DEVELOPMENT OF DISTRIBUTION INFRASTRUCTURE AT ARVALLI District of GUJARAT UNDER REVAMPED REFORMS-BASED AND RESULTS-
(Bill of Quantity)

Ex-works supply of materials

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 Transformer Substation**		
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 100 KVA (11/0.4 kV) Aluminium wound DTR (Replacing 63 KVA old DTR),	No	149
1.02	New 200 KVA (11/0.4 kV) Aluminium wound DTR (Replacing 100 KVA old DTR),	No	3

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Ex-works supply of materials

Bidder's Name & Address:

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	15948
1.02	Providing of HDPE (DWC) ducts confirming to IS:4984 having dia OD/ID 120/90.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	2754
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	4.6035
3.00	**MS Nuts, Bolts with Washers as per technical specification, approved drawings and scope of work.**	MT	0.171864
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	558
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	0
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	558
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	8928
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	558
10.00	**Provinding of 100 mm Dia heavy duty GI pipe with clamping for the protection for the cable above the ground**	Mtr	1674
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	558
12.00	**Insulator and hardware as per technical specification, approved drawings and scope of work.**		
12.01	11 KV Polymer (Composite) Disc insulator 45 KN along with suitable hardware fittings	set	1674
12.02	11 KV Polymer (Composite) Pin Insulators having GI PIN	set	0
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	460

DEVELOPMENT OF DISTRIBUTION INFRASTRUCTURE AT ARVALLI District of GUJARAT UNDER REVAMPED REFORMS-BASED AND RESULTS-
(Bill of Quantity)

Ex-works supply of materials

Bidder's Name & Address:

A (III)	New Feeder / Feeder Bifurcation		
Line Item No.	**Description of Goods**	**Unit**	**Quantity**
1.00	**Support for 11 KV overhead line as per technical specification, approved drawings and scope of work**		
1.01	10 m / 270 kgs PSC Poles - (PSC Pole as per state practice)	No	37
1.02	8 m / 200 kgs PSC Poles - (PSC Pole as per state practice)	No	179
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	4.188
3.00	**MS Nuts, Bolts with Washers as per technical specification, approved drawings and scope of work.**	MT	0.356
4.00	**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	70
5.00	**Insulator and hardware as per technical specification, approved drawings and scope of work.**		
5.01	11 KV Polymer (Composite) Disc insulator 45 KN along with suitable hardware fittings	set	197
5.02	11 KV Polymer (Composite) Pin Insulators having GI PIN	set	589
6.00	**Earthing arrangement as per technical specificatons, approved drawings and scope of work.**		
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 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	226
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 hardwares.	Mtr	1912
7.00	**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**		
7.01	6/4.72 mm+7/1.57 mm (100 mm² Al. Area) - Dog	km	2.28
7.02	AL.Alloy Conductor 55mm² Size	km	26.11
8.00	**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**	Set	10
9.00	**Cables:**		
9.01	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 provinding 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	595
9.02	Providing of HDPE (DWC) ducts confirming to IS:4984 having dia OD/ID 120/90.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	80
10.00	**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.**		
10.01	3Cx185 mm 2 11 KV XLPE	No	7
11.00	**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.**		

11.01	3Cx185 mm 2 11 KV XLPE	No	11
12.00	**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.**		
12.01	3Cx185 mm 2 11 KV XLPE	No	0
13.00	**Earthing arrangement as per technical specificatons, approved drawings and scope of work.**		
13.01	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	
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	
14.00	**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	5
15.00	**Provinding of 100 mm Dia heavy duty GI pipe with clamping for the protection for the cable above the ground**	Mtr	15
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	3
17.00	**11kV 3 C x 70 Sq. MM. + 1 X 70 Sq. MM. bare messenger Aerial Bunched Cable (to be erected on 10Mtr PSC Pole)**	kM	0.525

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(Bill of Quantity)

Ex-works supply of materials

Bidder's Name & Address:

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		
Line Item No.	**Description of Goods**	**Unit**	**Quantity**
1.00	**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.**	No	489.00
2.00	**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.**	Mtr	4890.00
3.00	**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.**	Mtr	4075.00

DEVELOPMENT OF DISTRIBUTION INFRASTRUCTURE AT ARVALLI District of GUJARAT UNDER REVAMPED REFORMS-BASED AND RESULTS-
(Bill of Quantity)

Ex-works supply of materials

Bidder's Name & Address:

A (V)	**Interlinking of 11kV Feeder (Reliability)**		
Line Item No.	**Description of Goods**	**Unit**	**Quantity**
1.00	**Support for 11 KV overhead line as per technical specification, approved drawings and scope of work**		
1.01	10 m / 270 kgs PSC Poles - (PSC Pole as per state practice)	No	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
3.00	**MS Nuts, Bolts with Washers as per technical specification, approved drawings and scope of work.**	MT	0
4.00	**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	42
5.00	**Insulator and hardware as per technical specification, approved drawings and scope of work.**		
5.01	11 KV Polymer (Composite) Disc insulator 45 KN along with suitable hardware fittings	set	0
5.02	11 KV Polymer (Composite) Pin Insulators having GI PIN	set	0
6.00	**Earthing arrangement as per technical specificatons, approved drawings and scope of work.**		
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 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	84
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 hardwares.	Mtr	420
7.00	**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**		
7.01	6/4.72 mm+7/1.57 mm (100 mm² Al. Area) - Dog	km	0
8.00	**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**	Set	0
9.00	**Cables:**		
9.01	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 provinding 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	3400
10.00	**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.**		
10.01	3Cx185 mm 2 11 KV XLPE	No	42
11.00	**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.**		
11.01	3Cx185 mm 2 11 KV XLPE	No	42
12.00	**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.**		
12.01	3Cx185 mm 2 11 KV XLPE	No	3
13.00	**Earthing arrangement as per technical specificatons, approved drawings and scope of work.**		

13.01	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	
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	
14.00	**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	42
15.00	**Provinding of 100 mm Dia heavy duty GI pipe with clamping for the protection for the cable above the ground**	Mtr	126
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	120
17.00	**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.**		
17.01	2 Isolator (2-Way)	No	
17.02	1 Circuit Breaker 1 Isolator (2-Way)	No	
17.03	3 Isolator (3-Way)	No	3
17.04	1 Circuit Breaker 2 Isolator (3-Way)	No	18
17.05	2 Circuit Breaker 1 Isolator (3-Way)	No	
17.06	1 Circuit Breaker 3 Isolator (4-Way)	No	
17.07	4 Isolator (4-Way)	No	
17.08	2 Circuit Breaker 2 Isolator (4-Way)	No	
17.09	1 Circuit Breaker 4 Isolator (5-Way)	No	
17.10	1 Circuit Breaker 5 Isolator (6-Way)	No	
18.00	**Provinding chain link fencing to RMU as per Specification and drawing(approx. total running length of each fencing 10.8 meters)**	RMT	0