ANNEXURE-7

REPLACEMENT OF OLD EQUIPMENT

Annexure-7 Replacement of Old Equipment (VCB, CT, PT, CRP, RMU, CSS, Switchgear Panel)						
Sl no.	**Description**	**Unit**	**Quantity (in nos.)**	**Unit Price (in Rs)**	**Amount (in Rs.)**	**Total Cost (in cr.)**
1	33 KV, 1250 A Outdoor VCB	EA	20	3,46,134.94	69,22,698.75	0.69
2	11 KV, 1250 A Outdoor VCB	EA	23	3,34,685.37	76,97,763.45	0.77
3	11 KV, Indoor AIS Switchgear Panel	EA	6	71,85,122.14	4,31,10,732.85	4.31
4	33 KV Control & Relay Panel (CRP) for Line Bay	EA	20	3,79,144.09	75,82,881.83	0.76
5	33 KV Control & Relay Panel (CRP) for Trf. Bay	EA	20	5,44,805.26	1,08,96,105.21	1.09
6	11 KV Control & Relay Panel (CRP) - Indoor	EA	23	3,79,144.09	87,20,314.10	0.87
7	33 KV, Outdoor CT	EA	60	1,07,549.15	64,52,949.03	0.65
8	33 KV, Outdoor PT	EA	60	88,997.77	53,39,866.31	0.53
9	11 KV, Outdoor CT	EA	69	87,049.35	60,06,404.99	0.60
10	11 KV, Outdoor PT	EA	69	64,253.43	44,33,486.74	0.44
11	3W 11kV RMU (LLV) along with 3C, 400sqmm UG Cable, jointing kits and LA.	EA	10	16,92,724.59	1,69,27,245.88	1.69
12	4W 11kV RMU (LLVV) along with 3C, 400sqmm UG Cable, jointing kits and LA.	EA	10	20,21,185.35	2,02,11,853.53	2.02
13	3W 33kV RMU (LLV) along with 1C, 630sqmm UG Cable, jointing kits and LA.	EA	1	36,81,814.30	36,81,814.30	0.37
14	4W 33kV RMU (LLVV) along with 1C, 630sqmm UG Cable, jointing kits and LA.	EA	1	44,46,146.22	44,46,146.22	0.44
15	11/0.433kV, 630kVA CSS	EA	4	53,34,067.36	2,13,36,269.45	2.13
16	33kV AIS Switchgear Panel	EA	2	1,31,61,564.17	2,63,23,128.33	2.63
	Total				**20,00,89,660.98**	**20.0**

Annexure-7

Standard BOQ for 33 KV, 1250 A Outdoor VCB Replacement

Materials for 33 KV, 1250 A Outdoor VCB

Sl. No.	*Description of Materials*	*Unit*	*Unit Rate*	*Total Quantity*	*Total Amount*
1	33 KV, 1250 A Outdoor VCB	EA	2,18,700.00	1	2,18,700.00
2	Gi Pipe Earthing 40mm. 3 Mtr. Long	No.	1,365.00	1	1,365.00
3	50x6mm GI Flat for earthing, 2.36kg/mtr., (10 Mtr for each VCB)= 10x2.36	KG	97.50	23.60	2,301.00
A				**Total Cost of materials**	2,22,366.00
B				Stock, Storage & Insurance i.e 3% of A	6,670.98
C				**Sub Total (A+B)**	**2,29,036.98**
D				Contigency @ 3% of C	6,871.11
E				Tools & Plants @ 2% of C	4,580.74
F				Transportation @ 7.5% of C	17,177.77
G				Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole	11,263.05
H				Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC/GI Pipe)	237.00
I				Erection Charges @ 20% of PSC pole- Not to be used for 33kv	-
J				**Sum of (C to I)**	**2,69,166.66**

Civil & Services

Sl. No.	*Description of Materials*	*Unit*	*Unit Rate*	*Total Quantity*	*Total Amount*
1	Construction Earthing chamber including installation of earthing pipe.Making earthing chamber including excavation , soil treatment with bentonide powder , calculation of earth resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe .	No.	3,700.00	1	3,700.00
K				**Total Civil & Services**	**3,700.00**

Dismantling Portion

Sl. No.	*Description of Materials*	*Unit*	*Unit Rate*	*Total Quantity*	*Total Amount*
1	Dismantling for 33 KV VCB	No.	18,003.04	1	18,003.04
L				**Total Dismantling**	18,003.04
M				**Total (J+K+L)**	2,90,869.70
N				Other overheads (Including 6% supervision charges) of M	-
O				**Sub Total (L+M)**	**2,90,869.70**
P				Total GST @ 18% of (O)	52,356.55
Q				Total CESS @ 1% of (O)	2,908.70
R				**Gross Total Material +Services (O+P+Q)**	**3,46,134.94**

Annexure-7

Standard BOQ for 11 KV, 1250 A Outdoor VCB Replacement

Materials for 11 KV, 1250 A Outdoor VCB

Sl. No.	*Description of Materials*	*Unit*	*Unit Rate*	*Total Quantity*	*Total Amount*
1	11 KV, 1250 A Outdoor VCB	EA	2,10,750.00	1	2,10,750.00
2	Gi Pipe Earthing 40mm. 3 Mtr. Long	No.	1,365.00	1	1,365.00
3	50x6mm GI Flat for earthing, 2.36kg/mtr., (10 Mtr for each VCB)= 10x2.36	KG	97.50	23.60	2,301.00
A				**Total Cost of materials**	2,14,416.00
B				Stock, Storage & Insurance i.e 3% of A	6,432.48
C				**Sub Total (A+B)**	**2,20,848.48**
D				Contigency @ 3% of C	6,625.45
E				Tools & Plants @ 2% of C	4,416.97
F				Transportation @ 7.5% of C	16,563.64
G				Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole	10,853.63
H				Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC/GI Pipe)	237.00
I				Erection Charges @ 20% of PSC pole- Not to be used for 33kv	-
J				**Sum of (C to I)**	**2,59,545.17**

Civil & Services

Sl. No.	*Description of Materials*	*Unit*	*Unit Rate*	*Total Quantity*	*Total Amount*
1	Construction Earthing chamber including installation of earthing pipe.Making earthing chamber including excavation , soil treatment with bentonide powder , calculation of earth resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe .	No.	3,700.00	1	3,700.00
K				**Total Civil & Services**	**3,700.00**

Dismantling Portion

Sl. No.	*Description of Materials*	*Unit*	*Unit Rate*	*Total Quantity*	*Total Amount*
1	Dismantling for 11 KV VCB	No.	18,003.04	1	18,003.04
L				**Total Dismantling**	18,003.04
M				**Total (J+K+L)**	2,81,248.21
N				Other overheads (Including 6% supervision charges) of M	-
O				**Sub Total (L+M)**	**2,81,248.21**
P				Total GST @ 18% of (O)	50,624.68
Q				Total CESS @ 1% of (O)	2,812.48
R				**Gross Total Material +Services (O+P+Q)**	**3,34,685.37**

Annexure-7

Standard BOQ for Indoor AIS Switchgear Panel					
Materials for 11 KV, Indoor VCB					
Sl. No.	***Description of Materials***	***Unit***	***Unit Rate***	***Total Quantity***	***Total Amount***
1	11 KV Indoor 1250A VCB SET6 Panel (1I/C+4O/G+1BUSPT)	Set	46,81,366.00	1	46,81,366.00
2	Gi Pipe Earthing 40mm. 3 Mtr. Long	No.	1,365.00	2	2,730.00
3	50x6mm GI Flat for earthing, 2.36kg/mtr., (5 Mtr for each VCB)= 5x2.36x2	KG	97.50	23.60	2,301.00
A				**Total Cost of materials**	46,86,397.00
B				Stock, Storage & Insurance i.e 3% of A	1,40,591.91
C				**Sub Total (A+B)**	**48,26,988.91**
D				Contigency @ 3% of C	1,44,809.67
E				Tools & Plants @ 2% of C	96,539.78
F				Transportation @ 7.5% of C	3,62,024.17
G				Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole	-
H				Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC pole/GI Pipe)	237.00
I				Erection Charges @ 20% of PSC pole- Not to be used for 33kv	
J				**Sum of (C to I)**	**54,30,599.53**
Civil & Services					
Sl. No.	***Description of Materials***	***Unit***	***Unit Rate***	***Total Quantity***	***Total Amount***
1	Erection of 11 KV Indoor 1250A VCB SET6 Panel (1I/C+4O/G+1BUSPT)	No.	4,95,600.00	1	4,95,600.00
2	Construction Earthing chamber including installation of earthing pipe.Making earthing chamber including excavation , soil treatment with bentonide powder , calculation of earth resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe .	No.	3,700.00	1	3,700.00
K				**Total Civil & Services**	**4,99,300.00**
Dismantling Portion					
Sl. No.	***Description of Materials***	***Unit***	***Unit Rate***	***Total Quantity***	***Total Amount***
1	Dismantling for 11 KV VCB	No.	18,003.04	6	1,08,018.24
L				**Total Dismantling**	1,08,018.24
M				**Total (J+K+L)**	60,37,917.77
N				Other overheads (Including 6% supervision charges) of M	-
O				**Sub Total (L+M)**	**60,37,917.77**
P				Total GST @ 18% of (O)	10,86,825.20
Q				Total CESS @ 1% of (O)	60,379.18
R				**Gross Total Material +Services (O+P+Q)**	**71,85,122.14**

Annexure-7

Standard BOQ for 33 KV Control & Relay Panel (CRP) for Line Bay Replacement					
Materials for 33 KV Control & Relay Panel (CRP) for Line Bay					
Sl. No.	***Description of Materials***	***Unit***	***Unit Rate***	***Total Quantity***	***Total Amount***
1	33 KV Control & Relay Panel (CRP) for Line Bay	EA	2,27,319.00	1	2,27,319.00
2	Gi Pipe Earthing 40mm. 3 Mtr. Long	No.	1,365.00	1	1,365.00
3	50x6mm GI Flat for earthing, 2.36kg/mtr., (5 Mtr for each CRP)= 5x2.36	KG	97.50	11.80	1,150.50
	Control Cable				-
4	4Core x 2.5 mm^2	Mtr	165.25	50.00	8,262.50
5	7Core x 2.5 mm^2	Mtr	236.60	50.00	11,830.00
A				**Total Cost of materials**	2,49,927.00
B				Stock, Storage & Insurance i.e 3% of A	7,497.81
C				**Sub Total (A+B)**	**2,57,424.81**
D				Contigency @ 3% of C	7,722.74
E				Tools & Plants @ 2% of C	5,148.50
F				Transportation @ 7.5% of C	19,306.86
G				Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole	-
H				Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC/GI Pipe)	2,188.03
I				Erection Charges @ 20% of PSC pole- Not to be used for 33kv	-
J				**Sum of (C to I)**	**2,91,790.94**
Civil & Services					
Sl. No.	***Description of Materials***	***Unit***	***Unit Rate***	***Total Quantity***	***Total Amount***
1	Erection of 33 KV Control & Relay Panel (CRP) for Line Bay	No.	18,003.04	1	18,003.04
2	Construction Earthing chamber including installation of earthing pipe.Making earthing chamber including excavation , soil treatment with bentonide powder , calculation of earth resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe .	No.	3,700.00	1	3,700.00
K				**Total Civil & Services**	**21,703.04**
Dismantling Portion					
Sl. No.	***Description of Materials***	***Unit***	***Unit Rate***	***Total Quantity***	***Total Amount***
1	Dismantling for 33 KV CRP	No.	5,114.50	1	5,114.50
L				**Total Dismantling**	5,114.50
M				**Total (J+K+L)**	3,18,608.48
N				Other overheads (Including 6% supervision charges) of M	-
O				**Sub Total (L+M)**	**3,18,608.48**
P				Total GST @ 18% of (O)	57,349.53
Q				Total CESS @ 1% of (O)	3,186.08
R				**Gross Total Material +Services (O+P+Q)**	**3,79,144.09**

Annexure-7

Standard BOQ for 33 KV Control & Relay Panel (CRP) for Trf. Bay Replacement					
Materials for 33 KV Control & Relay Panel (CRP) for Trf. Bay					
Sl. No.	***Description of Materials***	***Unit***	***Unit Rate***	***Total Quantity***	***Total Amount***
1	33 KV Control & Relay Panel (CRP) for Trf. Bay	EA	3,47,458.00	1	3,47,458.00
2	Gi Pipe Earthing 40mm. 3 Mtr. Long	No.	1,365.00	1	1,365.00
3	50x6mm GI Flat for earthing, 2.36kg/mtr., (5 Mtr for each CRP)= 5x2.36	KG	97.50	11.80	1,150.50
	Control Cable				-
4	4Core x 2.5 mm^2	Mtr	165.25	50.00	8,262.50
5	7Core x 2.5 mm^2	Mtr	236.60	50.00	11,830.00
A				**Total Cost of materials**	3,70,066.00
B				Stock, Storage & Insurance i.e 3% of A	11,101.98
C				**Sub Total (A+B)**	**3,81,167.98**
D				Contigency @ 3% of C	11,435.04
E				Tools & Plants @ 2% of C	7,623.36
F				Transportation @ 7.5% of C	28,587.60
G				Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole	-
H				Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC/GI Pipe)	2,188.03
I				Erection Charges @ 20% of PSC pole- Not to be used for 33kv	-
J				**Sum of (C to I)**	**4,31,002.01**
Civil & Services					
Sl. No.	***Description of Materials***	***Unit***	***Unit Rate***	***Total Quantity***	***Total Amount***
1	Erection of 33 KV Control & Relay Panel (CRP) for Trf. Bay	No.	18,003.04	1	18,003.04
2	Construction Earthing chamber including installation of earthing pipe.Making earthing chamber including excavation , soil treatment with bentonide powder , calculation of earth resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe .	No.	3,700.00	1	3,700.00
K				**Total Civil & Services**	**21,703.04**
Dismantling Portion					
Sl. No.	***Description of Materials***	***Unit***	***Unit Rate***	***Total Quantity***	***Total Amount***
1	Dismantling for 33 KV CRP	No.	5,114.50	1	5,114.50
L				**Total Dismantling**	5,114.50
M				**Total (J+K+L)**	4,57,819.55
N				Other overheads (Including 6% supervision charges) of M	-
O				**Sub Total (L+M)**	**4,57,819.55**
P				Total GST @ 18% of (O)	82,407.52
Q				Total CESS @ 1% of (O)	4,578.20
R				**Gross Total Material +Services (O+P+Q)**	**5,44,805.26**

Annexure-7

Standard BOQ for 11 KV Control & Relay Panel (CRP) - Indoor Replacement					
Materials for 11 KV Control & Relay Panel (CRP) - Indoor					
Sl. No.	***Description of Materials***	***Unit***	***Unit Rate***	***Total Quantity***	***Total Amount***
1	11 KV Control & Relay Panel (CRP) - Indoor	EA	2,27,319.00	1	2,27,319.00
2	Gi Pipe Earthing 40mm. 3 Mtr. Long	No.	1,365.00	1	1,365.00
2	50x6mm GI Flat for earthing, 2.36kg/mtr., (5 Mtr for each CRP)= 5x2.36	KG	97.50	11.80	1,150.50
	Control Cable				-
3	4Core x 2.5 mm^2	Mtr	165.25	50.00	8,262.50
4	7Core x 2.5 mm^2	Mtr	236.60	50.00	11,830.00
A				**Total Cost of materials**	2,49,927.00
B				Stock, Storage & Insurance i.e 3% of A	7,497.81
C				**Sub Total (A+B)**	**2,57,424.81**
D				Contigency @ 3% of C	7,722.74
E				Tools & Plants @ 2% of C	5,148.50
F				Transportation @ 7.5% of C	19,306.86
G				Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole	-
H				Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC/GI Pipe)	2,188.03
I				Erection Charges @ 20% of PSC pole- Not to be used for 33kv	-
J				**Sum of (C to I)**	**2,91,790.94**
Civil & Services					
Sl. No.	***Description of Materials***	***Unit***	***Unit Rate***	***Total Quantity***	***Total Amount***
1	Erection of 11 KV Control & Relay Panel (CRP) - Indoor	No.	18,003.04	1	18,003.04
2	Construction Earthing chamber including installation of earthing pipe.Making earthing chamber including excavation , soil treatment with bentonide powder , calculation of earth resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe .	No.	3,700.00	1	3,700.00
K				**Total Civil & Services**	**21,703.04**
Dismantling Portion					
Sl. No.	***Description of Materials***	***Unit***	***Unit Rate***	***Total Quantity***	***Total Amount***
1	Dismantling for 11 KV CRP	No.	5,114.50	1	5,114.50
L				**Total Dismantling**	5,114.50
M				**Total (J+K+L)**	3,18,608.48
N				Other overheads (Including 6% supervision charges) of M	-
O				**Sub Total (L+M)**	**3,18,608.48**
P				Total GST @ 18% of (O)	57,349.53
Q				Total CESS @ 1% of (O)	3,186.08
R				**Gross Total Material +Services (O+P+Q)**	**3,79,144.09**

Annexure-7

Standard BOQ for 33 KV, Outdoor CT Replacement					
Materials for 33 KV, Outdoor CT					
Sl. No.	***Description of Materials***	***Unit***	***Unit Rate***	***Total Quantity***	***Total Amount***
1	CT 33KV OILCOOLED 200-400-800/1-1-1 A, 1PH<(>,<)>O/D 33KV OILCOOLED CT (3C, Accuracy Class-PS/0.2S/5P20, Burden-30VA/30VA/30VA)	EA	34,746.00	1	34,746.00
2	Gi Pipe Earthing 40mm. 3 Mtr. Long	No.	1,365.00	1	1,365.00
3	50x6mm GI Flat for earthing, 2.36kg/mtr., (10 Mtr)= 10x2.36	KG	97.50	23.60	2,301.00
	Control Cable				-
4	4Core x 2.5 mm^2	Mtr	165.25	50.00	8,262.50
A				**Total Cost of materials**	46,674.50
B				Stock, Storage & Insurance i.e 3% of A	1,400.24
C				**Sub Total (A+B)**	**48,074.74**
D				Contigency @ 3% of C	1,442.24
E				Tools & Plants @ 2% of C	961.49
F				Transportation @ 7.5% of C	3,605.61
G				Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole	-
H				Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC pole/GI PIPE)	1,088.04
I				Erection Charges @ 20% of PSC pole- Not to be used for 33kv	-
J				**Sum of (C to I)**	**55,172.12**
Civil & Services					
Sl. No.	***Description of Materials***	***Unit***	***Unit Rate***	***Total Quantity***	***Total Amount***
1	Erection of 33KV Outdoor type current Transformer on the existing structure.	No.	13,502.28	1	13,502.28
2	Construction Earthing chamber including installation of earthing pipe.Making earthing chamber including excavation , soil treatment with bentonide powder , calculation of earth resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe .	No.	3,700.00	1	3,700.00
K				**Total Civil & Services**	**17,202.28**
Dismantling Portion					
Sl. No.	***Description of Materials***	***Unit***	***Unit Rate***	***Total Quantity***	***Total Amount***
1	Dismantling for 33 KV CT	No.	18,003.04	1	18,003.04
L				**Total Dismantling**	18,003.04
M				**Total (J+K+L)**	90,377.44
N				Other overheads (Including 6% supervision charges) of M	-
O				**Sub Total (L+M)**	**90,377.44**
P				Total GST @ 18% of (O)	16,267.94
Q				Total CESS @ 1% of (O)	903.77
R				**Gross Total Material +Services (O+P+Q)**	**1,07,549.15**

Annexure-7

Standard BOQ for 33 KV, Outdoor PT Replacement					
Materials for 33 KV, Outdoor PT					
Sl. No.	***Description of Materials***	***Unit***	***Unit Rate***	***Total Quantity***	***Total Amount***
1	33KV.Single Phase PT(33KV/ V3 / 110V/ V3) (Oil cooled) CLASS 0.5 / 3P, with O/P burden of 100VA	EA	21,292.37	1	21,292.37
2	Gi Pipe Earthing 40mm. 3 Mtr. Long	No.	1,365.00	1	1,365.00
2	50x6mm GI Flat for earthing, 2.36kg/mtr., (10 Mtr)= 10x2.36	KG	97.50	23.60	2,301.00
	Control Cable				-
3	4Core x 2.5 mm^2	Mtr	165.25	50.00	8,262.50
A				**Total Cost of materials**	33,220.87
B				Stock, Storage & Insurance i.e 3% of A	996.63
C				**Sub Total (A+B)**	**34,217.50**
D				Contigency @ 3% of C	1,026.52
E				Tools & Plants @ 2% of C	684.35
F				Transportation @ 7.5% of C	2,566.31
G				Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole	-
H				Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC pole/GI PIPE)	1,088.04
I				Erection Charges @ 20% of PSC pole- Not to be used for 33kv	-
J				**Sum of (C to I)**	**39,582.72**
Civil & Services					
Sl. No.	***Description of Materials***	***Unit***	***Unit Rate***	***Total Quantity***	***Total Amount***
1	Erection of 33KV Outdoor type potential Transformer on the existing structure.	No.	13,502.28	1	13,502.28
2	Construction Earthing chamber including installation of earthing pipe.Making earthing chamber including excavation , soil treatment with bentonide powder , calculation of earth resistance, including Installation of 3Mtr GI Pipe 40mm/ 50mm including welding of GI flat around pipe .	No.	3,700.00	1	3,700.00
K				**Total Civil & Services**	**17,202.28**
Dismantling Portion					
Sl. No.	***Description of Materials***	***Unit***	***Unit Rate***	***Total Quantity***	***Total Amount***
1	Dismantling for 33 KV PT	No.	18,003.04	1	18,003.04
L				**Total Dismantling**	18,003.04
M				**Total (J+K+L)**	74,788.04
N				Other overheads (Including 6% supervision charges) of M	-
O				**Sub Total (L+M)**	**74,788.04**
P				Total GST @ 18% of (O)	13,461.85
Q				Total CESS @ 1% of (O)	747.88
R				**Gross Total Material +Services (O+P+Q)**	**88,997.77**

Annexure-7

Standard BOQ for 11 KV, Outdoor CT Replacement					
Materials for 11 KV, Outdoor CT					
Sl. No.	***Description of Materials***	***Unit***	***Unit Rate***	***Total Quantity***	***Total Amount***
1	CT 11KV OILCOOLED 200-400-800/1-1-1, 1PH<(>,<)>O/D 11KV OILCOOLED CT, CTR-200-400-800/1-1-1 A (3C,Accuracy Class-PS/0.2S/5P20, Burden-30VA/30VA/30VA)	EA	27,118.00	1	27,118.00
2	Gi Pipe Earthing 40mm. 3 Mtr. Long	No.	1,365.00	1	1,365.00
2	50x6mm GI Flat for earthing, 2.36kg/mtr., (10 Mtr)= 10x2.36	KG	97.50	23.60	2,301.00
	Control Cable				-
3	4Core x 2.5 mm^2	Mtr	165.25	50.00	8,262.50
A				**Total Cost of materials**	39,046.50
B				Stock, Storage & Insurance i.e 3% of A	1,171.40
C				**Sub Total (A+B)**	**40,217.90**
D				Contigency @ 3% of C	1,206.54
E				Tools & Plants @ 2% of C	804.36
F				Transportation @ 7.5% of C	3,016.34
G				Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole	-
H				Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC pole/GI Pipe)	1,088.04
I				Erection Charges @ 20% of PSC pole- Not to be used for 33kv	-
J				**Sum of (C to I)**	**46,333.17**
Civil & Services					
Sl. No.	***Description of Materials***	***Unit***	***Unit Rate***	***Total Quantity***	***Total Amount***
1	Erection of 33KV Outdoor type current Transformer on the existing structure.	No.	5,114.50	1	5,114.50
2	Construction Earthing chamber including installation of earthing pipe.Making earthing chamber including excavation , soil treatment with bentonide powder , calculation of earth resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe .	No.	3,700.00	1	3,700.00
K				**Total Civil & Services**	**8,814.50**
Dismantling Portion					
Sl. No.	***Description of Materials***	***Unit***	***Unit Rate***	***Total Quantity***	***Total Amount***
1	Dismantling for 11 KV CT	No.	18,003.04	1	18,003.04
L				**Total Dismantling**	18,003.04
M				**Total (J+K+L)**	73,150.71
N				Other overheads (Including 6% supervision charges) of M	-
O				**Sub Total (L+M)**	**73,150.71**
P				Total GST @ 18% of (O)	13,167.13
Q				Total CESS @ 1% of (O)	731.51
R				**Gross Total Material +Services (O+P+Q)**	**87,049.35**

Annexure-7

Standard BOQ for 11 KV, Outdoor PT Replacement					
Materials for 11 KV, Outdoor PT					
Sl. No.	***Description of Materials***	***Unit***	***Unit Rate***	***Total Quantity***	***Total Amount***
1	11KV OIL COOL PT 1PH,O/D 11KV OILCOOLED PT, (11KV/ V3 / 110V/ V3) Volt (3C, Accuracy class 3P/3P/0.2, Burden-100 VA)	EA	15,000.00	1	15,000.00
2	Gi Pipe Earthing 40mm. 3 Mtr. Long	No.	1,365.00	1	1,365.00
3	50x6mm GI Flat for earthing, 2.36kg/mtr., (10 Mtr)= 10x2.36	KG	97.50	23.60	2,301.00
	Control Cable				-
4	4Core x 2.5 mm^2	Mtr	165.25	50.00	8,262.50
A				**Total Cost of materials**	26,928.50
B				Stock, Storage & Insurance i.e 3% of A	807.86
C				**Sub Total (A+B)**	**27,736.36**
D				Contigency @ 3% of C	832.09
E				Tools & Plants @ 2% of C	554.73
F				Transportation @ 7.5% of C	2,080.23
G				Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole	-
H				Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC pole/GI PIPE)	1,088.04
I				Erection Charges @ 20% of PSC pole- Not to be used for 33kv	-
J				**Sum of (C to I)**	**32,291.44**
Civil & Services					
Sl. No.	***Description of Materials***	***Unit***	***Unit Rate***	***Total Quantity***	***Total Amount***
1	Erection of 33KV Outdoor type potential Transformer on the existing structure.	No.	5,114.50	1	5,114.50
2	Construction Earthing chamber including installation of earthing pipe.Making earthing chamber including excavation , soil treatment with bentonide powder , calculation of earth resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe .	No.	3,700.00	1	3,700.00
K				**Total Civil & Services**	**3,700.00**
Dismantling Portion					
Sl. No.	***Description of Materials***	***Unit***	***Unit Rate***	***Total Quantity***	***Total Amount***
1	Dismantling for 11 KV PT	No.	18,003.04	1	18,003.04
L				**Total Dismantling**	18,003.04
M				**Total (J+K+L)**	53,994.48
N				Other overheads (Including 6% supervision charges) of M	-
O				**Sub Total (L+M)**	**53,994.48**
P				Total GST @ 18% of (O)	9,719.01
Q				Total CESS @ 1% of (O)	539.94
R				**Gross Total Material +Services (O+P+Q)**	**64,253.43**

Annexure-7					
Standard BoQ and Estimate for 11kV 3C, 400sqmm UG Cable along with 11kV RMU_Replacement					
Supply Portion					
Sl. No.	**Description of items**	**Unit**	**Quantity**	**Rate (in Rs.)**	**Amount (in Rs.)**
1	**Supply of materials for 11kV, 3Core, 400sqmm, XLPE insulation armoured UG cable with accessories**				
a	***Length of 11kV 3C, 400sqmm cable (open trench)***	***Mtr.***	***45***		
1.1	Supply of 11kV, 3Core, 400sqmm, XLPE insulation armoured UG cable (SC rating of cable in kA- 37.7kA and SC rating of Armour in kA- 15kA)	Mtr.	45.00	2,563.51	1,15,357.95
1.3	Supply of **Indoor termination kits** Heat Shrinkable type suitable for 11kV, 3Core, 400 sqmm, HT UG cable for 3Core (Set)	Set	3	12,456.60	37,369.80
1.4	Supply of **Outdoor termination kits** Heat Shrinkable type suitable for 11kV, 3Core, 400 sqmm, HT UG cable for 3Core (Set)	Set	3	18,075.20	54,225.60
1.5	Supply of **HDPE** PE 80-PN8 pipe of **160mm** diameter (for 400sqmm HT cable laying)	Mtr.	0.00	775.40	-
2	**Supply of 11kV RMU**				
a	***No. of 11kV 3Way RMU (LLV)***	***nos.***	***1***		
2.1	Supply of 11kV RMU 3 Way, 2 Iso & 1 Brk 630A (LLV)	Nos.	1	4,99,340.00	4,99,340.00
3	**Earthing**				
3.1	Earthing Conductor: **50X6 mm** (2.4kg./mtr.) **GI Flat** for equipment, structure etc.)	kg	13.20	97.50	1,287.00
3.2	Pipe Earthing 40mm. GI Pipe	Nos.	2	1,365.00	2,730.00
4	**FRTU for RMU SCADA Automation**				
a	***No. of FRTU***	***nos.***	***1***		
4.1	Pre-Wired FRTU Panel with FRTU	No.	1	1,21,744.00	1,21,744.00
4.2	Managed Layer2 Ethernet Switch (FRTU Panel)	No.	1	1,00,000.00	1,00,000.00
4.3	Networking Accessories	No.	1	72.00	72.00
4.4	CMR with Mounting Base for Digital Inputs	Nos.	32	650.00	20,800.00
4.5	Interposing Relay for Digital Output	Nos.	16	467.94	7,487.04
4.6	Battery Charger	Nos.	1	15,385.00	15,385.00
4.7	Battery	Nos.	1	8,333.00	8,333.00
4.8	4G Modem cum Router	Nos.	1	18,500.00	18,500.00
4.9	Instrumentation Cable 12 C X 0.5 mm2, Armored cable for Status and Indications	Mtr.	40	204.87	8,194.80
4.10	Instrumentation Cable 7 C X 1.5 mm2, Armored for Control Output	Mtr.	40	305.58	12,223.20
4.11	Twisted Pair Shielded & Over all shielded Instrumentation Cable 5 P X 1.0 mm2, Armored for Analog Input	Mtr.	40	275.23	11,009.20
4.12	4 C X 2.5 mm2 Copper cable for extension of CT & PT	Mtr.	20	165.25	3,305.00
4.13	2 C X 4 mm2 Cable for DC Power Supply	Mtr.	10	150.00	1,500.00
4.14	4P X 0.36 mm2, Armored Communication Cable for MFM	Mtr.	20.0	148.43	2,968.60

4.15	Armored CAT6 SFTP Cable	Mtr.	20	45.87	917.40
4.16	Un-Armored CAT6 SFTP Cable	Mtr.	20	89.45	1,789.00
4.17	Multi Function Meter	Nos.	2	18,651.00	37,302.00
	Sub Total (Supply Portion) (in Rs.)				**10,81,840.59**

Erection Portion

Sl. No.	**Description of items**	**Unit**	**Quantity**	**Rate (in Rs.)**	**Amount (in Rs.)**
1	**Laying, Commissioning, Testing of 11kV, 3core, 400sqmm, aluminium, XLPE insulation armoured (extruded type) UG cable by open trench method and HDD method**				
1.1	Laying, Commissioning, Testing of 11kV, 3core, 400sqmm, aluminium, XLPE insulation armoured (extruded type) UG cable by **open trench method**.	Mtr.	45.00	94.50	4,252.50
1.3	Erection of **Indoor termination kits** Heat Shrinkable type suitable for 11kV, 3Core, 400sqmm, aluminium UG cable kits for 3core (set)	Set	3	1,900.80	5,702.40
1.4	Erection of **Outdoor termination kits** Heat Shrinkable type suitable for 11kV, 3Core, 400sqmm, aluminium UG cable kits for 3core (set)	Set	3	1,900.80	5,702.40
2	**Erection, Commissioning, Wiring and Testing of 11kV RMU**				
2.1	Erection of 11kV RMU 3 Way, 2 Iso & 1 Brk 630A (LLV)	Nos.	1	9,639.00	9,639.00
3	**FRTU and OFC for RMU SCADA Automation**				
3.1	Services of FRTU Panel, Communication and Other Supplied System	EA	1.0	16,000.00	16,000.00
	Sub Total (Erection Portion) (in Rs.)				**41,296.30**

Civil Portion

Sl. No.	**Description of items**	**Unit**	**Quantity**	**Rate (in Rs.)**	**Amount (in Rs.)**
2	**Civil works for Prefabricated RCC foundation with supply of all materials**				
2.1	Prefabricated RCC foundation of 11kV RMU	Nos.	1	23,145.30	23,145.30
3	Supply of GI Fencing with Gate around each **RMU**	sqmtr	20	3,600.00	72,000.00
4	Construction Earthing chamber including installation of earthing pipe.Making earthing chamber including excavation , soil treatment with bentonide powder , calculation of earth resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe .	Set	2	3,700.00	7,400.00
5	Supply and erection of GI Pipe of dia. 150mm, Class-B (8Mtr.)	Mtr	24	1,463.40	35,121.60
6	Dismantling / Removal of 3way or 4 way RMU from existing foundation including loading, transportation, unloading and staking of dismantled material at a proper place in safe position or TPCODL store(Divisional store/Central Store upto 20Km) . Beyond the 20Km ,extra payment will be done.		1	7,808.61	7,808.61
7	Supply and Erection of Cable Route Marker along the cable route at an interval of 30mtrs with civil works	Nos.	2	1,012.00	2,024.00
	Sub Total (Civil Portion) (in Rs.)				**1,47,499.51**
A	**Sub Total (Supply Portion)**				**10,81,840.59**
B	Stock, Storage & Insurance @ 3 % of A				32,455.22

C	**Sub Total (A+B)**	**11,14,295.81**
D	Contingency @ 3 % of C	33,428.87
E	Tools & Plants Charges @ 2% of C (considered for earthing items)	26.51
F	Transportation @ 7.5% of C	83,572.19
G	Erection Charges @ 10% of earthing items	132.56
H	**Total (C+D+E+F+G)**	**12,31,455.94**
I	Sub Total (Erection Portion + Civil Portion)	1,88,795.81
J	**Total Cost (H+I)**	**14,20,251.75**
K	Other Overhead /(including Supervision Charges) @ 6 % of J	-
L	**Total Estimated Capital Cost i.e. (J+K)**	14,20,251.75
M	GST @ 18% of L	2,55,645.32
M1	Total CESS @ 1% of (L)	14,202.52
N	**Grand Total (L+M+M1)**	**16,90,099.59**
O	Inspection Fee of UG Line (HT) - Rs. 375 upto 1 KM.	375.00
P	Inspection Fee of UG Line (HT) - Rs. 225/ Additional Km	
Q	Inspection Fee of RMU - Rs. 1500/ RMU	1,500.00
R	Inspection Fee of Drawing Checking and Approval	750.00
S	**Gross Total Material, Services and Inspection Fees (N+O+P+Q+R)**	**16,92,724.59**

Annexure-7					
Standard BoQ and Estimate for 11kV 3C, 400sqmm UG Cable along with 11kV RMU_Replacement					
Supply Portion					
Sl. No.	**Description of items**	**Unit**	**Quantity**	**Rate (in Rs.)**	**Amount (in Rs.)**
1	**Supply of materials for 11kV, 3Core, 400sqmm, XLPE insulation armoured UG cable with accessories**				
a	***Length of 11kV 3C, 400sqmm cable (open trench)***	***Mtr.***	***45***		
b	***Length of 11kV 3C, 400sqmm cable (HDD)***	***Mtr.***			
1.1	Supply of 11kV, 3Core, 400sqmm, XLPE insulation armoured UG cable (SC rating of cable in kA- 37.7kA and SC rating of Armour in kA- 15kA)	Mtr.	45.00	2,563.51	1,15,357.95
1.3	Supply of **Indoor termination kits** Heat Shrinkable type suitable for 11kV, 3Core, 400 sqmm, HT UG cable for 3Core (Set)	Set	4	12,456.60	49,826.40
1.4	Supply of **Outdoor termination kits** Heat Shrinkable type suitable for 11kV, 3Core, 400 sqmm, HT UG cable for 3Core (Set)	Set	4	18,075.20	72,300.80
1.5	Supply of **HDPE** PE 80-PN8 pipe of **160mm** diameter (for 400sqmm HT cable laying)	Mtr.	0.00	775.40	-
2	**Supply of 11kV RMU**				
a	***No. of 11kV 3Way RMU (LLV)***	***nos.***			
b	***No. of 11kV 4Way RMU (LLVV)***	***nos.***	***1***		
2.2	Supply of 11kV RMU 4 Way, 2 Iso & 2 Brk 630A (LLVV)	Nos.	1	6,97,696.00	6,97,696.00
3	**Earthing**				
3.1	Earthing Conductor: **50X6 mm** (2.4kg./mtr.) **GI Flat** for equipment, structure etc.)	kg	13.20	97.50	1,287.00
3.2	Pipe Earthing 40mm. GI Pipe	Nos.	2	1,365.00	2,730.00
4	**FRTU for RMU SCADA Automation**				
a	***No. of FRTU***	***nos.***	***1***		
4.1	Pre-Wired FRTU Panel with FRTU	No.	1	1,21,744.00	1,21,744.00
4.2	Managed Layer2 Ethernet Switch (FRTU Panel)	No.	1	1,00,000.00	1,00,000.00
4.3	Networking Accessories	No.	1	72.00	72.00
4.4	CMR with Mounting Base for Digital Inputs	Nos.	32	650.00	20,800.00
4.5	Interposing Relay for Digital Output	Nos.	16	467.94	7,487.04
4.6	Battery Charger	Nos.	1	15,385.00	15,385.00
4.7	Battery	Nos.	1	8,333.00	8,333.00
4.8	4G Modem cum Router	Nos.	1	18,500.00	18,500.00
4.9	Instrumentation Cable 12 C X 0.5 mm2, Armored cable for Status and Indications	Mtr.	40	204.87	8,194.80
4.10	Instrumentation Cable 7 C X 1.5 mm2, Armored for Control Output	Mtr.	40	305.58	12,223.20
4.11	Twisted Pair Shielded & Over all shielded Instrumentation Cable 5 P X 1.0 mm2, Armored for Analog Input	Mtr.	40	275.23	11,009.20
4.12	4 C X 2.5 mm2 Copper cable for extension of CT & PT	Mtr.	20	165.25	3,305.00
4.13	2 C X 4 mm2 Cable for DC Power Supply	Mtr.	10	150.00	1,500.00

4.14	4P X 0.36 mm2, Armored Communication Cable for MFM	Mtr.	20.0	148.43	2,968.60
4.15	Armored CAT6 SFTP Cable	Mtr.	20	45.87	917.40
4.16	Un-Armored CAT6 SFTP Cable	Mtr.	20	89.45	1,789.00
4.17	Multi Function Meter	Nos.	2	18,651.00	37,302.00
	Sub Total (Supply Portion) (in Rs.)				**13,10,728.39**

Erection Portion

Sl. No.	**Description of items**	**Unit**	**Quantity**	**Rate (in Rs.)**	**Amount (in Rs.)**
1	**Laying, Commissioning, Testing of 11kV, 3core, 400sqmm, aluminium, XLPE insulation armoured (extruded type) UG cable by open trench method and HDD method**				
1.1	Laying, Commissioning, Testing of 11kV, 3core, 400sqmm, aluminium, XLPE insulation armoured (extruded type) UG cable by **open trench method**.	Mtr.	45.00	94.50	4,252.50
1.3	Erection of **Indoor termination kits** Heat Shrinkable type suitable for 11kV, 3Core, 400sqmm, aluminium UG cable kits for 3core (set)	Set	4	1,900.80	7,603.20
1.4	Erection of **Outdoor termination kits** Heat Shrinkable type suitable for 11kV, 3Core, 400sqmm, aluminium UG cable kits for 3core (set)	Set	4	1,900.80	7,603.20
2	**Erection, Commissioning, Wiring and Testing of 11kV RMU**				
2.2	Erection of 11kV RMU 4 Way, 2 Iso & 2 Brk 630A (LLVV)	Nos.	1	9,639.00	9,639.00
3	**FRTU and OFC for RMU SCADA Automation**				
3.1	Services of FRTU Panel, Communication and Other Supplied System	EA	1.0	16,000.00	16,000.00
	Sub Total (Erection Portion) (in Rs.)				**45,097.90**

Civil Portion

Sl. No.	**Description of items**	**Unit**	**Quantity**	**Rate (in Rs.)**	**Amount (in Rs.)**
2	**Civil works for Prefabricated RCC foundation with supply of all materials**				
2.1	Prefabricated RCC foundation of 11kV RMU	Nos.	1	23,145.30	23,145.30
3	Supply of GI Fencing with Gate around each **RMU**	sqmtr	20	3,600.00	72,000.00
4	Construction Earthing chamber including installation of earthing pipe.Making earthing chamber including excavation , soil treatment with bentonide powder , calculation of earth resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe .	Set	2	3,700.00	7,400.00
5	Supply and erection of GI Pipe of dia. 150mm, Class-B (8Mtr.)	Mtr	32	1,463.40	46,828.80
6	Dismantling / Removal of 3way or 4 way RMU from existing foundation including loading, transportation, unloading and staking of dismantled material at a proper place in safe position or TPCODL store(Divisional store/Central Store upto 20Km) . Beyond the 20Km ,extra payment will be done.		1	7,808.61	7,808.61
7	Supply and Erection of Cable Route Marker along the cable route at an interval of 30mtrs with civil works	Nos.	2	1,012.00	2,024.00
	Sub Total (Civil Portion) (in Rs.)				**1,59,206.71**

A	**Sub Total (Supply Portion)**	**13,10,728.39**
B	Stock, Storage & Insurance @ 3 % of A	39,321.85
C	**Sub Total (A+B)**	**13,50,050.24**
D	Contingency @ 3 % of C	40,501.51
E	Tools & Plants Charges @ 2% of C (considered for earthing items)	26.51
F	Transportation @ 7.5% of C	1,01,253.77
G	Erection Charges @ 10% of earthing items	132.56
H	**Total (C+D+E+F+G)**	**14,91,964.59**
I	Sub Total (Erection Portion + Civil Portion)	2,04,304.61
J	**Total Cost (H+I)**	**16,96,269.20**
K	Other Overhead /(including Supervision Charges) @ 6 % of J	-
L	**Total Estimated Capital Cost i.e. (J+K)**	16,96,269.20
M	GST @ 18% of L	3,05,328.46
M1	Total CESS @ 1% of (L)	16,962.69
N	**Grand Total (L+M+M1)**	**20,18,560.35**
O	Inspection Fee of UG Line (HT) - Rs. 375 upto 1 KM.	375.00
P	Inspection Fee of UG Line (HT) - Rs. 225/ Additional Km	
Q	Inspection Fee of RMU - Rs. 1500/ RMU	1,500.00
R	Inspection Fee of Drawing Checking and Approval	750.00
S	**Gross Total Material, Services and Inspection Fees (N+O+P+Q+R)**	**20,21,185.35**

Annexure-7					
Standard BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU_Replacement					
Supply Portion					
Sl. No.	**Description of items**	**Unit**	**Quantity**	**Rate (in Rs.)**	**Amount (in Rs.)**
1	**Supply of materials for 33kV, 1Core, 630sqmm Aluminium, XLPE insulation U/G Cable (aloing with 1core spare cable) with accessories**				
a	***Length of 33kV 1C, 630sqmm cable (open trench)***	***Mtr.***	***45***		
1.1	Supply of 33kV, 1Core, 630sqmm Aluminium, XLPE insulation U/G Cable (SC rating of cable in kA- 59.4kA and SC rating of Armour in kA-20kA)	Mtr.	135	1,495.47	2,01,888.45
1.3	Supply of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT U/G Cable kits for 1Core	Set	3	6,350.00	19,050.00
1.4	Supply of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT U/G Cable kits for 1Core	Set	3	6,100.00	18,300.00
1.5	Supply of materials for High Density Polyethelene (HDPE) pipe 110mm diameter, PE 80- PN8 for laying of 33kV U/G cable	Mtr.	111.00	357.60	39,693.60
2	**Supply of 33kV RMU**				
c	***No. of 33kV 3Way RMU (LLV)***	***nos.***	***1***		
2.3	Supply of RMU 33KV 3WAY 630A (2ISLTR+ 1BKR) (LLV)	Nos.	1	17,87,101.00	17,87,101.00
3	**Earthing**				
3.1	Earthing Conductor: **50X6 mm** (2.4kg./mtr.) **GI Flat** for equipment, structure etc.)	kg	13.20	97.50	1,287.00
3.2	Pipe Earthing 40mm. GI Pipe	Nos.	2	1,365.00	2,730.00
4	**FRTU for RMU SCADA Automation**				
a	***No. of FRTU***	***nos.***	***1***		
4.1	Pre-Wired FRTU Panel with FRTU	No.	1	1,21,744.00	1,21,744.00
4.2	Managed Layer2 Ethernet Switch (FRTU Panel)	No.	1	1,00,000.00	1,00,000.00
4.3	Networking Accessories	No.	1	72.00	72.00
4.4	CMR with Mounting Base for Digital Inputs	Nos.	32	650.00	20,800.00
4.5	Interposing Relay for Digital Output	Nos.	16	467.94	7,487.04
4.6	Battery Charger	Nos.	1	15,385.00	15,385.00
4.7	Battery	Nos.	1	8,333.00	8,333.00
4.8	4G Modem cum Router	Nos.	1	18,500.00	18,500.00
4.9	Instrumentation Cable 12 C X 0.5 mm2, Armored cable for Status and Indications	Mtr.	40	204.87	8,194.80
4.10	Instrumentation Cable 7 C X 1.5 mm2, Armored for Control Output	Mtr.	40	305.58	12,223.20
4.11	Twisted Pair Shielded & Over all shielded Instrumentation Cable	Mtr.	40	275.23	11,009.20
4.12	4 C X 2.5 mm2 Copper cable for extension of CT & PT	Mtr.	20	165.25	3,305.00

4.13	2 C X 4 mm2 Cable for DC Power Supply	Mtr.	10	150.00	1,500.00
4.14	4P X 0.36 mm2, Armored Communication Cable for MFM	Mtr.	20.0	148.43	2,968.60
4.15	Armored CAT6 SFTP Cable	Mtr.	20	45.87	917.40
4.16	Un-Armored CAT6 SFTP Cable	Mtr.	20	89.45	1,789.00
4.17	Multi Function Meter	Nos.	2	18,651.00	37,302.00
	Sub Total (Supply Portion) (in Rs.)				**24,41,580.29**

Erection Portion

Sl. No.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)
1	**Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare**				
1.1	Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by **open trench method**.	Mtr.	135	94.50	12,757.50
1.3	Erection of **Outdoor termination kits** Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits	Set	3	2,081.70	6,245.10
1.4	Erection of **Indoor termination kits** Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits	Set	3	2,081.70	6,245.10
1.6	Laying of **110mm dia** PE 80-PN8, **HDPE pipe** inside open trench.	Mtr.	111.00	300.00	33,300.00
2	**Erection, Commissioning, Wiring and Testing of 33kV RMU**				
2.3	Erection of RMU 33KV 3WAY 630A (2ISLTR+ 1BKR) (LLV)	Nos.	1	8,000.00	8,000.00
3	**FRTU and OFC for RMU SCADA Automation**				
3.1	Services of FRTU Panel, Communication and Other Supplied System	EA	1.0	16,000.00	16,000.00
	Sub Total (Erection Portion) (in Rs.)				**82,547.70**

Civil Portion

Sl. No.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)
1	**Civil works with supply of all materials like cement, MS tor rod, brick, coarse & fine aggregates and labour, T&P, etc for UG Cable Trench**				
1.1	Earth work excavation of soil (1mtr. width X 1.2mtr. depth)-Route Length	Mtr	37		
1.1.a	Earth work excavation of **soil**	Cum	31.08	700.00	21,756.00
1.1.b	Earth work excavation of **hard rock**	Cum	13.32	1,720.00	22,910.40
1.2	Back filling with excavated soil outside and above the trench	Cum	44.4	202.00	8,968.80
1.3	Damage of asphalt/tar road and other utilities and reconstructing to bring to its original shape after laying of cable in open trench (1mtr. width)	Mtr	11.1	2,643.67	29,344.74
2	**Civil works for Prefabricated RCC foundation with supply of all materials**				
2.1	Prefabricated RCC foundation of 33kV RMU	Nos.	1	23,145.30	23,145.30
3	Supply of GI Fencing with Gate around each **RMU**	sqmtr	20	3,600.00	72,000.00

4	Construction Earthing chamber including installation of earthing pipe.Making earthing chamber including excavation , soil treatment with bentonide powder , calculation of earth resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe .	Set	2	3,700.00	7,400.00
5	Supply and erection of GI Pipe of dia. 150mm, Class-B (8Mtr.)	Mtr	24	1,463.40	35,121.60
6	Dismantling / Removal of 3way or 4 way RMU from existing foundation including loading, transportation, unloading and staking of dismantled material at a proper place in safe position or TPCODL store(Divisional store/Central Store upto 20Km) . Beyond the 20Km ,extra payment will be done.		1	7,808.61	7,808.61
7	Supply and Erection of Cable Route Marker along the cable route at an interval of 30mtrs with civil works	Nos.	2	1,012.00	2,024.00
	Sub Total (Civil Portion) (in Rs.)				**2,30,479.46**
A	**Sub Total (Supply Portion)**				**24,41,580.29**
B	Stock, Storage & Insurance @ 3 % of A				73,247.41
C	**Sub Total (A+B)**				**25,14,827.70**
D	Contingency @ 3 % of C				75,444.83
E	Tools & Plants Charges @ 2% of C (considered for earthing items)				26.51
F	Transportation @ 7.5% of C				1,88,612.08
G	Erection Charges @ 10% of earthing items				132.56
H	**Total (C+D+E+F+G)**				**27,79,043.68**
I	Sub Total (Erection Portion + Civil Portion)				3,13,027.16
J	**Total Cost (H+I)**				**30,92,070.84**
K	Other Overhead /(including Supervision Charges) @ 6 % of J				-
L	**Total Estimated Capital Cost i.e. (J+K)**				**30,92,070.84**
M	GST @ 18% of L				5,56,572.75
M1	CESS @ 1% of L				30,920.71
N	**Grand Total (L+M+M1)**				**36,79,564.30**
O	Inspection Fee of UG Line (HT) - Rs. 3000/ km.				-
P	Inspection Fee of UG Line (HT) - Rs. 1500/ Additional Km				
Q	Inspection Fee of RMU - Rs. 1500/ RMU				1,500.00
R	Inspection Fee of Drawing Checking and Approval				750.00
S	**Gross Total Material, Services and Inspection Fees (N+O+P+Q+R)**				**36,81,814.30**

Annexure-7					
Standard BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU_Replacement					
Supply Portion					
Sl. No.	**Description of items**	**Unit**	**Quantity**	**Rate (in Rs.)**	**Amount (in Rs.)**
1	**Supply of materials for 33kV, 1Core, 630sqmm Aluminium, XLPE insulation U/G Cable (aloing with 1core spare cable) with accessories**				
a	***Length of 33kV 1C, 630sqmm cable (open trench)***	***Mtr.***	***45***		
1.1	Supply of 33kV, 1Core, 630sqmm Aluminium, XLPE insulation U/G Cable (SC rating of cable in kA- 59.4kA and SC rating of Armour in kA-20kA)	Mtr.	135	1,495.47	2,01,888.45
1.3	Supply of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT U/G Cable kits for 1Core	Set	4	6,350.00	25,400.00
1.4	Supply of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT U/G Cable kits for 1Core	Set	4	6,100.00	24,400.00
1.5	Supply of materials for High Density Polyethelene (HDPE) pipe 110mm diameter, PE 80- PN8 for laying of 33kV U/G cable	Mtr.	103.00	357.60	36,832.80
2	**Supply of 33kV RMU**				
d	***No. of 33kV 4Way RMU (LLVV)***	***nos.***	***1***		
2.4	Supply of RMU 33KV 4WAY 630A (2ISLTR+2 BKR) (LLVV)	Nos.	1	23,35,264.00	23,35,264.00
3	**Earthing**				
3.1	Earthing Conductor: **50X6 mm** (2.4kg./mtr.) **GI Flat** for equipment, structure etc.)	kg	13.20	97.50	1,287.00
3.2	Pipe Earthing 40mm. GI Pipe	Nos.	2	1,365.00	2,730.00
4	**FRTU for RMU SCADA Automation**				
a	***No. of FRTU***	***nos.***	***1***		
4.1	Pre-Wired FRTU Panel with FRTU	No.	1	1,21,744.00	1,21,744.00
4.2	Managed Layer2 Ethernet Switch (FRTU Panel)	No.	1	1,00,000.00	1,00,000.00
4.3	Networking Accessories	No.	1	72.00	72.00
4.4	CMR with Mounting Base for Digital Inputs	Nos.	32	650.00	20,800.00
4.5	Interposing Relay for Digital Output	Nos.	16	467.94	7,487.04
4.6	Battery Charger	Nos.	1	15,385.00	15,385.00
4.7	Battery	Nos.	1	8,333.00	8,333.00
4.8	4G Modem cum Router	Nos.	1	18,500.00	18,500.00
4.9	Instrumentation Cable 12 C X 0.5 mm2, Armored cable for Status and Indications	Mtr.	40	204.87	8,194.80
4.10	Instrumentation Cable 7 C X 1.5 mm2, Armored for Control Output	Mtr.	40	305.58	12,223.20
4.11	Twisted Pair Shielded & Over all shielded Instrumentation Cable	Mtr.	40	275.23	11,009.20
4.12	4 C X 2.5 mm2 Copper cable for extension of CT & PT	Mtr.	20	165.25	3,305.00
4.13	2 C X 4 mm2 Cable for DC Power Supply	Mtr.	10	150.00	1,500.00

4.14	4P X 0.36 mm2, Armored Communication Cable for MFM	Mtr.	20.0	148.43	2,968.60
4.15	Armored CAT6 SFTP Cable	Mtr.	20	45.87	917.40
4.16	Un-Armored CAT6 SFTP Cable	Mtr.	20	89.45	1,789.00
4.17	Multi Function Meter	Nos.	2	18,651.00	37,302.00
	Sub Total (Supply Portion) (in Rs.)				**29,99,332.49**

Erection Portion

Sl. No.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)
1	**Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare**				
1.1	Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by **open trench method**.	Mtr.	135	94.50	12,757.50
1.3	Erection of **Outdoor termination kits** Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits	Set	4	2,081.70	8,326.80
1.4	Erection of **Indoor termination kits** Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits	Set	4	2,081.70	8,326.80
1.6	Laying of **110mm dia** PE 80-PN8, **HDPE pipe** inside open trench.	Mtr.	103.00	300.00	30,900.00
2	**Erection, Commissioning, Wiring and Testing of 33kV RMU**				
2.4	Erection of RMU 33KV 4WAY 630A (2ISLTR+2 BKR) (LLVV)	Nos.	1	8,000.00	8,000.00
3	**FRTU and OFC for RMU SCADA Automation**				
3.1	Services of FRTU Panel, Communication and Other Supplied System	EA	1.0	16,000.00	16,000.00
	Sub Total (Erection Portion) (in Rs.)				**84,311.10**

Civil Portion

Sl. No.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)
1	**Civil works with supply of all materials like cement, MS tor rod, brick, coarse & fine aggregates and labour, T&P, etc for UG Cable Trench**				
1.1	Earth work excavation of soil (1mtr. width X 1.2mtr. depth)-Route Length	Mtr	34.3333		
1.1.a	Earth work excavation of **soil**	Cum	28.84	700.00	20,188.00
1.1.b	Earth work excavation of **hard rock**	Cum	12.36	1,720.00	21,259.20
1.2	Back filling with excavated soil outside and above the trench	Cum	41.2	202.00	8,322.40
1.3	Damage of asphalt/tar road and other utilities and reconstructing to bring to its original shape after laying of cable in open trench (1mtr. width)	Mtr	10.3	2,643.67	27,229.81
2	**Civil works for Prefabricated RCC foundation with supply of all materials**				
2.1	Prefabricated RCC foundation of 33kV RMU	Nos.	1	23,145.30	23,145.30
3	Supply of GI Fencing with Gate around each **RMU**	sqmtr	20	3,600.00	72,000.00

4	Construction Earthing chamber including installation of earthing pipe.Making earthing chamber including excavation , soil treatment with bentonide powder , calculation of earth resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe .	Set	2	3,700.00	7,400.00
5	Supply and erection of GI Pipe of dia. 150mm, Class-B (8Mtr.)	Mtr	32	1,463.40	46,828.80
6	Dismantling / Removal of 3way or 4 way RMU from existing foundation including loading, transportation, unloading and staking of dismantled material at a proper place in safe position or TPCODL store(Divisional store/Central Store upto 20Km) . Beyond the 20Km ,extra payment will be done.		1	7,808.61	7,808.61
7	Supply and Erection of Cable Route Marker along the cable route at an interval of 30mtrs with civil works	Nos.	2	1,012.00	2,024.00
	Sub Total (Civil Portion) (in Rs.)				**2,36,206.12**
A	**Sub Total (Supply Portion)**				**29,99,332.49**
B	Stock, Storage & Insurance @ 3 % of A				89,979.97
C	**Sub Total (A+B)**				**30,89,312.46**
D	Contingency @ 3 % of C				92,679.37
E	Tools & Plants Charges @ 2% of C (considered for earthing items)				26.51
F	Transportation @ 7.5% of C				2,31,698.43
G	Erection Charges @ 10% of earthing items				132.56
H	**Total (C+D+E+F+G)**				**34,13,849.35**
I	Sub Total (Erection Portion + Civil Portion)				3,20,517.22
J	**Total Cost (H+I)**				**37,34,366.57**
K	Other Overhead /(including Supervision Charges) @ 6 % of J				-
L	**Total Estimated Capital Cost i.e. (J+K)**				**37,34,366.57**
M	GST @ 18% of L				6,72,185.98
M1	CESS @ 1% of L				37,343.67
N	**Grand Total (L+M+M1)**				**44,43,896.22**
O	Inspection Fee of UG Line (HT) - Rs. 3000/ km.				-
P	Inspection Fee of UG Line (HT) - Rs. 1500/ Additional Km				
Q	Inspection Fee of RMU - Rs. 1500/ RMU				1,500.00
R	Inspection Fee of Drawing Checking and Approval				750.00
S	**Gross Total Material, Services and Inspection Fees (N+O+P+Q+R)**				**44,46,146.22**

Annexure-7

Standard Estimate for 11/0.433kV, 630kVA CSS_ Replacement

	No. of CSS	1

Supply Portion

Sl. No.	***Description of Materials***	***Unit***	***Unit Rate***	***Total Quantity***	***Total Amount***
1	630 KVA , 11/ 0.433 KV Compact Sub-station	Nos.	33,10,381.00	1	33,10,381.00
2	50x6mm GI Flat for earthing, 2.36kg/mtr., (2.5x7 mtr. For mesh formation, 10x2 mtr. for DTR Nutral, (5+5) mtr. For DTR Body,3 mtr. for Fencing, (5+5) mtr. For RMU Body) (Each 60.5x 2.36=142.78 Kg)	KG	97.50	142.78	13,921.05
3	40 mm Nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	1,365.00	7	9,555.00
4	**FRTU for RMU SCADA Automation**				
a	***No. of FRTU***	***nos.***			
4.1	Pre-Wired FRTU Panel with FRTU	No.	1,21,744.00	1	1,21,744.00
4.2	Managed Layer2 Ethernet Switch (FRTU Panel)	No.	1,00,000.00	1	1,00,000.00
4.3	Networking Accessories	No.	72.00	1	72.00
4.4	CMR with Mounting Base for Digital Inputs	Nos.	650.00	32	20,800.00
4.5	Interposing Relay for Digital Output	Nos.	467.94	16	7,487.04
4.6	Battery Charger	Nos.	15,385.00	1	15,385.00
4.7	Battery	Nos.	8,333.00	1	8,333.00
4.8	4G Modem cum Router	Nos.	18,500.00	1	18,500.00
4.9	Instrumentation Cable 12 C X 0.5 mm2, Armored cable for Status and Indications	Mtr.	204.87	40	8,194.80
4.10	Instrumentation Cable 7 C X 1.5 mm2, Armored for Control Output	Mtr.	305.58	40	12,223.20
4.11	Twisted Pair Shielded & Over all shielded Instrumentation Cable 5 P X 1.0 mm2, Armored for Analog Input	Mtr.	275.23	40	11,009.20
4.12	4 C X 2.5 mm2 Copper cable for extension of CT & PT	Mtr.	165.25	20	3,305.00
4.13	2 C X 4 mm2 Cable for DC Power Supply	Mtr.	150.00	10	1,500.00
4.14	4P X 0.36 mm2, Armored Communication Cable for MFM	Mtr.	148.43	20	2,968.60
4.15	Armored CAT6 SFTP Cable	Mtr.	45.87	20	917.40
4.16	Un-Armored CAT6 SFTP Cable	Mtr.	89.45	20	1,789.00
4.17	Multi Function Meter	Nos.	18,651.00	2	37,302.00
A				**Total Cost of materials**	**37,05,387.29**
B				Stock, Storage & Insurance i.e 3% of A	1,11,161.62
C				**Sub Total (A+B)**	**38,16,548.91**
D				Contigency @ 3% of C	1,14,496.47
E				Tools & Plants @ 2% of C	286.77
F				Transportation @ 7.5% of C	2,86,241.17
G				Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole	-
H				Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC Pole)	1,433.87
I				Erection Charges @ 20% of PSC pole- Not to be used for 33kv	-
J				**Sub Total (Supply Portion) (C to I)**	**42,19,007.19**

Erection Portion

Sl. No.	***Description of Materials***	***Unit***	***Unit Rate***	***Total Quantity***	***Total Amount***
1	Erection of 630 KVA , 11/ 0.4 KV Compact substation	NO	39,042.00	1.00	39,042.00
2	**FRTU and OFC for RMU SCADA Automation**				
2.1	Services of FRTU Panel, Communication and Other Supplied System	EA	16,000.00	1.00	16,000.00

	Sub Total (Erection Portion)				**55,042.00**
Civil Portion					
Sl. No.	***Description of Materials***	***Unit***	***Unit Rate***	***Total Quantity***	***Total Amount***
1	Construction Earthing chamber including installation of earthing pipe.Making earthing chamber including excavation , soil treatment with bentonide powder , calculation of earth resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe .	No.	3,700.00	7	25,900.00
2	CSS Foundation	NO	45,006.58	1	45,006.58
3	Supply and Erection of GI Fencing with Gate	Sqmtr.	3,600.00	30	1,08,000.00
4	Dismantlling	No.	20,000.00	1	20,000.00
K	**Sub Total (Civil Portion)**				**1,98,906.58**
L	**Sub Total (Erection Portion + Civil Portion)**				**2,53,948.58**
M	**Total (J+L)**				**44,72,955.77**
N	Other overheads (Including 6% supervision charges) of M				
O	**Sub Total (M+N)**				**44,72,955.77**
P	Total GST @ 18% of (O)				8,05,132.04
Q	Total CESS @ 1% of (O)				44,729.56
R	**Gross Total Material +Services (O+P+Q)**				**53,22,817.36**
S	Inspection Fee of Transformer (100kVA to 1000kVA)				10,500.00
T	Inspection Fee of Drawing Checking and Approval				750.00
U	**Gross Total Material, Services and Inspection Fees (R+S+T)**				**53,34,067.36**

Annexure-7

Standard BOQ for 33kV AIS Switchgear Panel					
Sl. No.	***Description of Materials***	***Unit***	***Unit Rate***	***Total Quantity***	***Total Amount***
1	33 KV 1250A AIS Switchgear Panel (2I/C+2O/G+1BC+2BUSPT)	Set	90,00,000.00	1	90,00,000.00
2	Gi Pipe Earthing 40mm. 3 Mtr. Long	No.	1,365.00	2	2,730.00
3	50x6mm GI Flat for earthing, 2.36kg/mtr., (5 Mtr for each VCB)= 5x2.36x2	KG	97.50	23.60	2,301.00
A				**Total Cost of materials**	90,05,031.00
B				Stock, Storage & Insurance i.e 3% of A	2,70,150.93
C				**Sub Total (A+B)**	**92,75,181.93**
D				Contigency @ 3% of C	2,78,255.46
E				Tools & Plants @ 2% of C	1,85,503.64
F				Transportation @ 7.5% of C	6,95,638.64
G				Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole	-
H				Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC pole/GI Pipe)	237.00
I				Erection Charges @ 20% of PSC pole- Not to be used for 33kv	
J				**Sum of (C to I)**	**1,04,34,816.67**
Civil & Services					
Sl. No.	***Description of Materials***	***Unit***	***Unit Rate***	***Total Quantity***	***Total Amount***
1	Erection of 33 KV 1250A AIS Switchgear Panel (2I/C+2O/G+1BC+2BUSPT)	No.	4,95,600.00	1	4,95,600.00
2	Construction Earthing chamber including installation of earthing pipe.Making earthing chamber including excavation , soil treatment with bentonide powder , calculation of earth resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe .	No.	3,700.00	1	3,700.00
K				**Total Civil & Services**	**4,99,300.00**
Dismantling Portion					
Sl. No.	***Description of Materials***	***Unit***	***Unit Rate***	***Total Quantity***	***Total Amount***
1	Dismantling for 33KV Panel	No.	18,003.04	7	1,26,021.28
L				**Total Dismantling**	1,26,021.28
M				**Total (J+K+L)**	1,10,60,137.95
N				Other overheads (Including 6% supervision charges) of M	-
O				**Sub Total (L+M)**	**1,10,60,137.95**
P				Total GST @ 18% of (O)	19,90,824.83
Q				Total CESS @ 1% of (O)	1,10,601.38
R				**Gross Total Material +Services (O+P+Q)**	**1,31,61,564.17**