

BoQ

**DEVELOPMENT OF DISTRIBUTION INFRASTRUCTURE AT MEHSANA District of GUJARAT UNDER REVAMPED REFORMS-BASED AND RESULTS-LINKED, DISTRIBUTION SECTOR SCHEME**

**Bill of Quantity**

Supply of materials

Bidder's Name & Address:

<b>A(I) Augmentation, Renovation and Modernisation of existing Distribution Transformer</b>			
<b>Line Item</b>	<b>Description</b>	<b>Unit</b>	<b>Qty</b>
<b>A (I)</b>	<b>Augmentation &amp; Renovation of 11/0.4 kV Distribution Transformer Substation</b>		
<b>1.00</b>	<b>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:</b>		
1.01	New 100 KVA (11/0.4 kV) Aluminium wound DTR (Replacing 63 KVA old DTR),	No	130
1.02	New 200 KVA (11/0.4 kV) Aluminium wound DTR (Replacing 100 KVA old DTR),	No	75

Note:

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**Bill of Quantity**

**Supply of materials**

**Bidder's Name & Address:**

A (II)	<b>Crossing Removal (Safety)</b>		
Line Item No.	Description of Goods	Unit	Quantity
<b>1.00</b>	<b>Cables:</b>		
1.01	Supply of 11 kV,(E),XLPE insulated Aluminium Conductor, Armoured cable as per enclosed specification 3 core 185 sq. mm. as per enclosed 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	15986
1.02	Providing of HDPE ducts conforming to IS:4984 having dia OD 120mm, 6kg/cm <sup>2</sup> , 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	9048
<b>2.00</b>	<b>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.</b>	MT	0.95
<b>3.00</b>	<b>MS Nuts, Bolts with Washers as per technical specification, approved drawings and scope of work.</b>	MT	0.11
<b>4.00</b>	<b>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.</b>		
4.01	3Cx185 mm 2 11 KV XLPE	No	0
<b>5.00</b>	<b>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.</b>		
5.01	3Cx185 mm 2 11 KV XLPE	No	368
<b>6.00</b>	<b>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.</b>		
6.01	3Cx185 mm 2 11 KV XLPE	No	10
<b>7.00</b>	<b>Earthing arrangement as per technical specifications, approved drawings and scope of work.</b>		
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 of earthing chamber. For Electrical installation covering Transformer neutrals,HT & LT switchgears for independent earthing in normal soil, Length of Pipe 3 mtrs.Backfilling compound 2 bags of 25 Kg each	No	252
7.02	Installation & commissioning 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	2476
<b>8.00</b>	<b>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.</b>	No	36
<b>9.00</b>	<b>Supply and installation of clamps made from 50*6 mm GI Flat (Min. weight of flat 1.6 kG per Set) for fitting for 110 mm GI / HDPE pipe above ground with pole (with cost of nuts &amp; bolts) Cable Laying above ground in air for termination of cable on pole with as per Engineer In Charge</b>	Set	524
<b>10.00</b>	<b>Providing of 100 mm Dia heavy duty GI pipe with clamping for the protection for the cable above the ground</b>	Mtr	1042

<b>11.00</b>	<b>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 &amp; 7/3.15 mm dia GI stranded wire complete as per technical specification, approved drawings and scope of work.</b>	Set	378
<b>12.00</b>	<b>Insulator and hardware as per technical specification, approved drawings and scope of work.</b>		
12.01	11 KV Polymer (Composite) Disc insulator 45 KN along with suitable hardware fittings	set	48
12.02	11 KV Polymer (Composite) Pin Insulators having GI PIN	set	16
<b>13.00</b>	<b>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.</b>	No	325

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Bill of Quantity

Supply of materials

Bidder's Name & Address:

A (III)	<b>New Feeder / Feeder Bifurcation</b>		
Line Item No.	Description of Goods	Unit	Quantity
<b>1.00</b>	<b>Support for 11 KV overhead line as per technical specification, approved drawings and scope of work</b>		
1.01	10 m / 270 kgs PSC Poles - (PSC Pole as per state practice)	No	164
1.02	8 m / 200 kgs PSC Poles - (PSC Pole as per state practice)	No	397
<b>2.00</b>	<b>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.</b>	MT	11.19
<b>3.00</b>	<b>MS Nuts, Bolts with Washers as per technical specification, approved drawings and scope of work.</b>	MT	1.891
<b>4.00</b>	<b>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 &amp; 7/3.15 mm dia GI stranded wire complete as per technical specification, approved drawings and scope of work.</b>	set	345
<b>5.00</b>	<b>Insulator and hardware as per technical specification, approved drawings and scope of work.</b>		
5.01	11 KV Polymer (Composite) Disc insulator 45 KN along with suitable hardware fittings	set	603
5.02	11 KV Polymer (Composite) Pin Insulators having GI PIN	set	1218
<b>6.00</b>	<b>Earthing arrangement as per technical specifications, approved drawings and scope of work.</b>		
6.01	Supplying & erecting earth pit of minimum depth of 6 feet with 300x300x9 mm CI Earthing Plate, 1.5 meter 20 mm dia rigid PVC Pipe and earthing bolt with 15 kg salt and 15 kg coal.	No	561
6.03	Installation & commissioning of earthing conductor 38 x 3 G.I. strip for pole, 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	5610
<b>7.00</b>	<b>ACSR Conductors of following sizes with Jointing sleeves, binding materials, PG clamps, bi-metallic clamp, hardware etc for overhead line and jumpers as required as per technical specification, approved drawings and scope of work</b>		
7.01	6/4.72 mm+7/1.57 mm (100 mm <sup>2</sup> Al. Area) - Dog	km	11.10
7.02	AL Alloy Conductor 55mm <sup>2</sup> Size	km	49.50
<b>8.00</b>	<b>12kV, 600A, 25kA for 3sec, 3-ph, 3 Pin type, Horizontal/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</b>	Set	40
<b>9.00</b>	<b>Cables:</b>		
9.01	Supply of 11 KV,(E),XLPE insulated Aluminium Conductor, Armoured cable as per enclosed specification 3 core 185 sq. mm. as per enclosed 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	15488
9.02	Providing of HDPE ducts conforming to IS:4984 having dia OD 120mm, 6kg/cm <sup>2</sup> , 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 aluminium 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	6920
<b>10.00</b>	<b>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.</b>		
10.01	3Cx185 mm 2 11 KV XLPE	No	0
<b>11.00</b>	<b>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.</b>		
11.01	3Cx185 mm 2 11 KV XLPE	No	148
<b>12.00</b>	<b>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.</b>		
12.01	3Cx185 mm 2 11 KV XLPE	No	19
<b>13.00</b>	<b>Earthing arrangement as per technical specifications, approved drawings and scope of work.</b>		
13.01	Supplying of maintenance free earthing system comprising of 17.2 mm dia 3 mtr Long Earthing Electrode of low carbon steel electrode with 250 microns copper coating + carbon based conductive concrete back fill safe compound(resistivity of less than 0.10 ohm mtr) & GI clamp,Supply, Earthing 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	148
13.02	Installation & commissioning 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	1480
<b>14.00</b>	<b>Supply and installation of clamps made from 50*6 mm GI Flat (Min. weight of flat 1.6 kg per Set) for fitting for 110 mm GI / HDPE pipe above ground with pole (with cost of nuts &amp; bolts) Cable Laying above ground in air for termination of cable on pole with as per Engineer In Charge</b>	Set	1247
<b>15.00</b>	<b>Providing of 100 mm Dia heavy duty GI pipe with clamping for the protection for the cable above the ground</b>	Mtr	444
<b>16.00</b>	<b>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.</b>	No	763
<b>17.00</b>	<b>11 KV LINE FOR UNDER GROUND RAILWAY CROSSING BY 2 Nos (INCLUDING ONE SPARE) 3Cx185 Sqmm XLPE Armoured Cable (0.3 km each) USING 150MM DIA GI PIPES (grade A for underground laying and grade B for pole support), OUTDOOR HEAT SHRINKABLE CABLE JOINTING KITS, 11 KV LIGHTENING ARRESTOR STATION CLASS 10KA (6 NOS.), LUGS, 4 Nos GI 3-Meters LONG pipe EARTHING/ Chemical earthing, 6 SWG GI WIRES, CABLE MARKERS, BI METALLICK CLAMPS, JUMPERING WITH 11 KV ARIAL BUNCHED CABLES 200 sqmm dia(10 mtr) etc AS REQUIRED AS PER TECHNICAL SPECIFICATIONS, DRAWINGS AND SCOPE OF THE WORK.</b>	No	3

Note:

**DEVELOPMENT OF DISTRIBUTION INFRASTRUCTURE AT MEHSANA District of GUJARAT UNDER REVAMPED REFORMS-BASED AND RESULTS-LINKED, DISTRIBUTION SECTOR SCHEME**  
**Bill of Quantity**

Supply of materials

Bidder's Name & Address:

<b>A (IV) Maintenance free, Ready capsule, Pipe-in-cage (PiC) type earthing and connections to the various parts of transformer center using GI Strip and GI Nut Bolts</b>			
<b>Line Item No.</b>	<b>Description of Goods</b>	<b>Unit</b>	<b>Quantity</b>
<b>1.00</b>	<b>Supply of Maintenance free, Ready capsule, Pipe-in-cage (PiC) type Earthing with 3 Mtr Electrode as per technical specification, approved drawings and scope of work.</b>	No	4218.00
<b>2.00</b>	<b>Supply of 25 X 3 mm GI Strip having hot dip- galvanized-zinc coating of 80-100 microns without any joints or welding. Both the end of the GI strip should be connected with GI nut bolts and required fabrication work for giving separate earthing connections to (1) Neutral of the transformer (2) MS structures of the transformer center (3) Lightening Arrestor (Approximately 30 meter GI strip per transformer centre -as per requirement and instruction of Engineer in-charge) (3 earth Pits required for three separate earthings) as per technical specification, approved drawings and scope of work.</b>	Mtr	42180.00
<b>3.00</b>	<b>Supply of uPVC standard make Pipe of 1.25" diameter for covering GI strip with UV protected Cable Ties of 550 X 7.6 mm size to bind with pole face(Approximately 25 meter uPVC pipe for GI strip covering per transformer centre -as per requirement and instruction of Engineer in-charge) as per technical specification, approved drawings and scope of work.</b>	Mtr	33744.00

Note:

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**Bill of Quantity**

**Supply of materials**

**Bidder's Name & Address:**

<b>A (V) Interlinking of 11kV Feeder (Reliability)</b>			
<b>Line Item No.</b>	<b>Description of Goods</b>	<b>Unit</b>	<b>Quantity</b>
	<b>Support for 11 KV overhead line as per technical specification, approved drawings and scope of work</b>		
1.01	10 m / 270 kgs PSC Poles - (PSC Pole as per state practice)	No	38
	<b>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.</b>	MT	2.12
3.00	<b>MS Nuts, Bolts with Washers as per technical specification, approved drawings and scope of work.</b>	MT	0.66
	<b>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 &amp; 7/3.15 mm dia GI stranded wire complete as per technical specification, approved drawings and scope of work.</b>	set	36
	<b>Insulator and hardware as per technical specification, approved drawings and scope of work.</b>		
5.01	11 KV Polymer (Composite) Disc insulator 45 KN along with suitable hardware fittings	set	54
5.02	11 KV Polymer (Composite) Pin Insulators having GI PIN	set	
	<b>Earthing arrangement as per technical specifications, approved drawings and scope of work.</b>		
6.01	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 of earthing chamber. For Electrical installation covering Transformer neutrals, HT & LT switchgears for independent earthing in normal soil, Length of Pipe 3 mtrs. Backfilling compound 2 bags of 25 Kg each	No	36
6.02	Installation & commissioning 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 hardware.	Mtr	360
	<b>ACSR Conductors of following sizes with Jointing sleeves, binding materials, PG clamps, bi-metallic clamp, hardware etc for overhead line and jumpers as required as per technical specification, approved drawings and scope of work</b>		
7.01	6/4.72 mm+7/1.57 mm (100 mm <sup>2</sup> Al. Area) - Dog	kM	0.100
	<b>12kV, 600A, 25kA for 3sec, 3-ph, 3 Pin type, Horizontal/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</b>	Set	14
	<b>Cables:</b>		
9.01	Supply of 11 KV(E), XLPE insulated Aluminium Conductor, Armoured cable as per enclosed specification 3 core 185 sq. mm. as per enclosed 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	6671
	Providing of HDPE ducts conforming to IS:4984 having dia OD 120mm, 6kg/cm <sup>2</sup> , 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 aluminium 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	2368
	<b>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.</b>		
10.01	3Cx185 mm 2 11 KV XLPE	No	150
	<b>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.</b>		
11.01	3Cx185 mm 2 11 KV XLPE	No	175
	<b>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.</b>		
12.01	3Cx185 mm 2 11 KV XLPE	No	20
	<b>Earthing arrangement as per technical specifications, approved drawings and scope of work.</b>		
13.01	Supplying of maintenance free earthing system comprising of 17.2 mm dia 3 mtr Long Earthing Electrode of low carbon steel electrode with 250 microns copper coating + carbon based conductive concrete back fill safe compound (resistivity of less than 0.10 ohm mtr) & GI clamp. Supply, Earthing 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	32
13.01	Supplying of maintenance free earthing system comprising of 17.2 mm dia 3 mtr Long Earthing Electrode of low carbon steel electrode with 250 microns copper coating + carbon based conductive concrete back fill safe compound (resistivity of less than 0.10 ohm mtr) & GI clamp. Supply, Earthing 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	221
13.02	Installation & commissioning 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 hardware.	Mtr	2466
14.00	<b>Supply and installation of clamps made from 50*6 mm GI Flat (Min. weight of flat 1.6 kG per Set) for fitting for 110 mm GI / HDPE pipe above ground with pole (with cost of nuts &amp; bolts) Cable Laying above ground in air for termination of cable on pole with as per Engineer In Charge</b>	Set	350
15.00	<b>Providing of 100 mm Dia heavy duty GI pipe with clamping for the protection for the cable above the ground</b>	Mtr	390
16.00	<b>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.</b>	No	146
17.00	<b>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.</b>		
17.01	2 Isolator (2-Way)	No	0
17.02	1 Circuit Breaker 1 Isolator (2-Way)	No	0
17.03	3 Isolator (3-Way)	No	7
17.04	1 Circuit Breaker 2 Isolator (3-Way)	No	55
17.05	2 Circuit Breaker 1 Isolator (3-Way)	No	0
17.06	1 Circuit Breaker 3 Isolator (4-Way)	No	1
17.07	4 Isolator (4-Way)	No	0
17.08	2 Circuit Breaker 2 Isolator (4-Way)	No	0
17.09	1 Circuit Breaker 4 Isolator (5-Way)	No	0
17.10	1 Circuit Breaker 5 Isolator (6-Way)	No	0

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**Bill of Quantity**

**Supply of materials**

**Bidder's Name & Address:**

<b>A (VI) Conversion of existing overhead electrical distribution network in to Underground Cable Network</b>			
<b>Line Item No.</b>	<b>Description of Goods</b>	<b>Unit</b>	<b>Quantity</b>
<b>1.00</b>	<b>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.</b>		
1.01	2 Isolator (2-Way)	No	53
1.02	1 Circuit Breaker 1 Isolator (2-Way)	No	
1.03	3 Isolator (3-Way)	No	79
1.04	1 Circuit Breaker 2 Isolator (3-Way)	No	656
1.05	2 Circuit Breaker 1 Isolator (3-Way)	No	
1.06	1 Circuit Breaker 3 Isolator (4-Way)	No	223
1.07	4 Isolator (4-Way)	No	83
1.08	2 Circuit Breaker 2 Isolator (4-Way)	No	25
1.09	1 Circuit Breaker 4 Isolator (5-Way)	No	
1.10	1 Circuit Breaker 5 Isolator (6-Way)	No	
<b>2.00</b>	<b>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.</b>		
2.01	100 kVA, Aluminium Wound CRGO / Amorphous Core	No	494
2.02	200 kVA, Aluminium Wound CRGO / Amorphous Core	No	248
2.03	315 kVA, Copper Wound CRGO / Amorphous Core	No	54
2.04	500 kVA, Copper Wound CRGO / Amorphous Core	No	19
<b>3.00</b>	<b>Cables:</b>		
3.01	Supply of 11 kV,(E),XLPE insulated Aluminium Conductor, Armoured cable as per enclosed specification 3 core 240 sq. mm. as per enclosed 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	11600
3.02	Supply of 11 kV,(E),XLPE insulated Aluminium Conductor, Armoured cable as per enclosed specification 3 core 185 sq. mm. as per enclosed 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	253120
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	24000
3.04	Providing of HDPE ducts conforming to IS:4984 having dia OD 120mm, 6kg/cm <sup>2</sup> , 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	206300
<b>4.00</b>	<b>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.</b>		
4.01	3Cx 240 mm 2 11 KV XLPE	No	170
4.02	3Cx185 mm 2 11 KV XLPE	No	2676
4.03	3Cx 70 mm 2 11 KV XLPE	No	2134
<b>5.00</b>	<b>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.</b>		
5.01	3Cx 240 mm 2 11 KV XLPE	No	10
5.02	3Cx185 mm 2 11 KV XLPE	No	77
5.03	3Cx 70 mm 2 11 KV XLPE	No	178
<b>6.00</b>	<b>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.</b>		
6.01	3Cx 240 mm 2 11 KV XLPE	No	40
6.02	3Cx185 mm 2 11 KV XLPE	No	844



**A (VI) Conversion of existing overhead electrical distribution network in to Underground Cable Network**

Line Item No.	Description of Goods	Unit	Quantity
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 (DWC) pipe with clamping or in ground as well 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	113500
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	15074
8.02	1 core 300 Sq mm (Out door - at LT Pole)	No	16736
9.00	<b>CABLE TERMINAL FERRUALS:</b> 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	20054
10.00	<b>Earthing arrangement as per technical specificatons, approved drawings and scope of work.</b>		
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(resisitvity 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	6332
10.02	Installation & commissioning 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	63320
11.00	<b>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 &amp; 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</b>	No	967
12.00	<b>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 &amp; bolts) Cable Laying above ground in air for termination of cable on pole withas per Engineer In Charge</b>	Set	450
13.00	<b>Providing of 100 mm Dia heavy duty GI pipe with clamping for the protection for the cable above the ground</b>	Mtr	2120
14.00	<b>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 &amp; 7/3.15 mm dia GI stranded wire complete as per technical specification, approved drawings and scope of work.</b>	Set	14928
15.00	<b>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 )</b>	No	1528
16.00	<b>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.</b>	No	2698
17.00	<b>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 mechanical injuries.</b>	Mtr	56300
18.00	<b>Providing chain link fencing to RMU as per Specification and drawing(approx. total running length of each fencing 10.8 meters)</b>	RMT	12085.20