DEVELOPMENT OF DISTRIBUTION INFRASTRUCTURE AT AHMEDABAD EAST of GUJARAT UNDER REVAMPED REFORMS-BASED AND RESULTS-LINKED, DISTRIBUTION SECTOR SCHEME

Bill of Quantity

Bidder's Name & Address:

A (I) Augmentation, Renovation and Modernisation of existing Distribution Transformer

Line Item	Description	Unit	Qty
A (I)	**Augmentation & Renovation of 11/0.4 kV Distribution**		
1.00	**Augmentation of Distribution Transformer Substation (ASSUMING 25 YEARS OF LIFE AND 10 YEARS IN SERVICE) using New Distribution Transformer (three star) as per technical specifications, approved drawings and scope of the work. Replaced material to be deposited in Employer's store:**		
1.01	New 200 KVA (11/0.4 kV) Aluminium wound DTR (Replacing 100 KVA old DTR),	No	2

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A (II) Crossing Removal (Safety)

Line Item No.	Description of Goods	Unit	Quantity
1.00	**Cables:**		
1.01	Supply of 11 kV,(E),XLPE insulated Aluminium Conductor, Armoured cable as per enclosed specification 3 core 185 sq. mm. as perenclosed specification including rates for approval of local Authorities for laying of cable.(Make as approved by UGVCL) Laying of 11 KV (E) XLPE insulated aluminium armoured cable in ground up to 1200 mm deep, 500 mm wide cable trench providing sand cushioning before and after laying cable and covering with half round Hume pipe and refilling the trench.(rate shall include cost of excavation of trench) as per technical specification, approved drawings and scope of work.	Mtr	1000
1.02	Providing of HDPE ducts confirming to IS:4984 having dia OD 110 mm, 6kg/cm2, 11.63 kg/6 RMT at a minimum depth of 1200mm below the road surface by pushthrough method by drilling the road with HDD machine without breaking the road surface for laying of cable for internal road crossing for enclosing HT/LT XLPE insulated aluminum armoured cable up to 240/185 sqmm through the duct as per the instructions of EIC as per technical specification, approved drawings and scope of work.	Mtr	0
2.00	**Pre-fabricated steel items like V cross arm, top clamp, DC cross arm, bracket, clamps, cross bracings, bracings, strain plate, guarding channels, back clamp, transformer mounting structure etc made of MS Channels (100x50x6mm), MS angle (65x65x6mm), MS flats (65x8mm) of given sizes for over head structures as per technical specification, approved drawings and scope of work.**	MT	0.50
3.00	**MS Nuts, Bolts with Washers as per technical specification, approved drawings and scope of work.**	MT	0.10
4.00	**Indoor application: HT push on/heat shrink type end termination preferably for at switchgear end boxes, transformer(PAD/Pole mounted) for 11 kV XLPE Aluminium Conductor Armoured cable as specified with connection of leads including cutting,stripping of cable, insulations,providing compression type terminals,crimping of lugs with suitable crimping tool, as per technical specification, approved drawings and scope of work.**		
4.01	3Cx185 mm 2 11 KV XLPE	No	0
5.00	**Outdoor application: HT push on/heat shrink type end termination preferably for at switchgear end boxes, transformer(PAD/Pole mounted) for 11 kV XLPE Aluminium Conductor Armoured cable as specified with connection of leads including cutting,stripping of cable, insulations,providing compression type terminals,crimping of lugs with suitable crimping tool, as per technical specification, approved drawings and scope of work.**		
5.01	3Cx185 mm 2 11 KV XLPE	No	8
6.00	**Straight Joint: HT push on/heat shrink type straight joint preferably for 11 kV XLPE Aluminium Conductor Armoured cable as specified with connection of leads including cutting,stripping of cable, insulations,providing compression type terminals,crimping of lugs with suitable crimping tool.as per technical specification, approved drawings and scope of work.**		
6.01	3Cx185 mm 2 11 KV XLPE	No	2
7.00	**Earthing arrangement as per technical specificatons, approved drawings and scope of work.**		
7.01	Supplying & erecting earth pit of minimum bore dia. 150 mm size approved make safe Earthing Electrode consisting Pipe in pipe Technology as per IS 3043-1987 made of corrosion free G.I. Pipes having Outer pipe dia of 50 mm having 80-200 Micron galvanising connections, terminal dia of 12 mm with constant ohmic value surrounded by highly conductive compound with high charge dissipation with civil works ofearthing chamber. For Electrical installation covering Transformer neutrals,HT & LT switchgears for independent earthing in normal soil, Length of Pipe 3 mtrs.Backfilling compound 2 bagsof 25 Kg each	No	8
7.02	Supply of earthing conductor 38 x 3 G.I. strip for pole mounted transformer and upto FSP,RMU as well as connection to be made to the earth pit. Rates inclusive of hot dipped hardwares.	Mtr	64
8.00	**Providing 11kV Double Pole Structure with AB Switch 12kV, 600A, 25kA for 3sec, 3-ph, 3 Pin type, Vertical Mounting type (as desired by DISCOM), Gang Operated, AB Switch along with Support Insulators, Base Channel down Pipe, Arcing Horns etc. complete as per technical specifications, scope of works and approved drawings on 8 Mtr PSC Poles as per technical specification, approved drawings and scope of work.**	No	0
9.00	**Supply and installation of clamps made from 50*6 mm GI Flat (Min. wieght of flat 1.6 kG per Set) for fitting for 110 mm GI / HDPE pipe above ground with pole (with cost of nuts & bolts) Cable Laying above ground in air for termination of cable on pole withas per Engineer In Charge**	Set	16
10.00	**Provinding of 100 mm Dia heavy duty GI pipe with clamping for the protection for the cable above the ground**	Mtr	24
11.00	**Stay Set (Galvanised) with 50x8 mm stay clamp, stay insulator (2 Nos.), anchor plate (200x200x6), nut bolts, 2 Nos turn-buckles, 1.8 m long, 16 mm diameter solid GS stay rod & 7/3.15 mm dia GI stranded wire complete as per technical specification, approved drawings and scope of work.**	Set	8
12.00	**Insulator and hardware as per technical specification, approved drawings and scope of work.**		

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A (II) Crossing Removal (Safety)

Line Item No.	Description of Goods	Unit	Quantity
12.01	11 KV Polymer (Composite) Disc insulator 45 KN along with suitable hardware fittings	Set	24
12.02	11 KV Polymer (Composite) Pin Insulators having GI PIN	Set	8
13.00	**Cable Route Marker: Providing RCC cable Route marker as per drawing duly marked with "DANGER" Mark, "UGVCL POWER CABLE" and Arrow of route of cable.**	No	20

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Bidder's Name & Address:

A (III) Overhead to Underground Electrification Network

Line Item No.	Description of Goods	Unit	Quantity
1.00	**RMU : Supply of SF6 gas insulated, 630Amp both sides extensible, SCADA compatible Ring Mains Units (RMU) as per technical specification, approved drawings and scope of work.**		
1.01	2 Isolator (2-Way)	No	1
1.02	1 Circuit Breaker 1 Isolator (2-Way)	No	
1.03	3 Isolator (3-Way)	No	
1.04	1 Circuit Breaker 2 Isolator (3-Way)	No	652
1.05	2 Circuit Breaker 1 Isolator (3-Way)	No	
1.06	1 Circuit Breaker 3 Isolator (4-Way)	No	149
1.07	4 Isolator (4-Way)	No	
1.08	2 Circuit Breaker 2 Isolator (4-Way)	No	
1.09	1 Circuit Breaker 4 Isolator (5-Way)	No	30
1.10	1 Circuit Breaker 5 Isolator (6-Way)	No	
2.00	**Transformer: Supply of 11/0.433 KV, Outdoor Transformers with HV/LV cable end boxes and CTs commissioned at LV end boxes for the following ratings [Transformer shall be suitable for pole mounting upto 315 kVA and Plinth mounting for 500 kVA (including plinth structure)] as per standard technical specifications.**		
2.01	100 kVA, Alunium Wound CRGO / Amorphous Core	No	534
2.02	200 kVA, Alunium Wound CRGO / Amorphous Core	No	139
2.03	315 kVA, Copper Wound CRGO / Amorphous Core	No	20
2.04	500 kVA, Copper Wound CRGO / Amorphous Core	No	53
3.00	**Cables:**		
3.01	Supply of 11 kV,(E),XLPE insulated Aluminium Conductor, Armoured cable as per enclosed specification 3 core 240 sq. mm. as perenclosed specification including rates for approval of local Authorities for laying of cable.(Make as approved by UGVCL) as per technical specification, approved drawings and scope of work.	Mtr	212130
3.02	Supply of 11 kV,(E),XLPE insulated Aluminium Conductor, Armoured cable as per enclosed specification 3 core 185 sq. mm. as perenclosed specification including rates for approval of local Authorities for laying of cable.(Make as approved by UGVCL) as per technical specification, approved drawings and scope of work.	Mtr	
3.03	Supply of 11 kV,(E),XLPE insulated Aluminium Conductor, Armoured cable as per enclosed specification 3 core 70 sq. mm. for TC termination (RMU to TC) as per technical specification, approved drawings and scope of work.	Mtr	14980
3.04	Providing of HDPE ducts confirming to IS:4984 having dia OD 110 mm, 6kg/cm2, 11.63 kg/6 RMT at a minimum depth of 1200mm below the road surface by pushthrough method by drilling the road with HDD machine without breaking the road surface for laying of cable for internal road crossing for enclosing HT/LT XLPE insulated aluminum armoured cable up to 240/185 sqmm through the duct as per the instructions of EIC as per technical specification, approved drawings and scope of work.	Mtr	84860
4.00	**Indoor application: HT push on/heat shrink type end termination preferably for at switchgear end boxes, transformer(PAD/Pole mounted) for 11 kV XLPE Aluminium Conductor Armoured cable as specified with connection of leads including cutting,stripping of cable, insulations,providing compression type terminals,crimping of lugs with suitable crimping tool, as per technical specification, approved drawings and scope of work.**		
4.01	3Cx 240 mm 2 11 KV XLPE	No	2702
4.02	3Cx185 mm 2 11 KV XLPE	No	
4.03	3Cx 70 mm 2 11 KV XLPE	No	1492
5.00	**Outdoor application: HT push on/heat shrink type end termination preferably for at switchgear end boxes, transformer(PAD/Pole mounted) for 11 kV XLPE Aluminium Conductor Armoured cable as specified with connection of leads including cutting,stripping of cable, insulations,providing compression type terminals,crimping of lugs with suitable crimping tool, as per technical specification, approved drawings and scope of work.**		
5.01	3Cx 240 mm 2 11 KV XLPE	No	
5.02	3Cx185 mm 2 11 KV XLPE	No	
5.03	3Cx 70 mm 2 11 KV XLPE	No	80
6.00	**Straight Joint: HT push on/heat shrink type straight joint preferably for 11 kV XLPE Aluminium Conductor Armoured cable as specified with connection of leads including cutting,stripping of cable, insulations,providing compression type terminals,crimping of lugs with suitable crimping tool.as per technical specification, approved drawings and scope of work.**		
6.01	3Cx 240 mm 2 11 KV XLPE	No	212.13
6.02	3Cx185 mm 2 11 KV XLPE	No	
7.00	**Providing of XLPE(IS:7098) (I)-88 ISI marked multistrand Aluminium conductor armoured cable for 1.1 kV to be laid on pole with HDPE pipe with clamping or in ground as wlell as existing cable trench/pipe at road crossing of 1C x 300 Sq MM, as per technical specification, approved drawings and scope of work.**	Mtr	44760

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A (III) Overhead to Underground Electrification Network

Line Item No.	Description of Goods	Unit	Quantity
8.00	**Cable termination on FSP / MSP, LT Distribution Transformer Box of pole mounted transformer of LT cable grade as specified below including cutting,stripping of cable,insulations,providing compression type terminals,suitable cable glands,crimping lugs with necessary connections.**		
8.01	1 core 300 Sq mm (Indoor)	No	12172
8.02	1 core 300 Sq mm (Out door - at LT Pole)	No	
9.00	**CABLE TERMINAL FERRUALS: The PVC cable terminal ferruals for identification of phase sequence and feeders/ PSS / FSP name of HT/LT cables shall be provided at every termination of all cables stating details as under. HT cable/: feeder name/Phase (R/Y/B) LT cable : TC/ FSP name/ Phase (R/Y/B/N)**	No	12946
10.00	**Earthing arrangement as per technical specificatons, approved drawings and scope of work.**		
10.01	Supplying of maintaince free earthing sysytem comprising of 17.2 mm dia 3 mtr Long Earthing Electrode of low carbon steel electrode with 250 micrns copper coating + carbon based conductive concrete back fill safe compound(resisitivity of less than 0.10 ohm mtr) & GI clamp.Supply, Earcting and Install pre cast RCC Earth pit Chamber (300*300 MM),Making 100 mm Dia Bore, 3 Mtr Long, Making of Earth pit chamber in normal Soil.	No	5324
10.02	Supply of earthing conductor 38 x 3 G.I. strip for pole mounted transformer and upto FSP,RMU as well as connection to be made to the earth pit. Rates inclusive of hot dipped hardwares.	Mtr	42592
11.00	**Providing of DP structure as per enclosed drawings(PSC poles 10 metres long)including supply of poles, 10 Kgf/cm2 100 mm dia heavy duty GI pipe for protection of cable, hot dipped structural sections for mounting Transformer/RMU with box channel & chain pulley block and required clamps for fitting cables,structures,100mm dia GI pipe etc with all hardwares, suitable RMU/Transformer centre and its accessories such as clamps,hardwares,pipe etc with necessary muffing with PCC for commissioning of 11kV/433 volts Distribution Transformers of following capacity as per approved drawings by Engineer in charge as per Technical Specification**	No	693
12.00	**Supply and installation of clamps made from 50*6 mm GI Flat (Min. wieght of flat 1.6 kG per Set) for fitting for 110 mm GI / HDPE pipe above ground with pole (with cost of nuts & bolts) Cable Laying above ground in air for termination of cable on pole withas per Engineer In Charge**	Set	1492
13.00	**Provinding of 100 mm Dia heavy duty GI pipe with clamping for the protection for the cable above the ground**	Mtr	2238
14.00	**Stay Set (Galvanised) with 50x8 mm stay clamp, stay insulator (2 Nos.), anchor plate (200x200x6), nut bolts, 2 Nos turn-buckles, 1.8 m long, 16 mm diameter solid GS stay rod & 7/3.15 mm dia GI stranded wire complete as per technical specification, approved drawings and scope of work.**	Set	1492
15.00	**Supplying 120x100x40 cms. Fuse section pillar fabricated from 4 mm Thermosetting Plastic (moulded in a single piece) i.e Glass Reinforced Polyester sheet Moulding Compound (SMC) with cable clamps to be burried in ground to have appropriate erection on look unifrom unit erected with cement concrete foundation and 45 cms high brick masonry internal supported on both side with intrnal and outer side locking arrangement with lock and keys in duplicate .Incoming switchgear SFU of 800 Amp TPN and outgoing HRC SMC fuse base and knife type links 32 Amp to 630 Amp capacity fuse base fitted on 630 Amp current capacity copper Busbar with RYB colour coding and insulated strip with all internal connections and entry for incomming 1 core 300 sq mm 4 nos and outgoing 5/6 nos. 31/2 core cables of suitable sizes. (As per Technical specification of FSP)**	No	1084
16.00	**Cable Route Marker: Providing RCC cable Route marker as per drawing duly marked with "DANGER" Mark, "UGVCL POWER CABLE" and Arrow of route of cable.**	No	4242.6
17.00	**PRE BONDING TAPE: For laying on trench after laying cable on trench to provid indication cable route below land surface in under ground trench to protect cable for mechnical injuries.**	RMT	127270
18.00	**Provinding chain link fencing to RMU as per Specification and drawing(approx. total running length of each fencing 10.8 meters)**	RMT	8985.60