Releases - 2No's. (Each consisting of following.) 6A, control MCB of C-Curve - 3Nos Multifunction Meter(MFM) With RS485 communication port - 1 No. LED Type R-Y-B Phase Indication Lamps. - (1 set) On,Off & Trip Indications: (1 sets) 125/5A, CL-1, 15VA, Tape wound CT's - 3Nos 2) 63A,4P,MCCB of 25KA breaking capacity having O/C, S/C, with Thermal Magnetic Based Releases - 1No's. (Each consisting of following.) On,Off & Trip Indications: (1 sets)						
	Bus Bar Section-1 415V,250 Amps,3Phase, 4W E91 Grade Aluminium						
	Bus Section-2						
d)	Incomer-2 250A, 4P, MCCB of 35KA breaking capacity with O/C, S/C, E/F and Micro Processor based Releases With RS485 communication port - 1No's. (Each consisting of following.) 6A, control MCB of C-Curve - 3Nos Multifunction Meter(MFM) With RS485 communication port - 1 No. LED Type R-Y-B Phase Indication Lamps. - (1 set) On,Off & Trip Indications: (1 sets) 250/5A, CL-1, 15VA, Tape wound CT's - 3Nos						

ANNEXURE-B							
BILL OF QUANTITY							
(EXTERNAL -LT DISTRIBUTION SYSTEM, MAIN LT PANELS/SUB-BUILDING PANEL,LT CABLES, EARTHING Etc.)							
REVAMP OF HT & LT ELECTRIFICATION SYSTEM							
	DESCRIPTION	UNIT	QTY	UNIT RATE(Rs)		TOTAL RATE(Rs)	
				SUPPLY	ERECTION	SUPPLY	ERECTION
e)	Outgoings						
1)	100,4P,MCCB of 25KA breaking capacity having O/C, S/C, with Thermal Magnetic Based Releases - 2No's. (Each consisting of following.)						
	6A, control MCB of C-Curve - 3Nos						
	Multifunction Meter(MFM) With RS485 communication port - 1 No.						
	LED Type R-Y-B Phase Indication Lamps. - (1 set)						
	On,Off & Trip Indications: (1 sets)						
	100/5A, CL-1, 15VA, Tape wound CT's - 3Nos						
2)	63A,4P,MCCB of 25KA breaking capacity having O/C, S/C, with Thermal Magnetic Based Releases - 1No's. (Each consisting of following.)						
	On,Off & Trip Indications: (1 sets)						
f)	Bus Bar Section-2						
	415V,250 Amps,3Phase, 4W E91 Grade Aluminium						
g)	Surge Protection Device as Per IS/IEC 62305 Part4 & IEC 61643 Part 11: 2011						
	This panel shall include SPD of following specification:- IEC 61643-11: 2011 tested, VDE approved DINRAIL mounted Type 2 Surge Protection Device of following specification :Uo - 240 V, MCOV - 300 V , In (L-N/N-PE) - 20 kA / 40 kA (8/20µ sec) Imax (L-N/N-PE) - 50 kA / 65 kA (8/20µ sec), Voltage Protection Level, Up < 1.5 kV, Response time (L-N/N-PE) : < 25 ns / < 100 ns TOV withstand 5 sec (L-N) : 337 V, TOV withstand 200 ms (N-PE) : 1200 V, Short Circuit Current Rating - 25 kA,Back-up Fuse Rating - 125 A gGModel: CAPE Raycap - ProTec T2-300-3+1-R (Article No. IZ59.0122)- (2 sets of SPD'S as per SLD)						
h)	BUS COUPLER						
	250A, 4P, MCCB of 50KA breaking capacity with O/C, S/C, E/F and Micro Processor based Releases With RS485 communication port - 1Nos with all necessary indication lamps and standard protection requirements.						

ANNEXURE-B							
BILL OF QUANTITY							
(EXTERNAL -LT DISTRIBUTION SYSTEM, MAIN LT PANELS/SUB-BUILDING PANEL,LT CABLES, EARTHING Etc.)							
REVAMP OF HT & LT ELECTRIFICATION SYSTEM							
	DESCRIPTION	UNIT	QTY	UNIT RATE(Rs)		TOTAL RATE(Rs)	
				SUPPLY	ERECTION	SUPPLY	ERECTION
7.0	SUB-PANEL-EFC BUILDING	LOT	1				
a)	Incomer-1						
	400A, 4P, MCCB of 35KA breaking capacity with O/C, S/C, E/F and Micro Processor based Releases With RS485 communication port - 1No's. (Each consisting of following.)						
	6A, control MCB of C-Curve - 3Nos						
	Multifunction Meter(MFM) With RS485 communication port - 1 No.						
	LED Type R-Y-B Phase Indication Lamps. - (1 set)						
	On,Off & Trip Indications: (1 sets)						
	400/5A, CL-1, 15VA, Tape wound CT's - 3Nos						
	Bus Section-1						
b)	Outgoings						
1)	250A,4P, MCCB of 35KA breaking capacity with O/C, S/C, E/F and Micro Processor based Releases With RS485 communication port - 2No's. (Each consisting of following.)						
	On,Off & Trip Indications: (1 sets)						
2)	100A,4P,MCCB of 25KA breaking capacity having O/C, S/C, with Thermal Magnetic Based Releases - 1No's. (Each consisting of following.)						
	On,Off & Trip Indications: (1 sets)						
2)	63A,4P,MCCB of 25KA breaking capacity having O/C, S/C, with Thermal Magnetic Based Releases - 4No's. (Each consisting of following.)						
	On,Off & Trip Indications: (1 sets)						
c)	Bus Bar Section-1						
	415V,400 Amps,3Phase, 4W E91 Grade Aluminium						
	Bus Section-2						
d)	Incomer-2						
	400A, 4P, MCCB of 35KA breaking capacity with O/C, S/C, E/F and Micro Processor based Releases With RS485 communication port - 1No's. (Each consisting of following.)						
	6A, control MCB of C-Curve - 3Nos						
	Multifunction Meter(MFM) With RS485 communication port - 1 No.						
	LED Type R-Y-B Phase Indication Lamps. - (1 set)						
	On,Off & Trip Indications: (1 sets)						
	400/5A, CL-1, 15VA, Tape wound CT's - 3Nos						
e)	Outgoings						
1)	200A,4P,MCCB of 25KA breaking capacity having O/C, S/C, with Thermal Magnetic Based Releases - 2No's. (Each consisting of following.)						
	On,Off & Trip Indications: (1 sets)						
2)	100A,4P,MCCB of 25KA breaking capacity having O/C, S/C, with Thermal Magnetic Based Releases - 3No's. (Each consisting of following.)						
	On,Off & Trip Indications: (1 sets)						



ANNEXURE-B

BILL OF QUANTITY

(EXTERNAL -LT DISTRIBUTION SYSTEM, MAIN LT PANELS/SUB-BUILDING PANEL,LT CABLES, EARTHING Etc.)

REVAMP OF HT & LT ELECTRIFICATION SYSTEM

	DESCRIPTION	UNIT	QTY	UNIT RATE(Rs)		TOTAL RATE(Rs)	
				SUPPLY	ERECTION	SUPPLY	ERECTION
3)	63A,TPN,MCB of 10KA breaking capacity having O/C, S/C, with Thermal Magnetic Based Releases -2No's. (Each consisting of following.) On,Off & Trip Indications: (1 sets)						
f)	Bus Bar Section-2 415V,400 Amps,3Phase, 4W E91 Grade Aluminium						
g)	Surge Protection Device as Per IS/IEC 62305 Part4 & IEC 61643 Part 11: 2011 This panel shall include SPD of following specification:- IEC 61643-11: 2011 tested, VDE approved DINRAIL mounted Type 2 Surge Protection Device of following specification :Uo - 240 V, MCOV - 300 V , In (L-N/N-PE) - 20 kA / 40 kA (8/20µ sec) I _{max} (L-N/N-PE) - 50 kA / 65 kA (8/20µ sec), Voltage Protection Level, Up < 1.5 kV, Response time (L-N/N-PE) : < 25 ns / < 100 ns TOV withstand 5 sec (L-N) : 337 V, TOV withstand 200 ms (N-PE) : 1200 V, Short Circuit Current Rating - 25 kA,Back-up Fuse Rating - 125 A gGModel: CAPE Raycap - ProTec T2-300-3+1-R (Article No. IZ59.0122)- (2 sets of SPD'S as per SLD)						
h)	BUS COUPLER 400A, 4P, MCCB of 35KA breaking capacity with O/C, S/C, E/F and Micro Processor based Releases With RS485 communication port - 1Nos with all necessary indication lamps and standard protection requirements.						

ANNEXURE-B							
BILL OF QUANTITY							
(EXTERNAL -LT DISTRIBUTION SYSTEM, MAIN LT PANELS/SUB-BUILDING PANEL,LT CABLES, EARTHING Etc.)							
REVAMP OF HT & LT ELECTRIFICATION SYSTEM							
	DESCRIPTION	UNIT	QTY	UNIT RATE(Rs)		TOTAL RATE(Rs)	
				SUPPLY	ERECTION	SUPPLY	ERECTION
8.0	COMMON SERVICE PANEL LOC: Electrical Room-3-Admin Building	LOT	1				
a)	Incomer						
	160A, 4P, MCCB of 25KA breaking capacity with O/C, S/C, E/F and Thermal Magnetic based Releases With RS485 communication port - 1No's. (Each consisting of following.)						
	160A Earth Fault Module with CBCT.						
	6A, control MCB of C-Curve - 3Nos						
	Multifunction Meter(MFM) With RS485 communication port - 1 No.						
	LED Type R-Y-B Phase Indication Lamps. - (1 set)						
	On,Off & Trip Indications: (1 sets)						
	160/5A, CL-1, 15VA, Tape wound CT's - 3Nos						
b)	Outgoings						
1)	63A,4P,MCCB of 25KA breaking capacity having O/C, S/C, with Thermal Magnetic Based Releases - 1No's. (Each consisting of following.)						
	On,Off & Trip Indications: (1 sets)						
2)	63A, TPN. MCB of 10KA breaking capacity having O/C, S/C, with Thermal Magnetic Based Releases- 7No's.						
c)	Bus Bars						
	415V,200 Amps 4W E91 Grade Aluminium						
d)	Surge Protection Device as Per IS/IEC 62305 Part4 & IEC 61643 Part 11: 2011						
	This panel shall include SPD of following specification:- IEC 61643-11: 2011 tested, VDE approved DINRAIL mounted Type 2 Surge Protection Device of following specification :Uo - 240 V, MCOV - 300 V , In (L-N/N-PE) - 20 kA / 40 kA (8/20µ sec) I _{max} (L-N/N-PE) - 50 kA / 65 kA (8/20µ sec), Voltage Protection Level, Up < 1.5 kV, Response time (L-N/N-PE) : < 25 ns / < 100 ns TOV withstand 5 sec (L-N) : 337 V, TOV withstand 200 ms (N-PE) : 1200 V, Short Circuit Current Rating - 25 kA,Back-up Fuse Rating - 125 A gGModel: CAPE Raycap - ProTec T2-300-3+1-R (Article No. IZ59.0122)-(1 sets of SPD'S as per SLD)						



ANNEXURE-B

BILL OF QUANTITY

(EXTERNAL -LT DISTRIBUTION SYSTEM, MAIN LT PANELS/SUB-BUILDING PANEL,LT CABLES, EARTHING Etc.)

REVAMP OF HT & LT ELECTRIFICATION SYSTEM

	DESCRIPTION	UNIT	QTY	UNIT RATE(Rs)		TOTAL RATE(Rs)	
				SUPPLY	ERECTION	SUPPLY	ERECTION
9.0	APFC PANEL (150KVAR)-2No's						
	Panel consisting of the following						
a)	Incomers						
	315A,4P,MCCB of 35KA breaking capacity having O/C, S/C, E/F with Micro Processor Based Releases with RS485 Communication Port- 1No						
	6A,10KA Control MCB - 3Nos						
	315/5A, CL-1, 15VA, Tape wound CT's - 3Nos						
	PFR relay - 1No						
	LED Type R-Y-B Phase Indication Lamps. - (1 set)						
	Voltmeter of range (0-500V) with selector switch - 1Set						
	Ammeter of range (0-315A) with selector switch - 1Set						
	6 channels Power factor controller relay for monitoring the capacitor bank.						
b)	Outgoing						
		EACH	2.00				
1)	50 KVAR Capacitor Bank Heavy Duty Box - 2No.s, each bank consisting of 125 MCCB thermal magnetic based - 1No; MOC 110A Contactor-1No; ON / OFF Push buttons - 1set; ON / OFF Indicating lamps - 1set						
2)	25 KVAR Capacitor Bank heavy Duty Box- 4No.s(2nos.Spare), each bank consisting of 63A MCCB thermal magnetic based -1No's; MOC 70A Capacitor duty Contactor-1No; ON / OFF Push buttons - 1set; ON / OFF Indicating lamps - 1set SPARES						
c)	Busbar						
	415V, 315A, 3Ph, 4wire 50Hz, Aluminium busbars (91E electrical grade) having withstand ability symmetrical fault level of 35KA for 1 Sec. - LS						
	Note - All Capacitors Should be with 7% DETUNED FILTERS.						



ANNEXURE-B

BILL OF QUANTITY

(EXTERNAL -LT DISTRIBUTION SYSTEM, MAIN LT PANELS/SUB-BUILDING PANEL,LT CABLES, EARTHING Etc.)

REVAMP OF HT & LT ELECTRIFICATION SYSTEM

10	DESCRIPTION	UNIT	QTY	UNIT RATE(Rs)		TOTAL RATE(Rs)	
				SUPPLY	ERECTION	SUPPLY	ERECTION
	<p>Laying, testing and commissioning of following 1.1KV LT cables on trays built up trenches or through GI pipes or clamping to column wall or structure using GI spacers and saddles (at an interval of 300mm for cables of OD up to 25mm and 500mm for the cables) scope shall includes supply of these saddles, hardware and consumables. Cables laid in trays shall be dressed and tied with black nylon ropes in the horizontal portions and clamped using the GI saddles at every 750mm in the vertical portion. What ever cables are laid through GI pipes scopes shall also include sealing the mouth of the GI pipes. Where ever cables are to be laid in built up trenches work shall be includes opening the RCC slabs before laying and replacing them after laying. The work shall be carried out as per the specification and as per the directions of the Engineer-in-charge.</p>						
1)	3.5CX240Sq.mm Al .XLPE.Cable Armoured	Meters	4250				
2)	3.5CX185Sq.mm Al .XLPE.Cable Armoured	Meters	720				
3)	3.5CX150Sq.mm Al .XLPE.Cable Armoured	Meters	80				
4)	3.5CX120Sq.mm Al .XLPE.Cable Armoured	Meters	0				
5)	3.5CX95Sq.mm Al .XLPE.Cable Armoured	Meters	550				
6)	3.5CX70Sq.mm Al .XLPE.Cable Armoured	Meters	280				
7)	3.5CX50Sq.mm Al .XLPE.Cable Armoured	Meters	100				
8)	3.5CX35Sq.mm Al .XLPE.Cable Armoured	Meters	250				
9)	4CX25Sq.mm Al .XLPE.Cable Armoured	Meters	35				
10)	4CX16Sq.mm Al .XLPE.Cable Armoured	Meters	380				
11)	4CX70Sq.mm Cu.XLPE.Cable Armoured	Meters	50				
12)	4CX35Sq.mm Cu.XLPE.Cable Unarmoured	Meters	150				
13)	4CX16Sq.mm Cu.XLPE.Cable Armoured	Meters	50				
14)	4CX10Sq.mm Cu.XLPE.Cable Unarmoured	Meters	1050				
15)	4CX6Sq.mm Cu.XLPE.Cable Unarmoured	Meters	0				

ANNEXURE-B							
BILL OF QUANTITY							
(EXTERNAL -LT DISTRIBUTION SYSTEM, MAIN LT PANELS/SUB-BUILDING PANEL,LT CABLES, EARTHING Etc.)							
REVAMP OF HT & LT ELECTRIFICATION SYSTEM							
	DESCRIPTION	UNIT	QTY	UNIT RATE(Rs)		TOTAL RATE(Rs)	
				SUPPLY	ERECTION	SUPPLY	ERECTION
11	LT CABLE TERMINATIONS (including supply of Double Compression cable glands and lugs						
	<p>Following points to be noted for Cable Termination at Both Source and Destination ends of Each cable:-</p> <p>1)All the Cable Termination will be with Heat Shrinkable Sleeves only.</p> <p>2)HT Cables:- for 1 Run of HT cable ,we are mentioning 2No's of Termination Kits,i.e (1No of Termination Kits for Source and Destination each),Please Note that each Termination Kit must contain the Lugs and Glands for all the Three Phases .</p> <p>3)LT Cables:- for 1 Run of LT cable ,we are mentioning 2No's of Termination Kits,i.e (1No of Termination Kits for Source and Destination each),Please Note that each Termination Kit must contain the Lugs and Glands for all the Three Phases and Neutral .</p> <p>4) The Tenderer should consider all the above points and accordingly quote for each Cable Terminations.</p>						
	Termination of 1.1KV LT Cable for the following sizes. The termination shall include gland fixing and lugging with copper/aluminium lugs.						
1)	3.5CX240Sq.mm Al .XLPE.Cable Armoured	Each	62				
2)	3.5CX185Sq.mm Al .XLPE.Cable Armoured	Each	8				
3)	3.5CX150Sq.mm Al .XLPE.Cable Armoured	Each	8				
4)	3.5CX120Sq.mm Al .XLPE.Cable Armoured	Each	0				
5)	3.5CX95Sq.mm Al .XLPE.Cable Armoured	Each	26				
6)	3.5CX70Sq.mm Al .XLPE.Cable Armoured	Each	16				
7)	3.5CX50Sq.mm Al .XLPE.Cable Armoured	Each	4				
8)	3.5CX35Sq.mm Al .XLPE.Cable Armoured	Each	14				
9)	4CX25Sq.mm Al .XLPE.Cable Armoured	Each	2				
10)	4CX16Sq.mm Al .XLPE.Cable Armoured	Each	18				
11)	4CX70Sq.mm Cu.XLPE.Cable Armoured	Each	2				
12)	4CX35Sq.mm Cu.XLPE.Cable Armoured	Each	6				
13)	4CX16Sq.mm Cu.XLPE.Cable Armoured	Each	2				
14)	4CX10Sq.mm Cu.XLPE.Cable Unarmoured	Each	50				
15)	4CX6Sq.mm Cu.XLPE.Cable Armoured	Each	0				

ANNEXURE-B							
BILL OF QUANTITY							
(EXTERNAL -LT DISTRIBUTION SYSTEM, MAIN LT PANELS/SUB-BUILDING PANEL,LT CABLES, EARTHING Etc.)							
REVAMP OF HT & LT ELECTRIFICATION SYSTEM							
	DESCRIPTION	UNIT	QTY	UNIT RATE(Rs)		TOTAL RATE(Rs)	
				SUPPLY	ERECTION	SUPPLY	ERECTION
12.0	CONTROL CABLES :- (All below Mentioned Cables are Provided for Transformer and DG set Control Wiring)						
	Supply and Laying of 1.1KV grade copper (armoured/unarmoured) control cable of different size as required including Terminations.						
a)	16C x 2.5 sq.mm	Meters	250				
b)	8C X 2.5 sq mm	Meters	100				
c)	4C X 2.5 sq mm	Meters	250				
d)	2C x 2.5 sqmm	Meters	250				
	NOTE: CONTROL CABLES: Apart from above mentioned any other control cable required for Transformer and DG Sets shall be incorporated at Later Stage. (Subject to requirement at the time of execution or May not be usable)						

ANNEXURE-B							
BILL OF QUANTITY							
(EXTERNAL -LT DISTRIBUTION SYSTEM, MAIN LT PANELS/SUB-BUILDING PANEL,LT CABLES, EARTHING Etc.)							
REVAMP OF HT & LT ELECTRIFICATION SYSTEM							
	DESCRIPTION	UNIT	QTY	UNIT RATE(Rs)		TOTAL RATE(Rs)	
				SUPPLY	ERECTION	SUPPLY	ERECTION
13.0	BUS BAR TRUNKING SYSTEM						
a)	Supply, erection, testing and commissioning of 1250 Amps 50 kA 4P+E (IP 55) ALUMINIUM SANDWICH BUSDUCT RAISER . The Busbar Trunking System shall be of sandwich construction, non-ventilated and natural cooled design. It shall be possible to mount the Busbar Trunking System in any orientation without affecting the current rating. The busbars should be made of high conductivity electrical grade Aluminum (60%). The Purity of Aluminum conductor should not be less than 99.6%, the joint area should be Tin plated. Inside should be Class-F, each layer shall have withstand breakdown voltage of minimum 6kv. The insulation material used shall be of minimum class of (155 deg.c) with UL Certified. Housing shall be made of 1.6mm electro-galvanized sheet steel, epoxy powder coated with RAL7032 shade, indoor busduct must be IP-54 / IP-55 & Outdoor busduct should be IP-65 / IP-66 with canopy. This includes bends/flangers/connectors etc as per the requirements to work done as per the site conditions.	Meters	30				
14.0	CONVENTIONAL EARTHING SYSTEM : (EARTH FLATS)						
1	Supply, Laying and fixing of 100 x 10mm GI flat	Meters	100				
2	Supply, Laying and fixing of 75 x 6mm CU flat	Meters	100				
3	Supply, Laying and fixing of 75 x 6mm GI flat	Meters	100				
4	Supply, Laying and fixing of 50 x 6mm GI flat	Meters	1700				
5	Supply, Laying and fixing of 30 x 6mm GI flat	Meters	650				
6	Supply, Laying and fixing of 25 x 6mm GI flat	Meters	600				
7	8 SWG wire(for DB's and etc.)	Meters	1000				

ANNEXURE-B							
BILL OF QUANTITY							
(EXTERNAL -LT DISTRIBUTION SYSTEM, MAIN LT PANELS/SUB-BUILDING PANEL,LT CABLES, EARTHING Etc.)							
REVAMP OF HT & LT ELECTRIFICATION SYSTEM							
	DESCRIPTION	UNIT	QTY	UNIT RATE(Rs)		TOTAL RATE(Rs)	
				SUPPLY	ERECTION	SUPPLY	ERECTION
15	EARTH PITS :						
a)	Seperate earth pit for the BODY with 100mm dia "B" class 2.5 long CI pipe with providing GI funnel covered with mesh of suitable size enclosed in a CC chamber of 450mm X 450mm X 3mm with suitable reinforced CI cover duly providing staggered holes of 16 nos of 12mm dia to the earth electrode filling salt and charcoal around 150mm from the bottom of the pipe to the bottom of CC chamber. The connections from the electrode through GI strip of 40 X 6mm length provided with suitable size of 14 nos holes with GI washers, nuts, bolts and all labour charges etc., complete. (For DG Sets,UPS,STABLIZER & LT panels Body)	Each	34				
b)	Providing of earth station with copper plate Electrodes of 600mm X 600mm X 1.5mm with Connecting Wires are conforming to NBC - 2016,UL as well as Several National/International Standards.These maintenance free Plate Electrode offers Long Life , Electrode as well as Conductors are made of high Conductivity ,Non Corrosive Copper,Exothermically Welded to Copper conductor in order to offer Maximum Life ,Two Meter Long Two Rons of Connecting Wires Ensure deep burying of the Plates in Soil complete with excavation supply ,fixing and Constructing brick chamber with cover plate having locking arrangements complete as per NBC-2016. Copper Plate need to be filled with 50Kgs of carbon based Low resistivity (0.0041 ohm per Mtr) Earth Enhancing compound as per IEC- 62561-7.The cost and coveyance of all materials, labour charges etc., complete for finished item of work. (For DG Sets Neutral and UPS Neutral)	Each	12				
	Note: 1) All Earth Pit Chambers need to be Constructed with 100mm Solid Blocks. All Earth Pit Chambers to be Numbered and Painted with Reputed make Paint. 2) All Civil Works Related to Earth Pits are under the Scope of Electrical Contractor only.						
16	Supply&installing following size of Perforated G.I. Powder coated cable trays bends joined with connectors, suspended from the ceiling/ wall with including bolts & nuts, painting etc as required.						
1	600 mm width X 62.5 mm depth X 2.0 mm thickness	Meters	600				
2	450 mm width X 62.5 mm depth X 2.0 mm thickness	Meters	150				
3	300 mm width X 62.5 mm depth X 2.0 mm thickness	Meters	250				
4	150 mm width X 62.5 mm depth X 2.0 mm thickness	Meters	300				
SUB TOTAL:							
GRAND TOTAL (SUPPLY + INSTALLATION):							
NOTE: CABLE QUANTITY CONSIDERED APPROXIMATELY. IT SHOULD BE VARIED BASED UPON THE SITE CONDITIONS/EQUIPMENT LOCATIONS AND AS PER THE ROUTING AT SITE.(+/-10%)							



**ANNEXURE-C
BILL OF QUANTITY
(DIESEL GENERATING SETS)**

REVAMP OF HT & LT ELECTRIFICATION SYSTEM

S.No	Description	Units	Qty	Unit Rate		Total	
				Supply Rs	Erection Rs	Supply Rs	Erection Rs
1	DIESEL GENERATOR (DG SETS)						
	Supply, erection, testing and commissioning of Engine Kirloskar / Cater Pillar / Cummins similar to Cater Pillar water cooled suitable for generating set application, developing the requisite BHP at 1500 RPM complete with radiator, Air cleaner, Lub oil Filter, Silencer, 12/24 Volts electric starting system comprising of starter, Battery charging unit, Instrument panel consisting of starting switch, Battery charging ammeter, Lub oil pressure gauge etc. The Engine shall generally conform to B.S. 5514 or IS 10002 : 1981.						
	Alternator Kirloskar/ Cater Pillar/ Cummins self excited and self regulated alternator rated 415 volts X 1/3 phase X 2/4 wire 50 cycles per second 1500 RPM. Under normal conditions the voltage regulation will be +/- 5% (for static type) and +/- 2.5% (for brushless type) The alternator shall be of class B/F Insulation and designed to withstand tropical conditions. The alternator shall generally conform to IS 4722 - 1968.						
	The erection of DG set includes total set with fuel piping, exhaust piping and interconnecting cabling between DG alternator and MainLT Panel						
A	500KVA D.G SET						
1.1	The Tenderer/Bidder shall give the warranty of 5 Years for the DG SETs and the price for the same needs to be included in the quoted price by the Bidder.	Each					
1.2	The Tenderer/Bidder shall quote for the Comprehensive AMC for another 5 years post expiry of warranty for DG SETs as per the OEM Checklist and Operating Manual. The Rate must be quoted for Each year.						
	Amc Rate for 1st Year after expiry of Warranty of 5 years:	Each	1				
	Amc Rate for 2nd Year after expiry of Warranty of 5 years:	Each	1				
	Amc Rate for 3rd Year after expiry of Warranty of 5 years:	Each	1				
	Amc Rate for 4th Year after expiry of Warranty of 5 years:	Each	1				
	Amc Rate for 5th Year after expiry of Warranty of 5 years:	Each	1				



**ANNEXURE-C
BILL OF QUANTITY
(DIESEL GENERATING SETS)**

REVAMP OF HT & LT ELECTRIFICATION SYSTEM

S.No	Description	Units	Qty	Unit Rate		Total	
				Supply Rs	Erection Rs	Supply Rs	Erection Rs
B	320KVA D.G SET						
1.1	The Tenderer/Bidder shall give the warranty of 5 Years for the DG SETs and the price for the same need to be quoted by the Tenderer/Bidder.	Nos	1				
1.2	The Tenderer/Bidder shall quote for the Comprehensive AMC for another 5 years post expiry of warranty for DG SETs as per the OEM Checklist and Operating Manual. The Rate must be quoted for Each year.						
	Amc Rate for 1st Year after expiry of Warranty of 5 years:	Each	1				
	Amc Rate for 2nd Year after expiry of Warranty of 5 years:	Each	1				
	Amc Rate for 3rd Year after expiry of Warranty of 5 years:	Each	1				
	Amc Rate for 4th Year after expiry of Warranty of 5 years:	Each	1				
	Amc Rate for 5th Year after expiry of Warranty of 5 years:	Each	1				
2	Synchronizing Panel (Switchgear Makes : L&T/System Control/Schneider/Legrand/ABB)						
	Supply, erection, testing and commissioning of Synchronization Panel. This includes the C channels required to mount the panel or floor mounted with anchor fasteners.	Lot	1				
A)	INCOMING FEEDERS: 1 Nos.(Each Consistiong of the Following)						
i	415V , 800A, 4P, ACB of 50KA with O/C, S/C, EF protections with microprocessor based releases with RS485 communication port. 1 Nos.						
	ON,OFF, TRIP Indication Lamps - 1 Sets.						
	6A control MCB - 3 Nos. 1 Sets.						
	LED Type R - Y - B Phase Indicating Lamps - 1 Sets.						
	Multi Function Meter (MFM) - 1Nos.						
	800/5A, CL-1, 15VA, Tape wound CT's - 1Sets.						
	Woodward Easygen Relay for 500KVA DG Set.-1Sets.						
B)	INCOMING FEEDERS: 1 Nos.(Each Consistiong of the Following)						
i	415V , 630A, 4P, ACB of 50KA with O/C, S/C, EF protections with microprocessor based releases with RS485 communication port. 1 Nos.						
	ON,OFF, TRIP Indication Lamps - 1 Sets.						
	6A control MCB - 3 Nos. 1 Sets.						
	LED Type R - Y - B Phase Indicating Lamps - 1 Sets.						
	Multi Function Meter (MFM) - 1Nos.						
	630/5A, CL-1, 15VA, Tape wound CT's - 1Sets.						
	Woodward Easygen Relay for 320KVA DG Set.-1Sets.						



**ANNEXURE-C
BILL OF QUANTITY
(DIESEL GENERATING SETS)**

REVAMP OF HT & LT ELECTRIFICATION SYSTEM

S.No	Description	Units	Qty	Unit Rate		Total	
				Supply Rs	Erection Rs	Supply Rs	Erection Rs
C)	OUTGOING FEEDER: 1 No. (Each consisting of the following)						
i	415V , 1250A, 4P, ACB (EDO) of 50KA with O/C, S/C, EF protections with microprocessor based releases with RS485. 1No.						
	ON,OFF, TRIP Indication Lamps - 1 No.						
	6A control MCB - 3 Nos. 1 Set.						
	LED Type R - Y - B Phase Indicating Lamps - 1 Set						
	Multi Function Meter (MFM) - 1No.						
	1250/5A, CL-1, 15VA, Tape wound CT's -3Nos 1 Set.						
d)	BUSBAR RATING						
	1250A, 415V, 50Hz, 50KA ,4W, AL BUS.						
				TOTAL			
				GRAND TOTAL			

S.No	Description	Unit	Qty.	Unit Rate		Total	
				Supply Rs	Erection Rs	Supply Rs	Erection Rs
	LIGHTNING PROTECTION SYSTEM CONFIRMING TO IS 3043, NBC 2016 AND IS/IEC 62305-3"						
A	AIR TERMINATION SYSTEM						
1	Supply and installation of 8mm Aluminum Solid Round Conductor for building terrace as a horizontal air terminal as per required LPL and should be tested for electrical resistivity, Tensile strength, Yield strength, % elongation, salt spray & humidity test to meet the requirements of IS/IEC 62305 and IEC 62561-1&2. CAPE Type: SRC 8 – AL (Article No. 400 008)	Meters	500.00				
2	Supply and installation of Stainless Steel Metal roof conducto holder or roof seam clamp suitable for fixing 8mm dia conductor over the metal sheet and should be tested for electrical resistivity, Mechanical strength, salt spray & humidity test to meet the requirement of IS/IEC - 62305 and IEC 62561-1&2. CAPE Type: MRCH 8- 10 (Article No. 400 204) or CAPE Type: RSC 20 (Article No. 402 409)	Meters	200.00				
3	Supply and installation of Parapet conductor holder for fixing 8mm Aluminium conductor on the parapet surface to meet the requirement of IS/IEC - 62305 CAPE Type: PCH 8-10 (Article No: 400 202)	Each	200.00				
4	Supply and installation of Terrace Conductor Holder for Aluminium Conductor above concrete Terrace fixed with white cement to meet the requirements of IS/IEC 62305. CAPE Type: CFRCH 8 (Article No: 400 201)	Each	30.00				
5	Supply of 3M Adhesion tape to meet the requirements of IS/IEC 62561- 1&2	Each	25.00				
6	Supply and installation of Stainless Steel cross connector suitable for 8mm dia and should be tested for electrical resistivity, Mechanical strength, salt spray & humidity test to meet the requirement of IS/IEC - 62305 and IEC 62561-1&2. CAPE Type: CCSS 8- 10 (Article No. 400 206)	Each	30.00				
7	Supply and Installation of Vertical Air Terminal 2mtr with mounting accessories on metal sheet, selected as per angle of protection chart to meet the requirement of IS/IEC 62305 .Tested for Electrical ,Mechanical and Chemical as per IEC 62561. VAT 2 with mounting accessories on metal sheet (includes - VAT 2 + interception tip + Stand + connecting point) to meet the requirements for IS/IEC 62305. CAPE Type: VATM2 (Article No. 403 420)	Each	12.00				
8	Supply and installation of 4 metre Vertical Airterminal of dia 16-10 mm with Complete Support of Concrete Base(370mm dia) and Air Terminal Conductor joining Clip selected as per angle of protection chart to meet the requirement of IS/IEC 62305 .Tested for Electrical ,Mechanical and Chemical as per IEC 62561. VAT 4 with mounting accessories on flat surface (includes - VAT 4 + interception tip + Base support stone + air terminal joining clip) CAPE Type: VATF4 (Article No. 401 440)	Each	2.00				

S.No	Description	Unit	Qty.	Unit Rate		Total	
				Supply Rs	Erection Rs	Supply Rs	Erection Rs
9	Supply and installation of Expansion Piece with connector to compensate the expansion and contraction of Solid Round Al. Conductor during temperature variations to be provided on conductors length over 20 meters with Expansion Piece Connector for to connect Solid Round Al. Conductor at both ends to meet the requirements for IS/IEC 62305 CAPE Type: EPC 8 (Article No. 401 209)	Each	20.00				
10	Supply and installation of Aluminium Straight conductor connector for connecting 8mm Aluminium conductor and should be tested for electrical resistivity & Mechanical strength to meet the requirements for IS/IEC 62305 and IEC 62561-1&2. CAPE Type: CJ 8 (Article No. 401 211)	Each	20.00				
11	Supply and installation of Bridging cable with suitable connector to meet the requirement of IS/IEC 62305 .Tested for Electrical ,Mechanical and Chemical as per IEC 62561. CAPE Type: BCC 500 (Article No. 400 212)	Each	12.00				
II	DOWN CONDUCTOR SYSTEM						
12	Supply and installation of 8mm Aluminum Solid Round Conductor for down conductor as per required LPL and should be tested for electrical resistivity, Tensile strength, Yield strength, % elongation, salt spray & humidity test to meet the requirements of IS/IEC 62305 and IEC 62561-1&2. CAPE Type: SRC 8 – AL (Article No. 400 008)	Meters	200.00				
13	Supply and installation of Metal roof conductor holder for fixing Aluminium conductor on the metal sheet/surface to meet the requirement of IS/IEC - 62305 CAPE Type: MRCH 8-10 (Article No: 400 204)	Each	30.00				
14	Supply and installation of conductor holder for fixing the (wall) 8 mm Aluminium down conductor to meet the requirement of IS/IEC - 62305 CAPE Type: CH 8-10 (Article No: 400 213)	Each	30.00				
15	Supply and installation of Lightning counter - LCD screen shows the number of lightning strikes, hour and date of lightning events Buttons enable TIME/DATE setting and log viewing. Replaceable battery, working life minimum five years, Complies with IEC/EN 62561-6. CAPE Type No: PRO IEC Basic (Article No. 130 520)	Each	1.00				
16	Supply and installation of Test Joint with enclosure suitable connector for 8 mm round Al. conductor & 10 mm round copper coated conductor to meet the requirement of IS/IEC - 62305. CAPE Type No: TJRRE (Article No. 401 215)	Each	12.00				
B	Earthing System						
17	Supply and installation of 10 mm copper bonded Solid Steel Round Conductor with minimum coating thickness 70µm for Type-B Earthing and should be tested for Tensile strength, Electrical Resistance, salt mist, Bend & Adhesion to meet the requirements of IS/ IEC 62305 and IEC 62561-1&2. CAPE Type: SRC 10 – CU (Article No. 400 010)	Meters	550.00				
18	Supply and Installation of Exothermic Welding - Including welding mould and other accessories for welding confirms the requirements of IEEE 837:2014 : T-Joint, X-Joint, L-Joint , Straight joint CAPE Article: 400 880	Each	30.00				



ANNEXURE-D

BILL OF QUANTITY

(LIGHTNING PROTECTION SYSTEM)

REVAMP OF HT & LT ELECTRIFICATION SYSTEM

S.No	Description	Unit	Qty.	Unit Rate		Total	
				Supply Rs	Erection Rs	Supply Rs	Erection Rs
19	Supply and installation of Straight Connector for interconnectig 10mm copper bonded steel round conductor to meet the requirement for IS/IEC - 62305. Cape Type :SC 8-10 (Article No.400 210)	Each	10.00				
20	Providing Earth pits for the body or Neutral with 17.2mm dia 250microns UL listed copper bonded high tensile low carbon steel rod of 3mtr long having manufacturer name embossed on the Electrode.Providing CC chamber of 300 x 300 x 3mm with suitable reinforced CI Lid/Cover.Earth Electrode need to be filled with 50Kgs of carbon based Low resistivity (0.0041 ohm per Mtr) Earth Enhancing compound as per IEC- 62561-7.The connections from the Electrode through 25 x 6mm Copper strip or 40 x 6 GI Strip with suitable size of tinned brass two way Universal clamps etc as per the requirement to complete the work. (FOR LIGHTNING PROTECTION SYSTEM)	Each	6				
	Note: All Earth Pit Chambers need to be Constructed with 100mm Solid Blocks. All Earth Pit Chambers to be Numbered and Painted with Reputed make Paint.						
TOTAL							
GRAND TOTAL							



ANNEXURE-E

BILL OF QUANTITY

(VTPN DB)

REVAMP OF HT & LT ELECTRIFICATION SYSTEM

	DESCRIPTION	UNIT	QTY	UNIT RATE(Rs)		TOTAL RATE(Rs)	
				SUPPLY	ERECTION	SUPPLY	ERECTION
				(Rs)	(Rs)	(Rs)	(Rs)
1	(EFC BUILDING) +(PHASE SEGREGATED DB IP 43 ONLY)						
I	VTPNDB - 8-WAY						
A)	INCOMER	Each	3				
	415V ,160A, TPN, MCCB's of 25KA-Breaking Capacity with O/C, S/C, protections, Thermal Based Releases.						
B)	OUTGOING FEEDERS						
i	230V ,10/20A, SP, 10KA - MCB's - 24Nos						
C)	BUSBAR RATINGS						
	160A, 415V, 50Hz, 25KA ,4W, AL BUS.						
II	TPNDB - 8-WAY						
A)	INCOMER	Each	5				
	415V ,125A, TPN, MCCB's of 25KA-Breaking Capacity with O/C, S/C, protections, Thermal Based Releases.						
B)	OUTGOING FEEDERS						
i	230V ,10/20A, SP, 10KA - MCB's - 24Nos						
C)	BUSBAR RATINGS						
	125A, 415V, 50Hz, 25KA ,4W, AL BUS.						
III	TPNDB - 8-WAY						
A)	INCOMER	Each	6				
	415V ,100A, TPN, MCCB's of 25KA-Breaking Capacity with O/C, S/C, protections, Thermal Based Releases.						
B)	OUTGOING FEEDERS						
i	230V ,10/20A, SP, 10KA - MCB's - 24Nos						
C)	BUSBAR RATINGS						
	100A, 415V, 50Hz, 25KA ,4W, AL BUS.						



ANNEXURE-E

BILL OF QUANTITY

(VTPN DB)

REVAMP OF HT & LT ELECTRIFICATION SYSTEM

	DESCRIPTION	UNIT	QTY	UNIT RATE(Rs)		TOTAL RATE(Rs)	
				SUPPLY	ERECTION	SUPPLY	ERECTION
				(Rs)	(Rs)	(Rs)	(Rs)
2	(ADMIN BUILDING) +(PHASE SEGREGATED DB IP 43 ONLY)						
I	VTPNDB - 8-WAY						
A)	INCOMER						
	415V ,160A, TPN, MCCB's of 25KA-Breaking Capacity with O/C, S/C, protections, Thermal Based Releases.	Each	10				
B)	OUTGOING FEEDERS						
i	230V ,10/20A, SP, 10KA - MCB's - 24Nos						
C)	BUSBAR RATINGS						
	160A, 415V, 50Hz, 25KA ,4W, AL BUS.						
II	VTPNDB - 8-WAY						
A)	INCOMER						
	415V ,125A, TPN, MCCB's of 25KA-Breaking Capacity with O/C, S/C, protections, Thermal Based Releases.	Each	1				
B)	OUTGOING FEEDERS						
i	230V ,10/20A, SP, 10KA - MCB's - 24Nos						
C)	BUSBAR RATINGS						
	125A, 415V, 50Hz, 25KA ,4W, AL BUS.						
III	VTPNDB - 8-WAY						
A)	INCOMER						
	415V ,100A, TPN, MCCB's of 25KA-Breaking Capacity with O/C, S/C, protections, Thermal Based Releases.	Each	1				
B)	OUTGOING FEEDERS						
i	230V ,10/20A, SP, 10KA - MCB's - 24Nos						
C)	BUSBAR RATINGS						
	100A, 415V, 50Hz, 25KA ,4W, AL BUS.						
				TOTAL			
				GRAND TOTAL			



ANNEXURE-F

BILL OF QUANTITY

(CIVIL WORKS RELATED TO THE ELECTRICAL SERVICES FOR BOTH HT AND LT ELECTRICAL SYSTEM)

REVAMP OF HT & LT ELECTRIFICATION SYSTEM

	DESCRIPTION	UNIT	QTY	UNIT RATE(Rs)		TOTAL RATE(Rs)	
				SUPPLY	ERECTION	SUPPLY	ERECTION
				(Rs)	(Rs)	(Rs)	(Rs)
1.0	Civil Works related to the Electrical Services for both HT and LT Electrical System.						
	<p>Civil works related to Electrical Services Executions: -</p> <p>1)The Cable laying inside the cable Trench, Digging, Excavation, refilling including sand laying ,Brick laying for complete length/Width of Trench is under the scope of Electrical Contractor .</p> <p>2)Wherever there is a road crossing while laying the cable, proper concrete Slab formation should be done on top of the Road Crossing as per the site condition for the vehicle movement by the Electrical contractor.</p> <p>3)Any core Cutting/Opening of holes inside the building for Cable Entry and then reclosing of the same core is under the scope of Electrical Contractor.</p> <p>4)Cable Trench:-The contractor has to visit the site and visually inspect the Existing Cable trench within the electrical Room and Requirement of any extension of the Cable Trench for cable laying has to be studied by the Electrical Contractor and accordingly cable trench routing has to be finalized and any modification including suitable steel structure for cable installation to be established at site in presence of Project incharge at Site and the Electrical contractor need to quote accordingly .</p> <p>5)The existing earth Pit location need to be rechecked and the existing pits near the new transformer area should be demolished/remodified and new earth pits has to be laid as per the Transformer switchyard area as per the Site condition.</p> <p>6)The Civil works related to the Foundation of the Transformers and DG sets as per the approved Drawings has been considered under the scope of Electrical Contractor.</p> <p>7)The civil works related to Fencing of Transformer yard area and, its Grouting, Gate/Door of 2Meter ,Pad Lock and complete fencing has to be provided by the Tenderer/Electrical Contractor only.all the aforementioned activities are in the scope of the Electrical Contractor only.</p> <p>8)The Painting of the existing Cable Trays and the Painting of the Electrical Room have been also kept under the scope of the Electrical Contractor.</p>						
1)	Excavation, refilling, including Laying of 200mm Dia HUME pipes at a depth of 750mm from the ground level which includes sand protection for outdoor HT cable laying .	Cu.M.	20				
2)	Excavation, refilling earth flats [maximum depth 300mm for Earth Flats Running]	Cu.M.	20				



ANNEXURE-F

BILL OF QUANTITY

**(CIVIL WORKS RELATED TO THE ELECTRICAL SERVICES FOR
BOTH HT AND LT ELECTRICAL SYSTEM)**

REVAMP OF HT & LT ELECTRIFICATION SYSTEM

	DESCRIPTION	UNIT	QTY	UNIT RATE(Rs)		TOTAL RATE(Rs)	
				SUPPLY	ERECTION	SUPPLY	ERECTION
				(Rs)	(Rs)	(Rs)	(Rs)
3)	Concrete foundation for the Street Light Poles/Misc works.	Cu.M.	5				
4)	Concrete foundations for the Transformer , DG sets , ACB , VCB , METERING KIOSK and Double Pole Structure.	Cu.M.	10				
5)	Supply and Fixing of Fencing with Chain Links of 2.2M Height for the DG set two side and Transformer Yard Three Sides with all necessary requirements like Nuts,bolts,Washers and Rods as per requirement.	Meter	50				
6)	Painting of the Existing Cable Trays as per the Site conditions.	Sq.M.	600				
7)	Painting of the Panel Rooms walls with 2 Cores of Epoxy with Putti and Final shade of Asian Paint and giving a final finishing touch as per the Site conditions.	Sq.M.	600				
NOTE: CIVIL WORKS RELATED TO ELECTRICAL (Subject to requirement at the time of execution or May not be usable)							
	SUB TOTAL						
	GRAND TOTAL						



ANNEXURE-G

BILL OF QUANTITY

(BUYBACK OF OLD ITEMS)

REVAMP OF HT & LT ELECTRIFICATION SYSTEM

1	11KV SP Structure with all Supporting accessories ,Cables, Insulators, Jumpers, HG Fuses Etc.,,	1 Set	<p>Note: Contractor's responsibility to check all the listed items and as per site survey and cable length measurements and submit the quotation accordingly.</p>
2	CT/PT Meter +TVM	1no.	
3	11KV Oil Switch 400A SFU Incomer with 200A outgoing SFUs with complete supporting accessories	1no.	
4	a) HT Cable(3Cx35Sqmm.) (From Switch yard to HT room) b) HT Cable (From HT room to Transformers)	As per Site Measurement	



ANNEXURE-G
BILL OF QUANTITY
(BUYBACK OF OLD ITEMS)

REVAMP OF HT & LT ELECTRIFICATION SYSTEM

TRANSFORMERS< PANELS&SUB-PANELS

Sno.	Item Discription	Quantity	Remarks/Note
1	250KVA Oil Type Transformer Make ETE	2nos.	Note: Contractor's responsibility to check all the listed items and as per site survery and cable length measurments and submit the quotation accordingly.
2	Main Bypass Panel LT 400A TP MCCB-4nos.	1no.	
3	Main LT Panel with 3 Incomers of 400A MCCB with 2no. Of 400A BusCoupler with 22 to 26 nos. of SDFs for Outgoings	1no.	
4	MDB-1&MDB-2-EFC Building MDB-1&MDB-2-ADMIN Building AND SUB-PANELS (Refer Existing Distribution SLD For Reference)	8nos.	
5	VTPNDBs/DBs (Floor wise/Area wise) Existing Good Condition VTPNDs/DBs can be utilize as per the requirments-Contractor shall survery and submit for Verification and to be replace accordngly		
6	Capacitor Bank	4nos.	
7	a) LT Cables (From LT Panel to Building Panels&Sub-Panels)	As per Site Measurement	



ANNEXURE-G

BILL OF QUANTITY

(BUYBACK OF OLD ITEMS)

REVAMP OF HT & LT ELECTRIFICATION SYSTEM

DG SETs and DG Panels

Sno.	Item Discription	Quantity	Remarks/Note
1	200KVA-1 no.(Make Greves) 250KVA-2nos(Make Cummins)	3nos.	Note: Contractor's responsibility to check all the listed items and as per site survery and cable length measurments and submit the quotation accordingly.
2	DG Panels	2nos.	
3	DG Fuel Tanks	3nos.	
4	a) LT Cables (From DG Sets to Panels)	As per Site Measurement	
TOTAL LUMPSUM BUYBACK AMOUNT (INCL. OF GST):			