

TAMILNADU GENERATION & DISTRIBUTION CORPORATION LIMITED

From
Er.N.BALAJI, M.E.,
Chief Engineer/Planning & RC,
144, Anna Salai,
Chennai.2

To
All the Chief Engineers/Distribution Regions &
All the Superintending Engineers/EDCs

Lr.No.CE/PLG&RC/SE/RE&I(D)/EE/PC-I/A2/F.cd 21-22/D.74/2021, Dt.31.03.2021

Sir,
Sub: TANGEDCO – Cost Data 2021-22 rates for Materials – Communicated –
Regarding

The soft copy of Cost data 2021-22 based on the approved rates for materials, is enclosed for further action. The preparation of Sub-Station materials, Labour, Transport and sample estimates are under process and after completion, the same will be communicated separately. The Cost Data 2021-22 will be effective from 01.04.2021 onwards.

The above cost data rates of materials may be circulated to all the officers under your control.

Further, CEs/Distribution/Regions and Superintending Engineer/EDCs are requested to furnish their suggestions / modification if any in the model estimate 20-21 to this office before 07.04.2021 by email to sereid@tnebnet.org

The receipt of this letter shall be acknowledged.

Encl: As above

for CHIEF ENGINEER/PLANNING&RC 2/2
31/3/21

Copy submitted to Director (Distribution)/TANGEDCO: For kind information please.

Copy submitted to Director(Finance)/TANGEDCO

Copy to CE/IT/TANGEDCO, CE/MM/TANGEDCO, CE/Commercial, CE-RAPDRP

Copy to CFC/General/TANGEDCO

Copy to CE/Civil/Design/TANGEDCO; Copy to CE/Transmission/TANTRANSCO

Copy to SE/Planning, SE/System Studies,SE/CDC

ANNEXURE - I

COST DATA FOR THE YEAR 2021-22 (MATERIALS)

Item code No		Description	Unit	2021-22 Rate (in Rs.)
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GROUP I - Distribution transformers and materials

<u>Distribution Transformers</u>				
11 KV/433V				
022-076	*	16KVA (Copper Winding)	No.	117377
022-078		16KVA (Copper winding) Energy Efficient Level-2	No.	99089
022-091	*	25KVA (Copper Winding)	No.	137977
022-093		25KVA (Copper winding) Energy Efficient Level - 2	No.	112665
022-336	*	63KVA (Copper Winding)	No.	233574
022-337		63KVA (Copper winding) Energy Efficient Level - 2	No.	202736
022-356	*	100KVA	No.	231758
022-360	*	100 KVA (3 Star rated)	No.	149749
022-408		100 KVA (Copper winding) Energy Efficient Level 2	No.	260936
022-407		160 KVA (Amorphous core 5 star rated)	No.	247107
022-376	*	250 KVA	No.	476300
022-380		250KVA Energy Efficient	No.	512450
022-401		250 KVA (Copper Winding) Energy efficient Level 2	No.	465718
022-386	*	500 KVA	No.	678478
022-387		500 KVA (Copper Winding) Energy efficient Level 2	No.	789753
* - indicates not procured / Existing inventory				

Item code No		Description	Unit	2021-22 Rate (in Rs.)
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Item code No		Description	Unit	2021-22 Rate (in Rs.)
		<u>22 KV/433V(Each)</u>		
022-421	*	16KVA	No.	42350
022-426	*	25KVA	No.	48400
022-441	*	63 KVA	No.	217037
		63 KVA (Copper Winding) Energy efficient Level 2	No.	211975
022-451	*	100 KVA	No.	348293
022-522		100 KVA (Copper Winding) Energy efficient Level 2	No.	298963
022-466		200 KVA	No.	528946
022-505		200 KVA (Copper Winding) Energy efficient Level 2	No.	433093
022-511		500 KVA	No.	931578
022-524		500 KVA (Energy efficient)	No.	685059
		Air Break(A.B)Switches(with PT insulators) (Set) Line type		
330-125		11 KV AB switch (200A) With PT insulators	No.	16038
330-200		22 KV AB switch (200 A) With PT insulators	No.	17386
		22 KV AB switch with polymer composite PT insulators	No.	17747
330-157		11 KV AB Switch Fixed contact-200A	No.	1012
330-161		11 KV AB Switch moving contact - 200 A	No.	1195
330-179		11 KV AB Switch Fixed contact - 400 A	No.	2118
		11 KV AB Switch Moving contact - 400 A	No.	2825
330-230		Fixed contact for 22 KV AB Switch	No.	817
330-233		Moving contact for 22 kv AB Switch	No.	958
330-227		22 KV Fixed & Moving contact	No.	1736

* - indicates not procured / Existing inventory

Item code No		Description	Unit	2021-22 Rate (in Rs.)
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Item code No	Description	Unit	2021-22 Rate (in Rs.)
330-166	11 KV double break centre rotating AB Switch without PT insulator	No.	33158
	11 KV double break centre rotating AB Switch with PT insulator	No.	35514
330-271	33 KV Double break Centre rotating AB switch without PT insulators	No.	22441
330-269	33 KV Double break Centre rotating AB switch with PT insulators	No.	38345
	<u>Fuses and Fuse wires (Set)</u>		
	Horn Gap (H.G)Fuses		
330-604	11 KV HG Fuse Set(without insulator)	Set	2038
330-619, 330- <i>C70</i>	22 KV HG Fuse Set(without insulator)	Set	2086
330-704	LT Open type fuse unit (without insulator)	Set	1052
	Tinned Copper (TC) Fuse wire		
312-419	12 Standard Wire Gauge (SWG)	Kg.	725
312-420	14 SWG	Kg.	744
312-422	16 SWG	Kg.	719
312-424	18 SWG	Kg.	715
312-426	20 SWG	Kg.	722
312-428	* 22 SWG	Kg.	549
312-430	24 SWG	Kg.	598
312-432	26 SWG	Kg.	696
312-434	* 28 SWG	Kg.	679
* - indicates not procured / Existing inventory			

Item code No		Description	Unit	2021-22 Rate (in Rs.)
312-436		30 SWG	Kg.	730
312-438		32 SWG	Kg.	794
312-439		33 SWG	Kg.	789
312-440		34 SWG	Kg.	740
312-441		35 SWG	Kg.	765
312-442		36 SWG	Kg.	798
		37 SWG	Kg.	779
		<u>Lightning Arresters</u>		
		Distribution Type		
330-000		Low Tension (L.T)	No.	286
330-007		11 KV	No.	399
330-008		22 KV	No.	589
500-440		New Transformer Oil	KL	70440
		Station Type		
330-080		Lightning Arrestor Station type 9KV/11KV	No.	1859
330-082		Lightning Arrestor Station type 18 KV/22KV	No.	3393
330-083		Lightning Arrestor Station type 25KV/33KV	No.	4134
		<u>Distribution Boxes</u>		
331-590		`A' Type Box	No.	726
331-594		`B' Type Box	No.	1274
331-602		`C' Type Box with clamp	No.	674
331-604	*	LT metering box	No.	5566
331-606		LT metering box (Double compartment)	No.	9995

Item code No		Description	Unit	2021-22 Rate (in Rs.)

*** - indicates not procured / Existing inventory**

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331-605		HT metering box	No.	12343
331-612		LTCT Box	No.	13745
331-619		DT Metering Box SMC-with accessories - 16/25KVA	No.	12069
331-620		DT Metering Box SMC-with accessories - 63KVA	No.	12759
		Fuse Unit and cut-out		
340-352	*	5A - 415V Fuse Unit	No.	39
340-331	*	16 A - 415 V Fuse Unit	No.	51
340-334		32 A - 415 V Fuse Unit	No.	132
340-337		63 A - 415 V Fuse Unit	No.	314
340-340		100 A - 415 V Fuse Unit	No.	642
340-346		200 A - 415 V Fuse Unit	No.	777
340-356		300 A - 415 V Jaws	No.	165
340-351		300 A - 415 V Base	No.	435
340-358		500 A-415V, Jaws	No.	275
340-354		500 A-415V, Base	No.	1514
340-175	*	16 A - 500 V ,S.P.I.C Cutout	No.	28
340-176	*	32 A - 500 V, S.P.I.C.Cutout	No.	45
340-178	*	63 A - 500 V, S.P.I.C.Cutout	No.	81
340-179	*	100 A - 500 V, S.P.I.C.Cutout	No.	389
		Poly Vinyl Chloride(P.V.C)/		
		(S.C) Single Core. Cable		

Item code No	Description	Unit	2021-22 Rate (in Rs.)
320-282	2.5 Sq.mm	per 100 m	1600
320-283	2.65 Sqmm	per 100 m	755

* - indicates not procured / Existing inventory

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320-285	6 Sq.mm	per 100 m	880
320-289	25 Sq.mm	per 100 m	2200
320-292	50 Sq.mm	per 100 m	4070
320-294	95 Sq.mm	per 100 m	10780
320-295	120 Sq.mm	per 100 m	5830
320-296	185 Sq.mm	per 100 m	15845
	Double Paper Covered (DPC) Aluminium Wire		
	DPC Aluminium Wire		
312-581	12 SWG	Kg.	460
312-693	13 SWG	Kg.	329
312-695	13.5 SWG	Kg.	257
312-696	14 SWG	Kg.	251
312-700	16 SWG	Kg.	326
312-583	16.5 SWG	Kg.	366
312-702	17 SWG	Kg.	187
312-704	18 SWG	Kg.	347
312-706	19 SWG	Kg.	669
	Double Paper Covered (DPC) Copper Wire		
312-292	12 SWG	Kg.	1005

Item code No	Description	Unit	2021-22 Rate (in Rs.)
	Super Enamelled Aluminium Wire (SEAW)		
312-597	12 SWG	Kg.	678
312-598	13 SWG	Kg.	435
312-599	13.5 SWG	Kg.	435
312-596	14 SWG	Kg.	289

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312-607	15 SWG	Kg.	307
312-600	16 SWG	Kg.	
312-602	17 SWG	Kg.	271
312-604	18 SWG	Kg.	
	Super Enamelled Copper Wire (SECW)		
312-140	12 SWG	Kg.	796
312-141	13 SWG	Kg.	697
312-142	14 SWG	Kg.	652
312-143	15 SWG	Kg.	675
312-144	16 SWG	Kg.	674
312-145	17 SWG	Kg.	691
312-146	18 SWG	Kg.	714
312-147	19 SWG	Kg.	607
312-149	20 SWG	Kg.	1020
312-150	21 SWG	Kg.	703
312-151	22 SWG	Kg.	893
312-152	23 SWG	Kg.	767

Item code No	Description	Unit	2021-22 Rate (in Rs.)
312-153	24 SWG	Kg.	1063
312-185	25 SWG	Kg.	643
312-156	27 SWG	Kg.	643
	BUSHING RODS		
022-580	LT Brass bushing rod 12 mm (1/2")	No.	391
022-582	LT Brass bushing rod 18 mm (3/4")	No.	904
022-583	LT Bushing Rod 20mm dia (0.8")	No.	1553

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022-584	LT TRANSFORMER BUSHING ROD 25 MM (1")	No.	2572
022-585	LT Bushing Rod 30mm dia (1.25")	No.	4100
022-611	HT Brass bushing rod 1/2"	No.	410
	<u>PIPES</u>		
	Galvanised Iron (G.I.) Pipes		
630-001	20 mm	mtr.	83
630-002	25 mm	mtr.	83
630-004	40 mm	mtr.	586
630-005	50 mm	mtr.	597
630-018	100 mm	mtr.	1173
630-008	160 mm	mtr.	1408
630-009	* 160 mm	mtr	1491
	P.V.C.Pipe		
635-001	20 mm	mtr.	19
635-002	25 mm	mtr.	44

Item code No	Description	Unit	2021-22 Rate (in Rs.)
635-006	32 mm	mtr.	53
635-004	40 mm	mtr.	67
635-005	50mm	mtr.	108
635-017	75 mm	mtr.	236
	90 mm	mtr.	334
635-02	110 mm	mtr.	503
635-012	140 mm	mtr.	812
635-022	160 mm	mtr.	1054

* - indicates not procured / Existing inventory

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635-015	200 mm	mtr.	1666
	315 mm	mtr.	4325

GROUP II - OVERHEAD LINE MATERIALS

CONDUCTOR

	Aluminium Conductor Steel Reinforced (ACSR)		
312-022	Weasel 7/2.59 mm	Km.	26423
312-025	Rabbit 7/3.35 mm	Km.	38681
312-027	Raccoon 7/4.09 mm	Km.	71830
312-030	Dog 6/4.72 & 7/1.57 mm	Km.	116251
	All Aluminium Alloy Conductor (AAAC)		
312-010	7/2.0 mm	Km.	28600
312-011	7/2.5 mm	Km.	23058

Item code No	Description	Unit	2021-22 Rate (in Rs.)
312-012	7/3.15 mm	Km.	30422
	Aerial Bunched Cable (ABC)		
321-817	1.1 KV, 3x70(Phase)+1x16(Insulated Street Light)+1x50 sq.mm (Bare Messenger cum Neutral)	Km.	480000
321-818	11KV class 3 phase AB cable of size 3x95 + 1x95 sq.mm	Km.	597163
	22 KV, 3x95(Phase)+1x95 sq.mm	Km.	989500
	<u>Aerially Bunched cable fittings</u>		
	Suspension clamp assembly suitable for 50 sq.mm Bare or insulated messenger	Each	530
	Anchoring/Dead end clamp assembly suitable for 50 sq.mm Bare or insulated messenger	Each	730
	Pre insulated Bimetallic termination lug for 70sq.mm phases	Each	620
	Pre insulated Bimetallic termination lug for 16sq.mm phases	Each	620

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	Pre insulated Bimetallic termination lug for 50sq.mm phases	Each	620
	Pre insulated Midspan joint for 70sq.mm phases	Each	290
	Pre insulated Midspan joint for 16sq.mm phases	Each	290
	Pre insulated Midspan joint for 50sq.mm Neutral phases	Each	290
	Suspension clamp assembly including pole clamp	Set	299
	Dead end clamp / Anchor clamp Assembly including brackets, pole clamps	Set	310
	Suspension clamp assembly including pole clamp	Set	785
	Dead end clamp / Anchor clamp Assembly including brackets, pole clamps	Set	865
	<u>Pin & Pin Insulators</u>		

Item code No	Description	Unit	2021-22 Rate (in Rs.)
311-001	LT pin insulator	No.	20
311-023	11 KV pin insulator	No.	58
311-026	22 KV pin insulator	No.	129
311-029	33 KV pin insulator	No.	468
311-073	11 KV post type insulator	No.	345
311-074	22 KV post type insulator	No.	602
311-075	33 KV post type insulator	No.	2127
311-121	LT shackle insulator	No.	19
311-403	LT Guy shackle insulator	No.	26
311-404	HT Guy shackle insulator	No.	27
311-175	11 KV 45 KN strain disc insulator	No.	316
311-260	11 KV 120 KN Ordinary disc insulators	No.	538

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311-002	LT GI pin	No.	37
311-024	11 KV GI pin	No.	76
311-027	22 KV GI pin	No.	160
311-030	33 KV GI Pin	No.	240
311-126	LT Shackle hardware / LT Metal Parts	No.	55
311-179	11 KV Metal Parts	No.	203
	Composite polymer insulators		

Item code No		Description	Unit	2021-22 Rate (in Rs.)
311-043		11 KV Polymer Composite pin Insulators	No.	148
311-044		22 KV Polymer composite pin insulator	No.	432
311-045		33 KV Polymer composite pin insulator	No.	609
311-192		11 KV Polymer Composite disc Insulators	No.	140
311-280		22 KV Polymer Composite disc Insulators	No.	325
311-276		33KV Polymer composite disc Insulator	No.	192
		<u>LINE SUPPORTS</u>		
		Reinforced Cement Concrete (RCC) Poles		
310-006	*	7.5 m RCC	No.	2881
310-007	*	8.0 m RCC	No.	2915
310-004	*	9.14 m.G.201 Special RCC	No.	5723
310-009		9.0 m (150 Kg) Square section RCC pole	No.	5842
* - indicates not procured / Existing inventory				

Item code No		Description	Unit	2021-22 Rate (in Rs.)
		Pre-Stressed Concrete (PSC) Pole		
310-063		7.5 m PSC (ordinary)	No.	1868
310-016		7.5 M PSC High Wind Zone (HWZ)	No.	2006
310-064		8.0 m PSC (140 Kgs.)	No.	2523
310-017		8.0 m PSC Pole (200 Kgs)	No.	2330
310-065		9.0 M PSC pole 300 KG WL	No.	3451
310-061		9.0 M PSC pole 400 KG WL	No.	4075
		Ribbed Tor Steel (RTS) Grills		
310-026	*	7.5 mts.RTS Grill	No.	2550
310-027	*	8.0 mts.RTS Grill	No.	2751
310-024	*	9.14 mts.RTS Grill	No.	6281
		<u>Cross arm and fittings</u>		
331-081		1068 mm (3'-6") V Cross arm	No.	702
331-096		1068 mm (3'-6") V Cross arm (GI)	No.	1097
331-083		1373 mm (4'-6") V Cross arm	No.	1241
331-097		1373 mm (4'-6") V Cross arm (GI)	No.	1931
331-084		1525 mm (5'-0") V Cross arm	No.	1378
331-086		1525 mm (5'-0") V Cross arm (GI)	No.	2006
331-152		Tapping channel cross arm	No.	913

Item code No		Description	Unit	2021-22 Rate (in Rs.)
331-162		Tapping channel cross arm (GI)	No.	1234

* - indicates not procured / Existing inventory

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331-163		Tapping channel cross arm for 33 KV	No.	3214
331-138		Double channel cross arm	No.	6937
331-134		Guarding cross arm	No.	857
331-139		Guarding cross arm (GI)	No.	1299
331-759		Cross bracing set	No.	8816
331-054		LT 3 phase angle cross arm	No.	469
331-055		LT 3 phase channel cross arm	No.	471
331-066		LT 3 phase channel cross arm (GI)	No.	441
331-050		LT single phase angle cross arm	No.	204
331-064		LT single phase angle cross arm (GI)	No.	322
331-051		LT single phase channel cross arm	No.	201
331-065		LT single phase channel cross arm (GI)	No.	303
331-701		HT TI fitting	No.	189
331-708		HT TI fitting (GI)	No.	274
331-704		HT TI fitting for 33 KV	No.	318
331-700		LT TI fitting	No.	199
331-707		LT TI fitting (GI)	No.	316

Item code No	Description	Unit	2021-22 Rate (in Rs.)
311-008	Aluminium Knob	No.	21
331-712	Transformer structure materials 10'	Set	13588
331-715	Transformer structure materials (GI)	Set	15586
331-505	Transformer structure clamp	Set	3718
331-507	Transformer structure clamp (GI)	Set	4106

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	Materials for single pole HVDS		
331-719	11 KV HVDS Single pole transformer structure material with clamp	No.	5724
331-717	11KV HVDS single pole mounted structure materials complete set (11 KV Vertical type AB (GOS) switch with composite Polymer insulator & 11 KV Solid core type HG fuse set with composite polymer insulators & Single pole Transformer structure materials with clamp)	No.	33652
331-722	22 KV HVDS Single pole Transformer centre set with clamp	No.	7691
	22 KV HVDS single pole Structure materials complete (22 KV Vertical type AB (GOS) Switch with polymer insulators, 22 KV Solid core type HG Fuse set with polymer insulator and Transformer Centre set & clamp)	No.	45607
330-128	11 KV HVDS Single pole vertical type AB switch with insulator	No.	16972
330-123	22KV HVDS Vertically mounted AB Switch with composite polymer insulator and 22 KV HG Fuse set with solid core type composite polymer insulator with all switch accessories	set	35400
330-608	11 KV HG fuse Set with solid core insulator for (GOS) single pole structure - Vertical type	set	5892
330-622	22 KV HG Fuse set with solid core insulator for (GOS) Single Pole structure - Vertical type	set	9986
	Paint		

Item code No	Description	Unit	2021-22 Rate (in Rs.)
700-444	Aluminium paint	No.	201
700-422	Red oxide paint	No.	123
700-300	Enamel Paint - White	No.	485
700-305	Enamel Paint - Black	No.	490
700-310	Enamel Paint - Red	No.	480
700-320	Enamel Paint - Green	No.	465
700-325	Enamel Paint - Blue	No.	480

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700-330		Enamel Paint - Yellow	No.	480
700-335		Enamel Paint - Grey	No.	288
500-485		Silicagel	kg	195
022-600		Silicagel Breather 1/2" (63 &100 KVA)	No.	338
022-061		Silicagel Breather 3/4" (200 KVA &250 KVA)	No.	532
022-602		Silicagel Breather 1" (500 KVA)	No.	865
022-604		Silicagel Breather for Power Transformer	No.	5133
		<u>Clamp/Stay/Base Plate (Each)</u>		
331-467	*	Back clamp for 7.5m RCC pole	No.	109
331-465		Back clamp for 7.5m PSC pole	No.	92
331-241	*	Back clamp for 8m RCC pole	No.	83
331-466		Back clamp for 8m PSC pole	No.	82
331-242		Back clamp for 9.14m special RCC pole	No.	109
331-248		Back Clamp for 9.14 Mts RCC Pole (GI)	No.	109
331-244		Back clamp for 9.0 m PSC Pole	No.	104

Item code No		Description	Unit	2021-22 Rate (in Rs.)
331-264		Back clamp for RSJ pole	No.	175
331-350	*	Stay clamp (Pair) for 7.5m RCC pole	No.	134
331-354		Stay clamp (Pair) 7.5 m PSC pole	No.	164
331-231	*	Stay clamp (Pair) 8.0m RCC pole	No.	169
331-356		Stay clamp (Pair) 8.0m PSC pole	No.	153
331-358		Stay Clamp (Pair) for 8.0 Mts PSC Pole (GI)	No.	171
331-353		Stay clamp (Pair) for 9.0 m PSC pole	No.	242
331-357	*	Stay clamp (Pair) 9.14m RCC pole	No.	263

*** - indicates not procured / Existing inventory**

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331-368 &331-487		RSJ pole Stay Clamp Special A side (200 x 100mm)	No.	427
331-488		RSJ pole Stay Clamp Special B side (200 x 100mm)	No.	418
		Stay clamp pair for 9.0 m square pole	No.	165
310-014		Base plate	No.	261
310-015		Stay plate	No.	261
331-752		stay bow	No.	91
331-753		Stay Eye Blot & Nut	No.	122
331-751		Stay Rod	No.	196
331-750		Stay set complete (eye, bow & rod) without GI wire	No.	413
331-755		GI Stay set complete without GI wire	No.	578
312-563		GI Stay wire 7/12 SWG (kg)	kg	78
314-484		Aluminium 'U' Clamp for Pillar Box	No.	56

Item code No	Description	Unit	2021-22 Rate (in Rs.)
314-480	Aluminium 'Z' Clamp for Pillar Box	No.	160
021-418	Aluminium Flat 50 X 12mm for Pillar Box	kg	237
313-990	Aluminium switch end clamp with tail		263
313-991	Aluminium switch end clamp without tail	No.	237
021-419	GI Stem Bolts and Nuts 155X12.5mm or 6" X 1/2" for Pillar Box	No.	32
021-420	GI Stem Bolts and Nuts 155X16.0 mm or 6" X 5/8" for Pillar Box	No.	54
021-416	Hexagonal Insulator 1/2" for pillar box	No.	8
021-417	Hexagonal Insulator 5/8" for pillar box	No.	10
315-102/ 315-526	BIMETALLIC CLAMPS (Transfomer bushing clamp) FOR LT SIZE 95 SQ.MM CABLE	No.	222
315-104	BIMETALLIC CLAMPS (Transfomer bushing clamp) FOR LT SIZE 120 SQ.MM CABLE	No.	216

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315-106	BIMETALLIC CLAMPS (Transfomer bushing clamp)FOR LT SIZE 185 SQ.MM CABLE	No.	413
315-107	BIMETALLIC CLAMPS (Transfomer bushing clamp)FOR LT SIZE 240 SQ.MM CABLE	No.	1109
	Clamps for Conductors as per relevant IS & its amendments		
314-515	L Clamp for DOG Conductor	No.	900
314-517	L Clamp for Panther	No.	1305
315-168	L Clamp for Kundah	No.	1355
314-532	L Clamp for Zebra	No.	1175
314-730	Aluminium 'T' Clamp	No.	244
314-815	'T" clamp for Kundah to Kundah	No.	1493
314-466	T CLAMP FOR 2" BUS TO KUND AH	No.	1537

Item code No	Description	Unit	2021-22 Rate (in Rs.)
314-467	T" clamp for 3" busbar to Kundah	No.	1982
314-469	T Clamp for Double Kundah to Single Kundah	No.	2975
314-816	'T" clamp for single Zebra to single Zebra	No.	1486
314-765 &314-955	T" clamp for 2" busbar to zebra	No.	1551
314-769	"T" Clamp for 2" bus bar to double zebra	No.	2950
314-930	T" clamp for 3" busbar to zebra	No.	1630
	"T" Clamp for 3" bus bar to double zebra	No.	2955
314-958	'T" clamp for Double Zebra to Double Zebra	No.	2980
314-971	'T" clamp for Double Zebra to Single Zebra	No.	2960
314-932	Aluminium switch end clamp for 2" Bus bar	No.	1579
	Aluminium switch end clamp for 3" Bus bar	No.	1845
	Aluminium switch end clamp for Panther	No.	1325

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314-933	Aluminium switch end clamp for Kundha	No.	1375
315-520	Aluminium switch end clamp for Zebra	No.	1359
	Aluminium switch end clamp for Mink	No.	1340
314-471	Reducer clamp for 2" Busbar to Kundah	No.	2062
314-504	Reducer clamp for 3" Busbar to Kundah	No.	2655
314-489	Reducer clamp for 2" Busbar to Zebra	No.	2378
314-534	Reducer clamp for 3" Busbar to Zebra	No.	2532
314-033	Parallel Groove clamp (PG Clamp) suitable for DOG conductor	No.	1138

Item code No	Description	Unit	2021-22 Rate (in Rs.)
314-458	Parallel Groove clamp (PG Clamp) suitable for Panther conductor	No.	1061
314-457	Parallel Groove clamp (PG Clamp) suitable for Kundah conductor	No.	1195
	Aluminium P.G.Clamp for Kundha to Kundha	No.	1120
	Parallel Groove clamp (PG Clamp) suitable for Zebra conductor	No.	1175
314-455	Free end clamp for 2" bus bar with bolts & Nuts	No.	1107
314-456	Free end clamp for 3" bus bar	No.	1082
	Aluminium Mink Clamp for 7/4.09 AAA Conductor	No.	1328
	Aluminium Power Transformer bushing clamp for Kundha	No.	1510
314-176	Terminal connector for Kundha conductor	No.	932
	CT Bushing clamp for Kundah	No.	1115
315-521	CT Bushing clamp for Zebra	No.	1115
	<u>BOLTS & NUTS Per MT</u>		
610-189	MS Hexagonal Bolt & Nut 1-1/2" x 5/8" (38X16 mm) per MT	MT.	105413
610-254	MS Hexagonal Bolt & Nut 2" x 5/8" (50 x 16 mm)	MT.	71920
610-252	MS Hexagonal Bolt & Nut 2-1/2" x 5/8" (63 x 16 mm)	MT.	79985

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610-258	MS Hexagonal Bolt & Nut 3" x 5/8" (75 x 16 mm)	MT.	81874
610-256	MS Hexagonal Bolt & Nut 3-1/2" x 5/8" (89 x 16 mm)	MT.	79919
610-262	MS Hexagonal Bolt & Nut 4" x 5/8" (100x16mm)	MT.	81997
610-260	MS Hexagonal Bolt & Nut 4-1/2" x 5/8" (113x16mm)	MT.	80398
610-265	MS Hexagonal Bolt & Nut Size -5"X 5/8" (125 x 16 mm)	MT.	96799

Item code No	Description	Unit	2021-22 Rate (in Rs.)
610-267	MS Hexagonal Bolt & Nut 6" x 5/8" (150 x 16 mm)	MT.	80522
610-269	M.S. BOLT & NUTS 6 1/2 X 5/8" (165X16 mm)	MT	115180
610-271	MS Hexagonal Bolt and Nut 7x5/8 Inch (178X16mm)	MT.	92000
610-272	MS Hexagonal Bolt & Nuts 8" x 5/8" (200X16 mm)	MT.	86139
610-274	MS BOLTS & NUTS 9"X 5/8" (225X16 mm)	MT.	76000
610-276	MS Hexagonal Bolt & Nuts 10" x 5/8" (255X16 mm)	MT.	72405
610-278	MS Hexagonal Bolt & Nut 11" x 5/8" (275x 16 mm)	MT.	86462
610-279	MS Hexagonal Bolt & Nut 12" x 5/8" (300x16 mm)	MT.	78435
610-280	MS Hexagonal Bolt & Nut 13x5/8 Inches (330x16mm)	MT.	93220
	MS Hexagonal Bolt & Nut 13-1/2"X5/8" (350x16mm)	MT.	90330
	MS Hexagonal Bolt & Nut 14" x 5/8" (355X16 mm)	MT.	90276
610-282	MS Hexagonal Bolt & Nut 15" x 5/8" (380x16mm)	MT.	86260
	MS Hexagonal Bolt & Nut 15 1/2" x 5/8" (400x16mm)	MT.	74772
620-180	GI Bolts & Nuts 2-1/2"x5/8" (63x16 mm)	MT.	135400
620-181	GI Bolts & Nuts 3-1/2"X5/8" (89x16 mm)	MT.	118390
620-131	GI Hexagonal Bolt & Nut 4-1/2" x 5/8" (113x16mm)	MT.	78010
	GI Hexagonal Bolt & Nut 5"X 5/8"(125 x 12 mm)	MT.	90808
620-185	G.I. Bolt and Nut 6" x 5/8" (150 x 16 mm)	MT.	115000

	GI Hexagonal Bolt & Nut 10" x 5/8"(255 x 12 mm)	MT.	99470
611-206	M.S.Washer-1/2" (12 mm dia)	MT.	74760
610-208	M.S.Washer 5/8" (16mm dia)	MT.	87374

Item code No	Description	Unit	2021-22 Rate (in Rs.)
620-737	G.I. Washer 1/2" (12 mm dia)	MT.	91000
620-739	G.I. Washer 5/8" (16 mm dia)	MT.	80240
	Copper Flexible Wire		
321-466	2.5 Sq.mm	mtr.	20
321-467	4 Sq.mm	mtr.	30
	<u>Galvanised Iron (GI) Wires (Per M.T)</u>		
312-562 & 312-582	7/11 Standard Wire Gauge (SWG)/ 7/2.80 mm Stranded	MT.	75755
312-563 & 312-584	7/12 SWG/ 7/2.50 mm Stranded	MT.	77560
312-565	7/20 SWG stranded	MT.	75900
312-566	7/10 SWG/ 7/3.15 mm stranded wire	MT.	63800
312-567	7/9 SWG/ 7/3.55 mm stranded wire	MT.	84700
	GI Solid Wire		
	No.12 SWG Solid wire (2.65 mm solid wire)	MT.	71430
	No.11 SWG Solid wire (3 mm solid wire)	MT.	65490
312-508	No.6 SWG Solid wire (4mm Solid wire)	MT.	70112
312-509	No.8 SWG Solid wire (5mm Solid wire)	MT.	69336
	Earth pipe/rod		
331-673	G I Earth pipe 40mm dia (10 feet -3mts length)	No.	970
331-674	G I Earth pipe 50mm dia	No.	1999

Item code No	Description	Unit	2021-22 Rate (in Rs.)
	Discharge/earth rod		
331-675	Discharge/ Earth rod 4 feet (per set) (Distribution type)	Set	3400
331-688 &331-689	Discharge/ Earth rod 10 feet (per set) (SS type)	Set	7330
331-678	Telescopic Earth Rod extendable type per set (Material - PVC Pipe, 1 Set of 3 Nos, Size 4 Feet) (Distribution type)	Set	2276
331-681	Telescopic Earth Rod with copper wire 10' (SS Type) (per set)	Set	6955
	Line seperators		
340-885	LT, 3 Phase, 4 wire spiral phase line separator	No.	280
	LT, 3 Phase, 3 wire spiral phase separator		246
340-886	LT line spacer single phase 2 wire	No.	150
340-887	Line Separator 1 Phase, 3 Wire Spiral type	No.	245
504-614	Rubber Gauntlets	Set	458
504-613	Rubber Gloves	Set	490
	Bolt & nuts & binding wire /pole	lump sum	888
	Cement		
700-160	Ordinary Portland (O.P)Cement 53 Grade	per bag	290
331-685	Earthing Device made up of MS Angle 40x40x6mm along with MS Rod 3/8" (10mm) - As per IS of latest issue with up to date amendments	No.	670
	Pipe Earthing		
	G.I.Pipe (40 mm dia) 3 mts and G.I.wire 8 SWG, Bolt & Nuts- 4 1/2 x 5/8" Set (586x3)+(69*10)+(80*5)= 987+720+455=2162	lump sum	2848
	Coil earthing per pole		

Item code No	Description	Unit	2021-22 Rate (in Rs.)
	G.I. Wire (8 SWG)(10 Kg), Bolt & Nut (3 1/2x5/8")- 5 Kg) - Set = (69*10)+(80*5)=690+400=1290	lump sum	1090

Item code No		Description	Unit	2021-22 Rate (in Rs.)
		Structure Earthing		
		Structure Earthing with GI pipe 40 mm dia 3 Nos, MS Flat 50x6 MM 5 KG Bolt & Nut (11x5/8") 6 Kg, GI No.8 SWG wire 35 Kg (586x3)+(60x5)+(86x6)+(69x35)	lump sum	4989
		Concreting		
		concreting per pole(cement 1/2 bag, River Sand,Blue metal) (290/2+447+430)	lump sum	1022
		Concreting per structure (290/2+447+430)*2	lump sum	2044
<u>Group III - Street Light</u>				
511-217	*	250W sodium vapour ballast	No.	1751
501-109	*	Sodium vapour lamp 250W	No.	814
501-212	*	Sodium vapour lamp fitting complete with 250 W bulb	No.	2882
331-498		Street light fixture clamp (Pair)	No.	316
331-541		Street light fixture pipe	No.	352
501-011		9 watts LED lamps	No.	100
501-249		4 Feet 16 W LED Tube light with fitting	No.	322
		20 watts LED tubular lamps	No.	398
501-232		36W/40W FLOURESCENT TUBE	No.	40
501-202		40 W choke(ELECTRONIC BALLAST)	No.	280
501-241		36/40W Flourescent street light fitting without bulb	No.	903
501-246		LED Lamp 40 Watts with Fittings	No.	1300
		72 W LED Street Light Fittings	No.	1513
501-248		72 Watts LED Street Light Bulb	No.	1804
510-245		72W LED street Light Fitting with Lamp	No.	3705

Item code No		Description	Unit	2021-22 Rate (in Rs.)
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Item code No	Description	Unit	2021-22 Rate (in Rs.)
<u>Group IV - Ring Main Unit (RMU)</u>			
	VARIOUS TYPES OF 11 RMUs with FRTU, Structures for DTs and associated materials (including DT/RMU earthing, foundation and termination)		
023-367	5 way 11 KV RMU configuration R-R-R-R-R	Each	1399019
021-803	5 way 11 KV RMU configuration R-R-R-R-L	Each	1619325
021-804	5 way 11 KV RMU configuration R-R-R-L-L	Each	1834008
021-805	5 way 11 KV RMU configuration R-R-L-L-L	Each	1957974
021-806	3 way 11 KV RMU configuration R-R-R	Each	972654
021-807	3 way 11 KV RMU configuration R-R-L	Each	1211126
<u>GROUP V - INNOVATIVE EQUIPMENTS</u>			
	<u>New equipment's</u>		
021-437	LT fixed capacitor 1x9 KVAR	Each	7757
021-438	LT fixed capacitor 2x9 KVAR	Each	14666
	<u>Electronic (Static) type:-</u>		
400-079	1 PH STATIC METER 5-20A	No.	670
400-078	Single phase Bidirectional Static Meter 5-20A (Solar)	No.	1240
400-085	Three phase meter 10-60A STATIC	No.	1800
400-500	Three phase meter 50-100A Static Meter Bi-directional meters for solar - net metering	No.	6275
400-345	Three phase meter 100A static	No.	7500
	Single Phase whole current Smart Meter 5-20 / 30 A	No.	3509
	Three Phase whole current Smart Meter 10-60A	No.	5401
	Three Phase whole current Smart Meter 10/20/50-100 A	No.	6520

Item code No		Description	Unit	2021-22 Rate (in Rs.)

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Item code No	Description	Unit	2021-22 Rate (in Rs.)
	Three Phase LTCT operated Smart Meter for consumer	No.	9123
	Three Phase LTCT operated Smart Meter with Box, CTs and Cabling for DTs	No.	26927
	Modular RF Mesh Module (for installation with each meter)	No.	1731
	Data Concentrator Units/Gateway/Router for forming FR Mesh Canopy	No.	55745
	MODEM (HT & Ring Fencing)	No.	9000
	DCUs for SS Feeders	No.	167313
	LTCT 5A Composite Meter	No.	2735
	110 KV Metering CT	No.	89844
	HT 110/1A, DLMS 0.5 s Feeder Meter	No.	7080
400-330	3 PH 4 WIRE LT CT OPERATED STATIC METER 240V/5A 0.5 S DLMS	No.	2258
420-093	Resin cast Ring type LT CT 200/5A Electronic (Static) type Meter	No.	546
420-106	Resin cast Ring type LT CT 400/5A Electronic (Static) type Meter	No.	570
420-127	Resin cast Ring type LT CT 800/5A Electronic (Static) type Meter	No.	388
400-193	3 Phase (10-60A) Solar Bidirectional Meters	No.	3960
400-083	50-100 Amps Three phase Static meter	No.	5817
203-048	Common Meter Reading Instrument (CMRI)	No.	22243
	<u>Trivector meters (Time Of Day (TOD) Type)</u>		
400-348	3 Phase HT Static trivector meter 110V/1A (With TOD)	No.	7080
400-255	3 Phase HT Static trivector meter 110V/5A (With TOD)	No.	23050
400-343	3 Phase HT Static trivector meter 240V/5A (with TOD)	No.	2250

Item code No		Description	Unit	2021-22 Rate (in Rs.)
400-501		3 Phase HT Static trivector meter 110V/5A TOD-DLMS 0.2 S ABT (Available Base Tariff) Future	No.	26800
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Item code No	Description	Unit	2021-22 Rate (in Rs.)
400-270	HT TOD - 110V/5A static meter Bi-Directional meter for solar -net metering	No.	6408
400-328	3 Phase 4 Wire LT CT operated static meter 240V/5A.	No.	2310
400-503	3 phaseLT CT Bi-directional static meter 240V/5A (Solar)	No.	11018
340-850	PolyCarbonate Seals	No.	4
	<u>Metering Sets per Each (Accuracy class 0.2 S)</u>		
021-120	11 KV set , 10/5A	No.	63720
021-120	11 KV set, 20/5A	No.	63720
021-120	11 KV set, 40/5A	No.	63720
021-120	11 KV set, 60/5A	No.	63720
021-120	11 KV set, 100/5A	No.	63720
021-120	11 KV set, 150/5A	No.	63720
021-120	11 KV set, 200/5A	No.	63720
021-120	11 KV set, 300/5A	No.	63720
021-120	11 KV set, 100/5A	No.	63720
021-221	22 KV set 5/5A	No.	130980
021-221	22 KV set, 10/5A	No.	130980
021-221	22 KV set, 15/5A	No.	130980
021-221	22 KV set, 20/5A	No.	130980
021-221	22 KV set, 25/5A	No.	130980
021-221	22 KV set, 30/5A	No.	130980
021-221	22 KV set, 40/5A	No.	130980
021-221	22 KV set, 50/5A	No.	130980

Item code No	Description	Unit	2021-22 Rate (in Rs.)
021-221	22 KV set,60/5A	No.	130980

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021-221	22 KV set,80/5A	No.	130980
021-221	22 KV set,100/5A	No.	130980
021-221	22 KV set,120/5A	No.	130980
021-221	22 KV set,150/5A	No.	130980
021-221	22 KV set,175/5A	No.	130980
021-221	22 KV set,200/5A	No.	130980
021-221	22 KV set,250/5A	No.	130980
021-221	22 KV set,300/5A	No.	130980
021-221	22 KV set,400/5A	No.	130980
	33 KV set 10/5A	No.	156350
	33 KV set 20/5A	No.	156350
	33 KV set 30/5A	No.	156350
	33 KV set 40/5A	No.	156350
	33 KV set 50/5A	No.	156350
	33 KV set 60/5A	No.	156350
	33 KV set 100/5A	No.	156350
	33 KV set 150/5A	No.	156350
	33 KV set 200/5A	No.	156350
	33 KV set 300/5A	No.	156350
	<u>Meter Board/Meter Box</u>		
340-047	457 x 305 x 12 mm (Teak Wood) T.W.Board	No.	599

Item code No	Description	Unit	2021-22 Rate (in Rs.)
340-048	457 x 610 x 12 mm T.W.Board	No.	734
340-049	915 x 610 x 16 mm T.W.Board	No.	569
340-051	208 x 243 x 10 mm T.W.Board	No.	264

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340-050	200 x 200 x 12 mm T.W.Board	No.	75
331-604	LT METERING BOX	No.	5060
331-605	HT METERING BOX	No.	14814
	<u>High Tension (HT) Cables</u>		
	Cross Linked Poly Ethylene Aluminium (XLPE) cables		
321-801	33KV UG ALU XLPE CABLE 1x1000 SQ MM.	Km.	1670880
321-807	33 KV 1x630 Sq.mm	Km.	1296820
321-821	33 KV 3x630 Sq.mm	Km.	4484000
321-804	33 KV 3x400 Sq.mm	Km.	2318181
321-684	11 KV 1x630 Sq.mm	Km.	883159
321-594	11 KV 3x300 Sq.mm	Km.	1711000
321-593	11 KV 3x120 Sq.mm	Km.	881460
	<u>Low Tension (LT) Under Ground(UG) cables</u>		
321-020	2x16 Sq.mm	Km.	61216
321-119	4x25 Sq.mm	Km.	118529
321-120	4x120 Sq.mm	Km.	457979
321-121	4x240 Sq.mm	Km.	878170
	<u>Pillar Boxes Open Type</u>		
021-412	MS Open type 6 way pillar boxes	Each	33197

Item code No	Description	Unit	2021-22 Rate (in Rs.)
021-405	PILLAR BOX MS 6 way with HRC fuse	Each	68347
021-422	Fibre Reinforced Plastic (FRP) 6 way Pillar box	Each	42534
	PILLAR BOX MS 4 way with HRC fuse	Each	50193
021-404	Fibre Reinforced Plastic (FRP) 4 way Pillar box	Each	23286
021-470	Fibre Reinforced Plastic (FRP) Mini Pillar box	Each	11011

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021-408	LT open type Mini pillar box	Each	9075
	<u>Joint Kits for Cables</u>		
	Joint Boxes		
	Straight through type		
	<u>Cross Linked Poly Ethylene (XLPE) cables</u>		
322-548	STRAIGHT JOINT KIT (Heat Shrinkable (HS) TYPE) FOR XLPE 33KV 3X400 SQMM	Each	21887
322-554	STRAIGHT JOINT KIT (OUTDOOR - TAPEX TYPE) FOR XLPE 33KV 3X400 SQMM	Each	23895
322-559	Straight Joint Kit (HS type) for 33KV, 1X 630 Sq mm cable	Each	9366
322-552	STRAIGHT JOINT KIT (HS TYPE) FOR XLPE 11KV 3X300 SQMM	Each	5735
322-550	STRAIGHT JOINT KIT (HS TYPE) FOR XLPE 11KV 3X120 SQMM	Each	5066
	STRAIGHT JOINT KIT (HS TYPE) FOR XLPE 11KV 1X630 SQMM	Each	12803
	Straight Joint Boxes		
	(a) Low Tension		
	Heat Shrinkable (HS) type, XLPE cable		
322-050	1.1 KV 2x16 Sq.mm	Set	710

Item code No	Description	Unit	2021-22 Rate (in Rs.)
322-764	1.1 KV 4 x 25 Sq.mm	Set	352
322-765	1.1 KV 4x120 Sq.mm	Set	770
322-766	1.1 KV 4 x 240 Sq mm	Set	1495
	<u>Heat shrinkable type transition kit for</u>		
	<u>XLPE cable to PILC</u>		
322-633	Transition kit (HS Type) 11KV PILC TO 3X300 Sq.mm XLPE	Each	14298
322-627	Transition kit (HS Type) 11KV PILC TO 3X120 Sq.mm XLPE	Each	9461

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	<u>Outdoor type cable termination joint kit</u>		
	<u>Heat Shrinkable (HS) type</u>		
322-740	OD termination kit (outdoor - HS type) for 33KV 3X400 sq.mm	Each	7847
322-742	OD termination kit (outdoor - HS type) FOR 33KV 1X630 sq.mm	Each	6714
322-562	OD termination kit (outdoor - HS type) FOR XLPE 11KV 3X300 sq.mm	Each	2420
322-560	OD termination kit (outdoor - HS type) FOR XLPE 11KV 3X120 sq.mm	Each	2117
	<u>Indoor type Termination kit (HS type for XLPE cable)</u>		
	<u>Heat Shrinkable (HS) type</u>		
322-591	ID termination kit (Indoor) FOR XLPE 33KV 3X400 sq.mm	Each	6500
322-738	ID termination kit for XLPE 33 KV 1x630 Sq.mm	Each	3046
322-588	ID termination kit for XLPE 11KV 3X300 sq.mm	Each	2087
322-586	ID Termination kit for 11 KV, 3X120 sqmm	Each	1652
	<u>Cable Compound</u>		

Item code No		Description	Unit	2021-22 Rate (in Rs.)
322-520	LT		Tonne	80302
	`V' Trough			
322-513	V Trough for 33KV		Each	392
322-512	V TROUGHS FOR 11KV		Each	245
322-517	33 KV RCC cover slab		Each	307
	Spun Pipes			
710-810	Spun pipe 225 mm (RCC)		Each	1170
710-811	Spun pipe 150 mm (RCC)		Each	801
710-836	Spun pipe 100 mm (RCC)		Each	627

Item code No	Description	Unit	2021-22 Rate (in Rs.)
	Under Ground (UG) service connection material		
340-736	Aluminium LUGS 120 Sq.mm	Each	9
340-737	Aluminium LUGS 240 Sq.mm	Each	22
340-747	Aluminium line connector 120 Sq.mm	Each	8
340-749	Aluminium line connector 240 Sq.mm	Each	18
	Aluminium Hollow pipe (Rate per kg)		
642-163	Hollow pipe Alu. 1 inch OD - 3.1m length	Kg.	1408
642-150	Hollow pipe 38mm (1.5 Inch) dia,(Alu.Bus bar)	Kg.	987
642-152	Alu. Bus bar 50 mm-(2 In) Dia	Kg.	378

GROUP V - STEEL ITEMS

	Mild Steel (M S) Rods/Rounds		
600-720	12 mm	MT	61360
600-721	16 mm	MT	61360
600-722	20 mm	MT	61360
600-728	40 mm	MT	61360
	Mild Steel (MS) Flats		
600-450	50 x 6 mm	MT	59590
600-471	50 x 8 mm	MT	59118
600-491	65 x 10 mm	MT	59118
	200 x 6 mm	MT	61832
	300 x 8 mm	MT	61832
	Rolled Steel (R.S.) Joist		
600-426	250 x 125 mm (11.19 kg/feet)	MT	44863
	42' RSJ pole	Each	21085

Item code No		Description	Unit	2021-22 Rate (in Rs.)
		40' RSJ pole	Each	20081
		36' RSJ pole	Each	18073
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Item code No	Description	Unit	2021-22 Rate (in Rs.)
310-083	200 x 100 mm (7.26 kg/feet)	MT	55100
310-305	42' RSJ pole	Each	16801
310-304	40' RSJ pole	Each	16001
310-303	36' RSJ pole	Each	14401
310-302	33' RSJ pole	Each	13201
310-301	30' RSJ pole	Each	12001
	Mild Steel (M.S.)Angles		
600-021	50 x 50 x 6 mm	MT	60534
600-035	65 x 65 x 6 mm	MT	60652
	M.S.Channel		
600-305	75x40 mm	MT	60888
600-311	100x50 mm	MT	60593
600-316	125x 65 mm	MT	61360
600-335	150x75 mm	MT	60298
600-356	200x 75mm	MT	60298
	Copper control cables		
	2C x 2.5 sq.mm armoured copper control cable	Km.	70555
321-399	4C x 2.5 sq.mm armoured copper control cable	Km.	107762
321-412	4C x 4 sq.mm armoured copper control cable	Km.	151285
	8C x 2.5 sq.mm armoured copper control cable	Km.	180405
321-459	8C x 4 sq.mm armoured copper control cable	Km.	285140
321-501	14C x 2.5 sq.mm armoured copper control cable	Km.	297757
	50mm Aluminium Bus Bar	No.	405920

Item code No		Description	Unit	2021-22 Rate (in Rs.)

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ANNEXURE - I

COST DATA FOR THE YEAR 2021-22 (MATERIALS)

Item code No	Description	Unit	2021-22 Rate (in Rs.)
GROUP I - Distribution transformers and materials			
<u>Distribution Transformers</u>			
	11 KV/433V		
022-076	*	16KVA (Copper Winding)	No. 117377
022-078		16KVA (Copper winding) Energy Efficient Level-2	No. 99089
022-091	*	25KVA (Copper Winding)	No. 137977
022-093		25KVA (Copper winding) Energy Efficient Level - 2	No. 112665
022-336	*	63KVA (Copper Winding)	No. 233574
022-337		63KVA (Copper winding) Energy Efficient Level - 2	No. 202736
022-356	*	100KVA	No. 231758
022-360	*	100 KVA (3 Star rated)	No. 149749
022-408		100 KVA (Copper winding) Energy Efficient Level 2	No. 260936
022-407		160 KVA (Amorphous core 5 star rated)	No. 247107
022-376	*	250 KVA	No. 476300
022-380		250KVA Energy Efficient	No. 512450
022-401		250 KVA (Copper Winding) Energy efficient Level 2	No. 465718
022-386	*	500 KVA	No. 678478
022-387		500 KVA (Copper Winding) Energy efficient Level 2	No. 789753
* - indicates not procured / Existing inventory			

Item code No	Description	Unit	2021-22 Rate (in Rs.)
	<u>22 KV/433V(Each)</u>		
022-421	* 16KVA	No.	42350
022-426	* 25KVA	No.	48400
022-441	* 63 KVA	No.	217037
	63 KVA (Copper Winding) Energy efficient Level 2	No.	211975
022-451	* 100 KVA	No.	348293
022-522	100 KVA (Copper Winding) Energy efficient Level 2	No.	298963
022-466	200 KVA	No.	528946
022-505	200 KVA (Copper Winding) Energy efficient Level 2	No.	433093
022-511	500 KVA	No.	931578
022-524	500 KVA (Energy efficient)	No.	685059
	Air Break(A.B)Switches(with PT insulators) (Set) Line type		
330-125	11 KV AB switch (200A) With PT insulators	No.	16038
330-200	22 KV AB switch (200 A) With PT insulators	No.	17386
	22 KV AB switch with polymer composite PT insulators	No.	17747
330-157	11 KV AB Switch Fixed contact-200A	No.	1012
330-161	11 KV AB Switch moving contact - 200 A	No.	1195
330-179	11 KV AB Switch Fixed contact - 400 A	No.	2118
	11 KV AB Switch Moving contact - 400 A	No.	2825
330-230	Fixed contact for 22 KV AB Switch	No.	817
330-233	Moving contact for 22 kv AB Switch	No.	958
330-227	22 KV Fixed & Moving contact	No.	1736

*** - indicates not procured / Existing inventory**

Item code No	Description	Unit	2021-22 Rate (in Rs.)
330-166	11 KV double break centre rotating AB Switch without PT insulator	No.	33158
	11 KV double break centre rotating AB Switch with PT insulator	No.	35514
330-271	33 KV Double break Centre rotating AB switch without PT insulators	No.	22441
330-269	33 KV Double break Centre rotating AB switch with PT insulators	No.	38345
	<u>Fuses and Fuse wires (Set)</u>		
	Horn Gap (H.G)Fuses		
330-604	11 KV HG Fuse Set(without insulator)	Set	2038
330-619, 330-679	22 KV HG Fuse Set(without insulator)	Set	2086
330-704	LT Open type fuse unit (without insulator)	Set	1052
	Tinned Copper (TC) Fuse wire		
312-419	12 Standard Wire Gauge (SWG)	Kg.	725
312-420	14 SWG	Kg.	744
312-422	16 SWG	Kg.	719
312-424	18 SWG	Kg.	715
312-426	20 SWG	Kg.	722
312-428	* 22 SWG	Kg.	549
312-430	24 SWG	Kg.	598
312-432	26 SWG	Kg.	696
312-434	* 28 SWG	Kg.	679
* - indicates not procured / Existing inventory			

Item code No	Description	Unit	2021-22 Rate (in Rs.)
312-436	30 SWG	Kg.	730
312-438	32 SWG	Kg.	794
312-439	33 SWG	Kg.	789
312-440	34 SWG	Kg.	740
312-441	35 SWG	Kg.	765
312-442	36 SWG	Kg.	798
	37 SWG	Kg.	779
	<u>Lightning Arresters</u>		
	Distribution Type		
330-000	Low Tension (L.T)	No.	286
330-007	11 KV	No.	399
330-008	22 KV	No.	589
500-440	New Transformer Oil	KL	70440
	Station Type		
330-080	Lightning Arrestor Station type 9KV/11KV	No.	1859
330-082	Lightning Arrestor Station type 18 KV/22KV	No.	3393
330-083	Lightning Arrestor Station type 25KV/33KV	No.	4134
	<u>Distribution Boxes</u>		
331-590	`A' Type Box	No.	726
331-594	`B' Type Box	No.	1274
331-602	`C' Type Box with clamp	No.	674
331-604	* LT metering box	No.	5566
331-606	LT metering box (Double compartment)	No.	9995
* - indicates not procured / Existing inventory			

Item code No	Description	Unit	2021-22 Rate (in Rs.)
331-605	HT metering box	No.	12343
331-612	LTCT Box	No.	13745
331-619	DT Metering Box SMC-with accessories - 16/25KVA	No.	12069
331-620	DT Metering Box SMC-with accessories - 63KVA	No.	12759
	<u>Fuse Unit and cut-out</u>		
340-352	* 5A - 415V Fuse Unit	No.	39
340-331	* 16 A - 415 V Fuse Unit	No.	51
340-334	32 A - 415 V Fuse Unit	No.	132
340-337	63 A - 415 V Fuse Unit	No.	314
340-340	100 A - 415 V Fuse Unit	No.	642
340-346	200 A - 415 V Fuse Unit	No.	777
340-356	300 A - 415 V Jaws	No.	165
340-351	300 A - 415 V Base	No.	435
340-358	500 A-415V, Jaws	No.	275
340-354	500 A-415V, Base	No.	1514
340-175	* 16 A - 500 V ,S.P.I.C Cutout	No.	28
340-176	* 32 A - 500 V, S.P.I.C.Cutout	No.	45
340-178	* 63 A - 500 V, S.P.I.C.Cutout	No.	81
340-179	* 100 A - 500 V, S.P.I.C.Cutout	No.	389
	Poly Vinyl Chloride(P.V.C)/		
	(S.C) Single Core. Cable		
320-282	2.5 Sq.mm	per 100 m	1600
320-283	2.65 Sqmm	per 100 m	755

*** - indicates not procured / Existing inventory**

Item code No	Description	Unit	2021-22 Rate (in Rs.)
320-285	6 Sq.mm	per 100 m	880
320-289	25 Sq.mm	per 100 m	2200
320-292	50 Sq.mm	per 100 m	4070
320-294	95 Sq.mm	per 100 m	10780
320-295	120 Sq.mm	per 100 m	5830
320-296	185 Sq.mm	per 100 m	15845
	Double Paper Covered (DPC) Aluminium Wire		
	DPC Aluminium Wire		
312-581	12 SWG	Kg.	460
312-693	13 SWG	Kg.	329
312-695	13.5 SWG	Kg.	257
312-696	14 SWG	Kg.	251
312-700	16 SWG	Kg.	326
312-583	16.5 SWG	Kg.	366
312-702	17 SWG	Kg.	187
312-704	18 SWG	Kg.	347
312-706	19 SWG	Kg.	669
	Double Paper Covered (DPC) Copper Wire		
312-292	12 SWG	Kg.	1005
	Super Enamelled Aluminium Wire (SEAW)		
312-597	12 SWG	Kg.	678
312-598	13 SWG	Kg.	435
312-599	13.5 SWG	Kg.	435
312-596	14 SWG	Kg.	289

Item code No	Description	Unit	2021-22 Rate (in Rs.)
312-607	15 SWG	Kg.	307
312-600	16 SWG	Kg.	
312-602	17 SWG	Kg.	271
312-604	18 SWG	Kg.	
	Super Enamelled Copper Wire (SECW)		
312-140	12 SWG	Kg.	796
312-141	13 SWG	Kg.	697
312-142	14 SWG	Kg.	652
312-143	15 SWG	Kg.	675
312-144	16 SWG	Kg.	674
312-145	17 SWG	Kg.	691
312-146	18 SWG	Kg.	714
312-147	19 SWG	Kg.	607
312-149	20 SWG	Kg.	1020
312-150	21 SWG	Kg.	703
312-151	22 SWG	Kg.	893
312-152	23 SWG	Kg.	767
312-153	24 SWG	Kg.	1063
312-185	25 SWG	Kg.	643
312-156	27 SWG	Kg.	643
	BUSHING RODS		
022-580	LT Brass bushing rod 12 mm (1/2")	No.	391
022-582	LT Brass bushing rod 18 mm (3/4")	No.	904
022-583	LT Bushing Rod 20mm dia (0.8")	No.	1553

Item code No	Description	Unit	2021-22 Rate (in Rs.)
022-584	LT TRANSFORMER BUSHING ROD 25 MM (1")	No.	2572
022-585	LT Bushing Rod 30mm dia (1.25")	No.	4100
022-611	HT Brass bushing rod 1/2"	No.	410
	<u>PIPES</u>		
	Galvanised Iron (G.I.) Pipes		
630-001	20 mm	mtr.	83
630-002	25 mm	mtr.	83
630-004	40 mm	mtr.	586
630-005	50 mm	mtr.	597
630-018	100 mm	mtr.	1173
630-008	160 mm	mtr.	1408
630-009	* 160 mm	mtr	1491
	P.V.C.Pipe		
635-001	20 mm	mtr.	19
635-002	25 mm	mtr.	44
635-006	32 mm	mtr.	53
635-004	40 mm	mtr.	67
635-005	50mm	mtr.	108
635-017	75 mm	mtr.	236
	90 mm	mtr.	334
635-02	110 mm	mtr.	503
635-012	140 mm	mtr.	812
635-022	160 mm	mtr.	1054
* - indicates not procured / Existing inventory			

Item code No	Description	Unit	2021-22 Rate (in Rs.)
635-015	200 mm	mtr.	1666
	315 mm	mtr.	4325

GROUP II - OVERHEAD LINE MATERIALS

CONDUCTOR

	Aluminium Conductor Steel Reinforced (ACSR)		
312-022	Weasel 7/2.59 mm	Km.	26423
312-025	Rabbit 7/3.35 mm	Km.	38681
312-027	Raccoon 7/4.09 mm	Km.	71830
312-030	Dog 6/4.72 & 7/1.57 mm	Km.	116251
	All Aluminium Alloy Conductor (AAAC)		
312-010	7/2.0 mm	Km.	28600
312-011	7/2.5 mm	Km.	23058
312-012	7/3.15 mm	Km.	30422
	Aerial Bunched Cable (ABC)		
321-817	1.1 KV, 3x70(Phase)+1x16(Insulated Street Light)+1x50 sq.mm (Bare Messenger cum Neutral)	Km.	480000
321-818	11KV class 3 phase AB cable of size 3x95 + 1x95 sq.mm	Km.	597163
	22 KV, 3x95(Phase)+1x95 sq.mm	Km.	989500
	<u>Aerially Bunched cable fittings</u>		
	Suspension clamp assembly suitable for 50 sq.mm Bare or insulated messenger	Each	530
	Anchoring/Dead end clamp assembly suitable for 50 sq.mm Bare or insulated messenger	Each	730
	Pre insulated Bimetallic termination lug for 70sq.mm phases	Each	620
	Pre insulated Bimetallic termination lug for 16sq.mm phases	Each	620

Item code No	Description	Unit	2021-22 Rate (in Rs.)
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	Pre insulated Bimetallic termination lug for 50sq.mm phases	Each	620
	Pre insulated Midspan joint for 70sq.mm phases	Each	290
	Pre insulated Midspan joint for 16sq.mm phases	Each	290
	Pre insulated Midspan joint for 50sq.mm Neutral phases	Each	290
	Suspension clamp assembly including pole clamp	Set	299
	Dead end clamp / Anchor clamp Assembly including brackets, pole clamps	Set	310
	Suspension clamp assembly including pole clamp	Set	785
	Dead end clamp / Anchor clamp Assembly including brackets, pole clamps	Set	865
	<u>Pin & Pin Insulators</u>		
311-001	LT pin insulator	No.	20
311-023	11 KV pin insulator	No.	58
311-026	22 KV pin insulator	No.	129
311-029	33 KV pin insulator	No.	468
311-073	11 KV post type insulator	No.	345
311-074	22 KV post type insulator	No.	602
311-075	33 KV post type insulator	No.	2127
311-121	LT shackle insulator	No.	19
311-403	LT Guy shackle insulator	No.	26
311-404	HT Guy shackle insulator	No.	27
311-175	11 KV 45 KN strain disc insulator	No.	316
311-260	11 KV 120 KN Ordinary disc insulators	No.	538

Item code No		Description	Unit	2021-22 Rate (in Rs.)
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311-002		LT GI pin	No.	37
311-024		11 KV GI pin	No.	76
311-027		22 KV GI pin	No.	160
311-030		33 KV GI Pin	No.	240
311-126		LT Shackle hardware / LT Metal Parts	No.	55
311-179		11 KV Metal Parts	No.	203
		Composite polymer insulators		
311-043		11 KV Polymer Composite pin Insulators	No.	148
311-044		22 KV Polymer composite pin insulator	No.	432
311-045		33 KV Polymer composite pin insulator	No.	609
311-192		11 KV Polymer Composite disc Insulators	No.	140
311-280		22 KV Polymer Composite disc Insulators	No.	325
311-276		33KV Polymer composite disc Insulator	No.	192
		LINE SUPPORTS		
		Reinforced Cement Concrete (RCC) Poles		
310-006	*	7.5 m RCC	No.	2881
310-007	*	8.0 m RCC	No.	2915
310-004	*	9.14 m.G.201 Special RCC	No.	5723
310-009		9.0 m (150 Kg) Square section RCC pole	No.	5842

*** - indicates not procured / Existing inventory**

Item code No	Description	Unit	2021-22 Rate (in Rs.)
	Pre-Stressed Concrete (PSC) Pole		
310-063	7.5 m PSC (ordinary)	No.	1868
310-016	7.5 M PSC High Wind Zone (HWZ)	No.	2006
310-064	8.0 m PSC (140 Kgs.)	No.	2523
310-017	8.0 m PSC Pole (200 Kgs)	No.	2330
310-065	9.0 M PSC pole 300 KG WL	No.	3451
310-061	9.0 M PSC pole 400 KG WL	No.	4075
	Ribbed Tor Steel (RTS) Grills		
310-026	* 7.5 mts.RTS Grill	No.	2550
310-027	* 8.0 mts.RTS Grill	No.	2751
310-024	* 9.14 mts.RTS Grill	No.	6281
	<u>Cross arm and fittings</u>		
331-081	1068 mm (3'-6") V Cross arm	No.	702
331-096	1068 mm (3'-6") V Cross arm (GI)	No.	1097
331-083	1373 mm (4'-6") V Cross arm	No.	1241
331-097	1373 mm (4'-6") V Cross arm (GI)	No.	1931
331-084	1525 mm (5'-0") V Cross arm	No.	1378
331-086	1525 mm (5'-0") V Cross arm (GI)	No.	2006
331-152	Tapping channel cross arm	No.	913
331-162	Tapping channel cross arm (GI)	No.	1234
* - indicates not procured / Existing inventory			

Item code No	Description	Unit	2021-22 Rate (in Rs.)
331-163	Tapping channel cross arm for 33 KV	No.	3214
331-138	Double channel cross arm	No.	6937
331-134	Guarding cross arm	No.	857
331-139	Guarding cross arm (GI)	No.	1299
331-759	Cross bracing set	No.	8816
331-054	LT 3 phase angle cross arm	No.	469
331-055	LT 3 phase channel cross arm	No.	471
331-066	LT 3 phase channel cross arm (GI)	No.	441
331-050	LT single phase angle cross arm	No.	204
331-064	LT single phase angle cross arm (GI)	No.	322
331-051	LT single phase channel cross arm	No.	201
331-065	LT single phase channel cross arm (GI)	No.	303
331-701	HT TI fitting	No.	189
331-708	HT TI fitting (GI)	No.	274
331-704	HT TI fitting for 33 KV	No.	318
331-700	LT TI fitting	No.	199
331-707	LT TI fitting (GI)	No.	316
311-008	Aluminium Knob	No.	21
331-712	Transformer structure materials 10'	Set	13588
331-715	Transformer structure materials (GI)	Set	15586
331-505	Transformer structure clamp	Set	3718
331-507	Transformer structure clamp (GI)	Set	4106

Item code No	Description	Unit	2021-22 Rate (in Rs.)
	Materials for single pole HVDS		
331-719	11 KV HVDS Single pole transformer structure material with clamp	No.	5724
331-717	11KV HVDS single pole mounted structure materials complete set (11 KV Vertical type AB (GOS) switch with composite Polymer insulator & 11 KV Solid core type HG fuse set with composite polymer insulators & Single pole Transformer structure materials with clamp)	No.	33652
331-722	22 KV HVDS Single pole Transformer centre set with clamp	No.	7691
	22 KV HVDS single pole Structure materials complete (22 KV Vertical type AB (GOS) Switch with polymer insulators, 22 KV Solid core type HG Fuse set with polymer insulator and Transformer Centre set & clamp)	No.	45607
330-128	11 KV HVDS Single pole vertical type AB switch with insulator	No.	16972
330-123	22KV HVDS Vertically mounted AB Switch with composite polymer insulator and 22 KV HG Fuse set with solid core type composite polymer insulator with all switch accessories	set	35400
330-608	11 KV HG fuse Set with solid core insulator for (GOS) single pole structure - Vertical type	set	5892
330-622	22 KV HG Fuse set with solid core insulator for (GOS) Single Pole structure - Vertical type	set	9986
	Paint		
700-444	Aluminium paint	No.	201
700-422	Red oxide paint	No.	123
700-300	Enamel Paint - White	No.	485
700-305	Enamel Paint - Black	No.	490
700-310	Enamel Paint - Red	No.	480
700-320	Enamel Paint - Green	No.	465
700-325	Enamel Paint - Blue	No.	480

Item code No		Description	Unit	2021-22 Rate (in Rs.)
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700-330		Enamel Paint - Yellow	No.	480
700-335		Enamel Paint - Grey	No.	288
500-485		Silicagel	kg	195
022-600		Silicagel Breather 1/2" (63 &100 KVA)	No.	338
022-061		Silicagel Breather 3/4" (200 KVA &250 KVA)	No.	532
022-602		Silicagel Breather 1" (500 KVA)	No.	865
022-604		Silicagel Breather for Power Transformer	No.	5133
		<u>Clamp/Stay/Base Plate (Each)</u>		
331-467	*	Back clamp for 7.5m RCC pole	No.	109
331-465		Back clamp for 7.5m PSC pole	No.	92
331-241	*	Back clamp for 8m RCC pole	No.	83
331-466		Back clamp for 8m PSC pole	No.	82
331-242		Back clamp for 9.14m special RCC pole	No.	109
331-248		Back Clamp for 9.14 Mts RCC Pole (GI)	No.	109
331-244		Back clamp for 9.0 m PSC Pole	No.	104
331-264		Back clamp for RSJ pole	No.	175
331-350	*	Stay clamp (Pair) for 7.5m RCC pole	No.	134
331-354		Stay clamp (Pair) 7.5 m PSC pole	No.	164
331-231	*	Stay clamp (Pair) 8.0m RCC pole	No.	169
331-356		Stay clamp (Pair) 8.0m PSC pole	No.	153
331-358		Stay Clamp (Pair) for 8.0 Mts PSC Pole (GI)	No.	171
331-353		Stay clamp (Pair) for 9.0 m PSC pole	No.	242
331-357	*	Stay clamp (Pair) 9.14m RCC pole	No.	263

*** - indicates not procured / Existing inventory**

Item code No	Description	Unit	2021-22 Rate (in Rs.)
	15		
331-368 &331-487	RSJ pole Stay Clamp Special A side (200 x 100mm)	No.	427
331-488	RSJ pole Stay Clamp Special B side (200 x 100mm)	No.	418
	Stay clamp pair for 9.0 m square pole	No.	165
310-014	Base plate	No.	261
310-015	Stay plate	No.	261
331-752	stay bow	No.	91
331-753	Stay Eye Blot & Nut	No.	122
331-751	Stay Rod	No.	196
331-750	Stay set complete (eye, bow & rod) without GI wire	No.	413
331-755	GI Stay set complete without GI wire	No.	578
312-563	GI Stay wire 7/12 SWG (kg)	kg	78
314-484	Aluminium 'U' Clamp for Pillar Box	No.	56
314-480	Aluminium 'Z' Clamp for Pillar Box	No.	160
021-418	Aluminium Flat 50 X 12mm for Pillar Box	kg	237
313-990	Aluminium switch end clamp with tail		263
313-991	Aluminium switch end clamp without tail	No.	237
021-419	GI Stem Bolts and Nuts 155X12.5mm or 6" X 1/2" for Pillar Box	No.	32
021-420	GI Stem Bolts and Nuts 155X16.0 mm or 6" X 5/8" for Pillar Box	No.	54
021-416	Hexagonal Insulator 1/2" for pillar box	No.	8
021-417	Hexagonal Insulator 5/8" for pillar box	No.	10
315-102/ 315-526	BIMETALLIC CLAMPS (Transfomer bushing clamp) FOR LT SIZE 95 SQ.MM CABLE	No.	222
315-104	BIMETALLIC CLAMPS (Transfomer bushing clamp) FOR LT SIZE 120 SQ.MM CABLE	No.	216

Item code No	Description	Unit	2021-22 Rate (in Rs.)
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315-106	BIMETALLIC CLAMPS (Transfomer bushing clamp)FOR LT SIZE 185 SQ.MM CABLE	No.	413
315-107	BIMETALLIC CLAMPS (Transfomer bushing clamp)FOR LT SIZE 240 SQ.MM CABLE	No.	1109
	Clamps for Conductors as per relevant IS & its amendments		
314-515	L Clamp for DOG Conductor	No.	900
314-517	L Clamp for Panther	No.	1305
315-168	L Clamp for Kundah	No.	1355
314-532	L Clamp for Zebra	No.	1175
314-730	Aluminium 'T' Clamp	No.	244
314-815	'T" clamp for Kundah to Kundah	No.	1493
314-466	T CLAMP FOR 2" BUS TO KUNDAH	No.	1537
314-467	T" clamp for 3" busbar to Kundah	No.	1982
314-469	T Clamp for Double Kundah to Single Kundah	No.	2975
314-816	'T" clamp for single Zebra to single Zebra	No.	1486
314-765 &314-955	T" clamp for 2" busbar to zebra	No.	1551
314-769	"T" Clamp for 2" bus bar to double zebra	No.	2950
314-930	T" clamp for 3" busbar to zebra	No.	1630
	"T" Clamp for 3" bus bar to double zebra	No.	2955
314-958	'T" clamp for Double Zebra to Double Zebra	No.	2980
314-971	'T" clamp for Double Zebra to Single Zebra	No.	2960
314-932	Aluminium switch end clamp for 2" Bus bar	No.	1579
	Aluminium switch end clamp for 3" Bus bar	No.	1845
	Aluminium switch end clamp for Panther	No.	1325

Item code No	Description	Unit	2021-22 Rate (in Rs.)
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314-933	Aluminium switch end clamp for Kundha	No.	1375
315-520	Aluminium switch end clamp for Zebra	No.	1359
	Aluminium switch end clamp for Mink	No.	1340
314-471	Reducer clamp for 2" Busbar to Kundah	No.	2062
314-504	Reducer clamp for 3" Busbar to Kundah	No.	2655
314-489	Reducer clamp for 2" Busbar to Zebra	No.	2378
314-534	Reducer clamp for 3" Busbar to Zebra	No.	2532
314-033	Parallel Groove clamp (PG Clamp) suitable for DOG conductor	No.	1138
314-458	Parallel Groove clamp (PG Clamp) suitable for Panther conductor	No.	1061
314-457	Parallel Groove clamp (PG Clamp) suitable for Kundah conductor	No.	1195
	Aluminium P.G.Clamp for Kundha to Kundha	No.	1120
	Parallel Groove clamp (PG Clamp) suitable for Zebra conductor	No.	1175
314-455	Free end clamp for 2" bus bar with bolts & Nuts	No.	1107
314-456	Free end clamp for 3" bus bar	No.	1082
	Aluminium Mink Clamp for 7/4.09 AAA Conductor	No.	1328
	Aluminium Power Transformer bushing clamp for Kundha	No.	1510
314-176	Terminal connector for Kundha conductor	No.	932
	CT Bushing clamp for Kundah	No.	1115
315-521	CT Bushing clamp for Zebra	No.	1115
	<u>BOLTS & NUTS Per MT</u>		
610-189	MS Hexagonal Bolt & Nut 1-1/2" x 5/8" (38X16 mm) per MT	MT.	105413
610-254	MS Hexagonal Bolt & Nut 2" x 5/8" (50 x 16 mm)	MT.	71920
610-252	MS Hexagonal Bolt & Nut 2-1/2" x 5/8" (63 x 16 mm)	MT.	79985

Item code No	Description	Unit	2021-22 Rate (in Rs.)
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610-258	MS Hexagonal Bolt & Nut 3" x 5/8" (75 x 16 mm)	MT.	81874
610-256	MS Hexagonal Bolt & Nut 3-1/2" x 5/8" (89 x 16 mm)	MT.	79919
610-262	MS Hexagonal Bolt & Nut 4" x 5/8" (100x16mm)	MT.	81997
610-260	MS Hexagonal Bolt & Nut 4-1/2" x 5/8" (113x16mm)	MT.	80398
610-265	MS Hexagonal Bolt & Nut Size -5"X 5/8" (125 x 16 mm)	MT.	96799
610-267	MS Hexagonal Bolt & Nut 6" x 5/8" (150 x 16 mm)	MT.	80522
610-269	M.S. BOLT & NUTS 6 1/2 X 5/8" (165X16 mm)	MT	115180
610-271	MS Hexagonal Bolt and Nut 7x5/8 Inch (178X16mm)	MT.	92000
610-272	MS Hexagonal Bolt & Nuts 8" x 5/8" (200X16 mm)	MT.	86139
610-274	MS BOLTS & NUTS 9"X 5/8" (225X16 mm)	MT.	76000
610-276	MS Hexagonal Bolt & Nuts 10" x 5/8" (255X16 mm)	MT.	72405
610-278	MS Hexagonal Bolt & Nut 11" x 5/8" (275x 16 mm)	MT.	86462
610-279	MS Hexagonal Bolt & Nut 12" x 5/8" (300x16 mm)	MT.	78435
610-280	MS Hexagonal Bolt & Nut 13x5/8 Inches (330x16mm)	MT.	93220
	MS Hexagonal Bolt & Nut 13-1/2"X5/8" (350x16mm)	MT.	90330
	MS Hexagonal Bolt & Nut 14" x 5/8" (355X16 mm)	MT.	90276
610-282	MS Hexagonal Bolt & Nut 15" x 5/8" (380x16mm)	MT.	86260
	MS Hexagonal Bolt & Nut 15 1/2" x 5/8" (400x16mm)	MT.	74772
620-180	GI Bolts & Nuts 2-1/2"x5/8" (63x16 mm)	MT.	135400
620-181	GI Bolts & Nuts 3-1/2"X5/8" (89x16 mm)	MT.	118390
620-131	GI Hexagonal Bolt & Nut 4-1/2" x 5/8" (113x16mm)	MT.	78010
	GI Hexagonal Bolt & Nut 5"X 5/8"(125 x 12 mm)	MT.	90808
620-185	G.I. Bolt and Nut 6" x 5/8" (150 x 16 mm)	MT.	115000

Item code No	Description	Unit	2021-22 Rate (in Rs.)
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	GI Hexagonal Bolt & Nut 10" x 5/8"(255 x 12 mm)	MT.	99470
611-206	M.S.Washer-1/2" (12 mm dia)	MT.	74760
610-208	M.S.Washer 5/8" (16mm dia)	MT.	87374
620-737	G.I. Washer 1/2" (12 mm dia)	MT.	91000
620-739	G.I. Washer 5/8" (16 mm dia)	MT.	80240
	Copper Flexible Wire		
321-466	2.5 Sq.mm	mtr.	20
321-467	4 Sq.mm	mtr.	30
	Galvanised Iron (GI) Wires (Per M.T)		
312-562 & 312-582	7/11 Standard Wire Gauge (SWG)/ 7/2.80 mm Stranded	MT.	75755
312-563 & 312-584	7/12 SWG/ 7/2.50 mm Stranded	MT.	77560
312-565	7/20 SWG stranded	MT.	75900
312-566	7/10 SWG/ 7/3.15 mm stranded wire	MT.	63800
312-567	7/9 SWG/ 7/3.55 mm stranded wire	MT.	84700
	GI Solid Wire		
	No.12 SWG Solid wire (2.65 mm solid wire)	MT.	71430
	No.11 SWG Solid wire (3 mm solid wire)	MT.	65490
312-508	No.6 SWG Solid wire (4mm Solid wire)	MT.	70112
312-509	No.8 SWG Solid wire (5mm Solid wire)	MT.	69336
	Earth pipe/rod		
331-673	G I Earth pipe 40mm dia (10 feet -3mts length)	No.	970
331-674	G I Earth pipe 50mm dia	No.	1999

Item code No	Description	Unit	2021-22 Rate (in Rs.)
	Discharge/earth rod		
331-675	Discharge/ Earth rod 4 feet (per set) (Distribution type)	Set	3400
331-688 &331-689	Discharge/ Earth rod 10 feet (per set) (SS type)	Set	7330
331-678	Telescopic Earth Rod extendable type per set (Material - PVC Pipe, 1 Set of 3 Nos, Size 4 Feet) (Distribution type)	Set	2276
331-681	Telescopic Earth Rod with copper wire 10' (SS Type) (per set)	Set	6955
	Line seperators		
340-885	LT, 3 Phase, 4 wire spiral phase line separator	No.	280
	LT, 3 Phase, 3 wire spiral phase separator		246
340-886	LT line spacer single phase 2 wire	No.	150
340-887	Line Separator 1 Phase, 3 Wire Spiral type	No.	245
504-614	Rubber Gauntlets	Set	458
504-613	Rubber Gloves	Set	490
	Bolt & nuts & binding wire /pole	lump sum	888
	Cement		
700-160	Ordinary Portland (O.P)Cement 53 Grade	per bag	290
331-685	Earthing Device made up of MS Angle 40x40x6mm along with MS Rod 3/8" (10mm) - As per IS of latest issue with up to date amendments	No.	670
	Pipe Earthing		
	G.I.Pipe (40 mm dia) 3 mts and G.I.wire 8 SWG, Bolt & Nuts- 4 1/2 x 5/8" Set (586x3)+(69*10)+(80*5)= 987+720+455=2162	lump sum	2848
	Coil earthing per pole		
	G.I. Wire (8 SWG)(10 Kg), Bolt & Nut (3 1/2x5/8")- 5 Kg) - Set = (69*10)+(80*5)=690+400=1290	lump sum	1090

Item code No	Description	Unit	2021-22 Rate (in Rs.)
	Structure Earthing		
	Structure Earthing with GI pipe 40 mm dia 3 Nos, MS Flat 50x6 MM 5 KG Bolt & Nut (11x5/8") 6 Kg, GI No.8 SWG wire 35 Kg) (586x3)+(60x5)+(86x6)+(69x35)	lump sum	4989
	Concreting		
	concreting per pole(cement 1/2 bag, River Sand,Blue metal) (290/2+447+430)	lump sum	1022
	Concreting per structure (290/2+447+430)*2	lump sum	2044

Group III - Street Light

511-217	*	250W sodium vapour ballast	No.	1751
501-109	*	Sodium vapour lamp 250W	No.	814
501-212	*	Sodium vapour lamp fitting complete with 250 W bulb	No.	2882
331-498		Street light fixture clamp (Pair)	No.	316
331-541		Street light fixture pipe	No.	352
501-011		9 watts LED lamps	No.	100
501-249		4 Feet 16 W LED Tube light with fitting	No.	322
		20 watts LED tubular lamps	No.	398
501-232		36W/40W FLOURESCENT TUBE	No.	40
501-202		40 W choke(ELECTRONIC BALLAST)	No.	280
501-241		36/40W Flourescent street light fitting without bulb	No.	903
501-246		LED Lamp 40 Watts with Fittings	No.	1300
		72 W LED Street Light Fittings	No.	1513
501-248		72 Watts LED Street Light Bulb	No.	1804
510-245		72W LED street Light Fitting with Lamp	No.	3705

Item code No	Description	Unit	2021-22 Rate (in Rs.)
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Group IV - Ring Main Unit (RMU)

	VARIOUS TYPES OF 11 RMUs with FRTU, Structures for DTs and associated materials (including DT/RMU earthing, foundation and termination)		
023-367	5 way 11 KV RMU configuration R-R-R-R-R	Each	1399019
021-803	5 way 11 KV RMU configuration R-R-R-R-L	Each	1619325
021-804	5 way 11 KV RMU configuration R-R-R-L-L	Each	1834008
021-805	5 way 11 KV RMU configuration R-R-L-L-L	Each	1957974
021-806	3 way 11 KV RMU configuration R-R-R	Each	972654
021-807	3 way 11 KV RMU configuration R-R-L	Each	1211126

GROUP V - INNOVATIVE EQUIPMENTS

	New equipment's		
021-437	LT fixed capacitor 1x9 KVAR	Each	7757
021-438	LT fixed capacitor 2x9 KVAR	Each	14666
	Electronic (Static) type:-		
400-079	1 PH STATIC METER 5-20A	No.	670
400-078	Single phase Bidirectional Static Meter 5-20A (Solar)	No.	1240
400-085	Three phase meter 10-60A STATIC	No.	1800
400-500	Three phase meter 50-100A Static Meter Bi- directional meters for solar - net metering	No.	6275
400-345	Three phase meter 100A static	No.	7500
	Single Phase whole current Smart Meter 5-20 / 30 A	No.	3509
	Three Phase whole current Smart Meter 10-60A	No.	5401
	Three Phase whole current Smart Meter 10/20/50-100 A	No.	6520

Item code No	Description	Unit	2021-22 Rate (in Rs.)
	Three Phase LTCT operated Smart Meter for consumer	No.	9123
	Three Phase LTCT operated Smart Meter with Box, CTs and Cabling for DTs	No.	26927
	Modular RF Mesh Module (for installation with each meter)	No.	1731
	Data Concentrator Units/Gateway/Router for forming FR Mesh Canopy	No.	55745
	MODEM (HT & Ring Fencing)	No.	9000
	DCUs for SS Feeders	No.	167313
	LTCT 5A Composite Meter	No.	2735
	110 KV Metering CT	No.	89844
	HT 110/1A, DLMS 0.5 s Feeder Meter	No.	7080
400-330	3 PH 4 WIRE LT CT OPERATED STATIC METER 240V/5A 0.5 S DLMS	No.	2258
420-093	Resin cast Ring type LT CT 200/5A Electronic (Static) type Meter	No.	546
420-106	Resin cast Ring type LT CT 400/5A Electronic (Static) type Meter	No.	570
420-127	Resin cast Ring type LT CT 800/5A Electronic (Static) type Meter	No.	388
400-193	3 Phase (10-60A) Solar Bidirectional Meters	No.	3960
400-083	50-100 Amps Three phase Static meter	No.	5817
203-048	Common Meter Reading Instrument (CMRI)	No.	22243
	<u>Trivector meters (Time Of Day (TOD) Type)</u>		
400-348	3 Phase HT Static trivector meter 110V/1A (With TOD)	No.	7080
400-255	3 Phase HT Static trivector meter 110V/5A (With TOD)	No.	23050
400-343	3 Phase HT Static trivector meter 240V/5A (with TOD)	No.	2250
400-501	3 Phase HT Static trivector meter 110V/5A TOD-DLMS 0.2 S ABT (Available Base Tariff) Future	No.	26800

Item code No	Description	Unit	2021-22 Rate (in Rs.)
400-270	HT TOD - 110V/5A static meter Bi-Directional meter for solar -net metering	No.	6408
400-328	3 Phase 4 Wire LT CT operated static meter 240V/5A.	No.	2310
400-503	3 phaseLT CT Bi-directional static meter 240V/5A (Solar)	No.	11018
340-850	PolyCarbonate Seals	No.	4
	<u>Metering Sets per Each (Accuracy class 0.2 S)</u>		
021-120	11 KV set , 10/5A	No.	63720
021-120	11 KV set, 20/5A	No.	63720
021-120	11 KV set, 40/5A	No.	63720
021-120	11 KV set, 60/5A	No.	63720
021-120	11 KV set, 100/5A	No.	63720
021-120	11 KV set, 150/5A	No.	63720
021-120	11 KV set, 200/5A	No.	63720
021-120	11 KV set, 300/5A	No.	63720
021-120	11 KV set, 100/5A	No.	63720
021-221	22 KV set 5/5A	No.	130980
021-221	22 KV set, 10/5A	No.	130980
021-221	22 KV set, 15/5A	No.	130980
021-221	22 KV set, 20/5A	No.	130980
021-221	22 KV set, 25/5A	No.	130980
021-221	22 KV set, 30/5A	No.	130980
021-221	22 KV set, 40/5A	No.	130980
021-221	22 KV set, 50/5A	No.	130980
021-221	22 KV set,60/5A	No.	130980

Item code No	Description	Unit	2021-22 Rate (in Rs.)
021-221	22 KV set,80/5A	No.	130980
021-221	22 KV set,100/5A	No.	130980
021-221	22 KV set,120/5A	No.	130980
021-221	22 KV set,150/5A	No.	130980
021-221	22 KV set,175/5A	No.	130980
021-221	22 KV set,200/5A	No.	130980
021-221	22 KV set,250/5A	No.	130980
021-221	22 KV set,300/5A	No.	130980
021-221	22 KV set,400/5A	No.	130980
	33 KV set 10/5A	No.	156350
	33 KV set 20/5A	No.	156350
	33 KV set 30/5A	No.	156350
	33 KV set 40/5A	No.	156350
	33 KV set 50/5A	No.	156350
	33 KV set 60/5A	No.	156350
	33 KV set 100/5A	No.	156350
	33 KV set 150/5A	No.	156350
	33 KV set 200/5A	No.	156350
	33 KV set 300/5A	No.	156350
	<u>Meter Board/Meter Box</u>		
340-047	457 x 305 x 12 mm (Teak Wood) T.W.Board	No.	599
340-048	457 x 610 x 12 mm T.W.Board	No.	734
340-049	915 x 610 x 16 mm T.W.Board	No.	569
340-051	208 x 243 x 10 mm T.W.Board	No.	264

Item code No	Description	Unit	2021-22 Rate (in Rs.)
340-050	200 x 200 x 12 mm T.W.Board	No.	75
331-604	LT METERING BOX	No.	5060
331-605	HT METERING BOX	No.	14814
<u>High Tension (HT) Cables</u>			
<u>Cross Linked Poly Ethylene Aluminium (XLPE) cables</u>			
321-801	33KV UG ALU XLPE CABLE 1x1000 SQ MM.	Km.	1670880
321-807	33 KV 1x630 Sq.mm	Km.	1296820
321-821	33 KV 3x630 Sq.mm	Km.	4484000
321-804	33 KV 3x400 Sq.mm	Km.	2318181
321-684	11 KV 1x630 Sq.mm	Km.	883159
321-594	11 KV 3x300 Sq.mm	Km.	1711000
321-593	11 KV 3x120 Sq.mm	Km.	881460
<u>Low Tension (LT) Under Ground(UG) cables</u>			
321-020	2x16 Sq.mm	Km.	61216
321-119	4x25 Sq.mm	Km.	118529
321-120	4x120 Sq.mm	Km.	457979
321-121	4x240 Sq.mm	Km.	878170
<u>Pillar Boxes Open Type</u>			
021-412	MS Open type 6 way pillar boxes	Each	33197
021-405	PILLAR BOX MS 6 way with HRC fuse	Each	68347
021-422	Fibre Reinforced Plastic (FRP) 6 way Pillar box	Each	42534
	PILLAR BOX MS 4 way with HRC fuse	Each	50193
021-404	Fibre Reinforced Plastic (FRP) 4 way Pillar box	Each	23286
021-470	Fibre Reinforced Plastic (FRP) Mini Pillar box	Each	11011

Item code No	Description	Unit	2021-22 Rate (in Rs.)
021-408	LT open type Mini pillar box	Each	9075
	<u>Joint Kits for Cables</u>		
	Joint Boxes		
	Straight through type		
	<u>Cross Linked Poly Ethylene (XLPE) cables</u>		
322-548	STRAIGHT JOINT KIT (Heat Shrinkable (HS) TYPE) FOR XLPE 33KV 3X400 SQMM	Each	21887
322-554	STRAIGHT JOINT KIT (OUTDOOR - TAPEX TYPE) FOR XLPE 33KV 3X400 SQMM	Each	23895
322-559	Straight Joint Kit (HS type) for 33KV, 1X 630 Sq mm cable	Each	9366
322-552	STRAIGHT JOINT KIT (HS TYPE) FOR XLPE 11KV 3X300 SQMM	Each	5735
322-550	STRAIGHT JOINT KIT (HS TYPE) FOR XLPE 11KV 3X120 SQMM	Each	5066
	STRAIGHT JOINT KIT (HS TYPE) FOR XLPE 11KV 1X630 SQMM	Each	12803
	Straight Joint Boxes		
	(a) Low Tension		
	<u>Heat Shrinkable (HS) type, XLPE cable</u>		
322-050	1.1 KV 2x16 Sq.mm	Set	710
322-764	1.1 KV 4 x 25 Sq.mm	Set	352
322-765	1.1 KV 4x120 Sq.mm	Set	770
322-766	1.1 KV 4 x 240 Sq mm	Set	1495
	<u>Heat shrinkable type transition kit for</u>		
	<u>XLPE cable to PILC</u>		
322-633	Transition kit (HS Type) 11KV PILC TO 3X300 Sq.mm XLPE	Each	14298
322-627	Transition kit (HS Type) 11KV PILC TO 3X120 Sq.mm XLPE	Each	9461

Item code No	Description	Unit	2021-22 Rate (in Rs.)
	Outdoor type cable termination joint kit		
	Heat Shrinkable (HS) type		
322-740	OD termination kit (outdoor - HS type) for 33KV 3X400 sq.mm	Each	7847
322-742	OD termination kit (outdoor - HS type) FOR 33KV 1X630 sq.mm	Each	6714
322-562	OD termination kit (outdoor - HS type) FOR XLPE 11KV 3X300 sq.mm	Each	2420
322-560	OD termination kit (outdoor - HS type) FOR XLPE 11KV 3X120 sq.mm	Each	2117
	<u>Indoor type Termination kit (HS type for XLPE cable)</u>		
	Heat Shrinkable (HS) type		
322-591	ID termination kit (Indoor) FOR XLPE 33KV 3X400 sq.mm	Each	6500
322-738	ID termination kit for XLPE 33 KV 1x630 Sq.mm	Each	3046
322-588	ID termination kit for XLPE 11KV 3X300 sq.mm	Each	2087
322-586	ID Termination kit for 11 KV, 3X120 sqmm	Each	1652
	<u>Cable Compound</u>		
322-520	LT	Tonne	80302
	`V' Trough		
322-513	V Trough for 33KV	Each	392
322-512	V TROUGHS FOR 11KV	Each	245
322-517	33 KV RCC cover slab	Each	307
	<u>Spun Pipes</u>		
710-810	Spun pipe 225 mm (RCC)	Each	1170
710-811	Spun pipe 150 mm (RCC)	Each	801
710-836	Spun pipe 100 mm (RCC)	Each	627

Item code No	Description	Unit	2021-22 Rate (in Rs.)
	Under Ground (UG) service connection material		
340-736	Aluminium LUGS 120 Sq.mm	Each	9
340-737	Aluminium LUGS 240 Sq.mm	Each	22
340-747	Aluminium line connector 120 Sq.mm	Each	8
340-749	Aluminium line connector 240 Sq.mm	Each	18
	Aluminium Hollow pipe (Rate per kg)		
642-163	Hollow pipe Alu. 1 inch OD - 3.1m length	Kg.	1408
642-150	Hollow pipe 38mm (1.5 Inch) dia,(Alu.Bus bar)	Kg.	987
642-152	Alu. Bus bar 50 mm-(2 In) Dia	Kg.	378

GROUP V - STEEL ITEMS

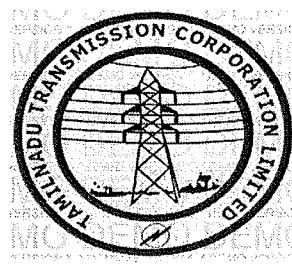
	Mild Steel (M S) Rods/Rounds		
600-720	12 mm	MT	61360
600-721	16 mm	MT	61360
600-722	20 mm	MT	61360
600-728	40 mm	MT	61360
	Mild Steel (MS) Flats		
600-450	50 x 6 mm	MT	59590
600-471	50 x 8 mm	MT	59118
600-491	65 x 10 mm	MT	59118
	200 x 6 mm	MT	61832
	300 x 8 mm	MT	61832
	Rolled Steel (R.S.) Joist		
600-426	250 x 125 mm (11.19 kg/feet)	MT	44863
	42' RSJ pole	Each	21085
	40' RSJ pole	Each	20081
	36' RSJ pole	Each	18073

Item code No		Description	Unit	2021-22 Rate (in Rs.)
		30		

Item code No	Description	Unit	2021-22 Rate (in Rs.)
310-083	200 x 100 mm (7.26 kg/feet)	MT	55100
310-305	42' RSJ pole	Each	16801
310-304	40' RSJ pole	Each	16001
310-303	36' RSJ pole	Each	14401
310-302	33' RSJ pole	Each	13201
310-301	30' RSJ pole	Each	12001
	Mild Steel (M.S.)Angles		
600-021	50 x 50 x 6 mm	MT	60534
600-035	65 x 65 x 6 mm	MT	60652
	M.S.Channel		
600-305	75x40 mm	MT	60888
600-311	100x50 mm	MT	60593
600-316	125x 65 mm	MT	61360
600-335	150x75 mm	MT	60298
600-356	200x 75mm	MT	60298
	Copper control cables		
	2C x 2.5 sq.mm armoured copper control cable	Km.	70555
321-399	4C x 2.5 sq.mm armoured copper control cable	Km.	107762
321-412	4C x 4 sq.mm armoured copper control cable	Km.	151285
	8C x 2.5 sq.mm armoured copper control cable	Km.	180405
321-459	8C x 4 sq.mm armoured copper control cable	Km.	285140
321-501	14C x 2.5 sq.mm armoured copper control cable	Km.	297757
	50mm Aluminium Bus Bar	No.	405920

ABSTRACT OF MATERIALS - COST DATA (2021-22)

PSC Poles			RCC Poles		
7.5 m PSC (ordinary)	No.	1868	7.5 m RCC	No.	2881
8.0 m PSC (140 Kgs.)	No.	2523	8.0 m RCC	No.	2915
9.0 M PSC pole 300 KG WL	No.	3451	9.14 m.G.201 Special RCC	No.	5723
9.0 M PSC pole 400 KG WL	No.	4075	9.0 m (150 Kg) Square section RCC pole	No.	5842
42' RSJ pole	No.	21085			
36' RSJ pole	No.	18073			
Base plate	No.	261			
ACSR Conductor			AAAC Conductor		
Weasel 7/2.59 mm	Km.	26423	7/2.5 mm	Km.	23058
Rabbit 7/3.35 mm	Km.	38681	7/3.15 mm	Km.	30422
Raccoon 7/4.09 mm	Km.	71830			
Dog 6/4.72 & 7/1.57 mm	Km.	116251			
Line Materials -HT			Line Materials -LT		
1068 mm (3'-6") V Cross arm	No.	702	LT 3 phase angle cross arm	No.	469
1373 mm (4'-6") V Cross arm	No.	1241	LT 3 phase channel cross arm	No.	471
1525 mm (5'-0") V Cross arm	No.	1378	LT single phase angle cross arm	No.	204
Tapping channel cross arm	No.	913	LT single phase channel cross arm	No.	201
Guarding cross arm	No.	857	Back clamp for 7.5m PSC pole	No.	92
Back clamp for 9.0 m PSC Pole	No.	104	Back clamp for 8m PSC pole	No.	82
Back clamp for RSJ pole	No.	175	LT Pin and Insulator (37+20)	No.	57
11kV Pin and Insulator (76+58)	No.	134	LT Shackle with Metals Parts(19+55)	No.	74
22kV Pin and Insulator (160+129)	No.	289	LT TI fitting	No.	199
33kV Pin and Insulator (240+2127)	No.	2367	Aluminium Knob	No.	21
11 KV 45 KN strain disc insulator	No.	316	Stay clamp (Pair) 7.5 m PSC pole	No.	164
11 KV Metal Parts	No.	203	Stay clamp (Pair) 8.0m PSC pole	No.	153
11kV Strain and Metal Parts	No.	519	Stay set Complete	Set	1060
HT TI fitting	No.	189	LT Guy shackle insulator	No.	26
HT TI fitting for 33 KV	No.	318	Concreting per Pole	Loc	1022
Stay clamp (Pair) 8.0m PSC pole	No.	153	Earthing per Pole	Loc	1090
Stay clamp (Pair) for 9.0 m PSC pole	No.	242	Bolt & Nuts	Loc	888
RSJ pole Stay Clamp Special A side (200 x 100mm)	No.	427			
Transformers					
11 KV/433V			22 KV/433V(Each)		
16KVA (Copper winding) Energy Efficient Level-2	No.	99089	16KVA (Copper Winding) Energy efficient Level 2	No.	42350
25KVA (Copper winding) Energy Efficient Level - 2	No.	112665	25KVA (Copper Winding) Energy efficient Level 2	No.	48400
63KVA (Copper winding) Energy Efficient Level - 2	No.	202736	63 KVA (Copper Winding) Energy efficient Level 2	No.	211975
100 KVA (Copper winding) Energy Efficient Level 2	No.	260936	100 KVA (Copper Winding) Energy efficient Level 2	No.	298963
250 KVA (Copper Winding) Energy efficient Level 2	No.	465718	200 KVA (Copper Winding) Energy efficient Level 2	No.	433093
DT Structure materials Set					
Transformer structure materials 10'	Set	13588	Concreting per structure (290/2+447+430)*2	LS	2044
Transformer structure clamp	Set	3718	Structure Earthing	LS	4989
11 KV AB switch (200A) With PT insulators	No.	16038			
11 KV AB Switch Fixed contact-200A	No.	1012			
11 KV AB Switch moving contact - 200 A	No.	1195			
11 KV AB Switch Fixed contact - 400 A	No.	2118			
11 KV AB Switch Moving contact - 400 A	No.	2825	METERS		
11 KV HG Fuse Set(without insulator)	Set	2038	Single phase meter 5-20A STATIC	No.	670
22 KV AB switch (200 A) With PT insulators	No.	17386	Three phase meter 10-60A STATIC	No.	1800
Fixed contact for 22 KV AB Switch	No.	817	Three phase 50-100 Amps Static meter	No.	5817
Moving contact for 22 kv AB Switch	No.	958	240V/5A LTCT STATIC METER 0.5 S DLMS	No.	2258
22 KV HG Fuse Set(without insulator)	Set	2086			
LT Open type fuse unit (without insulator)	Set	1052	1 Phase Bidirectional Static Meter 5-20A (Solar)	No.	1240
G I Earth pipe 40mm dia (10 feet -3mts length)	No.	970	3 Phase (10-60A) Bidirectional Meters (Solar)	No.	3960
11 KV LAS	No.	399	3 Phase Bidirectional Static Meter 50-1000A (Solar)	No.	6275
22 KV LAS	No.	588.69			
LT fixed capacitor 2x9 KVAR	Each	14666			
LT LAS's	Each	286			



POWERING TAMILNADU'S PROGRESS....

TAMILNADU TRANSMISSION CORPORATION LTD

COST DATA

2021-22

VISION STATEMENT
To make
TANTRANSCO synonymous with
availability of quality and reliable power
at competitive rates

:TAMIL NADU TRANSMISSION CORPORATION LTD:

From
 Er.G.Jayanthi, B.E.,
 Chief Engineer/ Transmission (i/c),
 TANTRANSCO HQ,
 144, Anna Salai,
 Chennai – 600 002.

To
 1.The Chief Engineer/ Transmission Project I, Chennai
 2.The Chief Engineer/ Transmission Project II, Trichy
 3. The Chief Engineer/ Civil/ Transmission
 4. The Chief Engineer/ Planning & RC, Chennai
 5. The Chief Engineer/ P&C, Chennai
 6. The CEs/ System Operation & Grid Operation
 7. The Chief Engineer/ NCES, Chennai
 8. The Chief Engineer/ Distribution Regions
 9. CFC/TANTRANSCO

Lr. No.67/ CE/TR/SE/TR-V/EE3/AEE1/F. Cost Data 21-22/21- 2, dt.03.07.2021

Sir,

Sub: TANTRANSCO – Cost Data for the year 2021-22 – Copy
 Communicated – Reg.

TANTRANSCO's Cost Data for the financial year 2021-22 is enclosed for reference.

Sd/-
 Chief Engineer/ Transmission (i/c)

Encl: As above

Copy submitted to the Managing Director/ TANTRANSCO
 Copy submitted to the Director/ Transmission Projects/ TANTRANSCO
 Copy submitted to the Director/ Finance/ TANTRANSCO
 Copy submitted to the Director/ Operation/ TANTRANSCO
 Copy submitted to the Director/ Distribution/ TANGEDCO
 Copy submitted to the Director/ Generation/ TANGEDCO
 Copy submitted to the Director/ Projects/ TANGEDCO
 Copy submitted to the Director/ Finance/ TANGEDCO
 Copy to the Superintending Engineer/ Transmission I, II, III, IV & V
 Copy to the Superintending Engineer/ Civil- I & II/ Transmission
 Copy to the Superintending Engineer/ Design/ P&C/ Chennai
 Copy to the Superintending Engineer/ Design/ Communication/ P&C/ Chennai
 Copy to the Superintending Engineer/ GCC/ Chennai I & II, Coimbatore, Madurai, Salem, Trichy and CDC I & II/ Chennai
 Copy to the Superintending Engineer/ P&C/ Chennai, Madurai, Trichy & Coimbatore
 Copy to the Superintending Engineer/ Operation Circle/ Chennai I, Chennai II, Chennai III, Trichy, Villupuram, Salem, Tirunelveli, Madurai & Coimbatore
 Copy to the Superintending Engineer/ Planning, System Studies & RE&I(D)/ Chennai
 Copy to the Superintending Engineer/ Wind Energy Development Circle/ Udumalpet & Tirunelveli.

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A.COST OF EQUIPMENTS AND MATERIALS

TANTRANS CO-COST DATA 2021-22

Excluding GST

1	2	3
Sl. No.	Description	Cost Data 21-22 Rate in Rs.
1	Auto Transformers & Power Transformers	
	765/420 kV, 500MVA, single phase Interconnection Transformer with OLTC, with Nitrogen injection system for fire protection and line materials required for formation of tertiary delta and neutral bus.	136062500.00
	400/230/33 kV 500 MVA, 3 Phase 50 C/S, YNaod11, Auto Transformer with OLTC and NFIPS	123209145.00
	400/230 kV, 315 MVA Auto (3 phase unit) transformer with OLTC and NFIPS	84314380.00
	400/110 kV, 200 MVA Auto(3 phase unit) transformer with OLTC and NFIPS	77120975.00
	230/110 kV, 160 MVA Auto Transformer with OLTC and NFIPS	46183100.00
	230/110 kV, 100 MVA Auto Transformer with OLTC and NFIPS	37789494.87
	230/110 kV, 33.33 MVA ,1Ø Auto Transformer with OLTC and NFIPS	15312165.00
	230/33kV, 160 MVA Power Transformer with OLTC and NFIPS	68906250.00
	230/33kV, 50 MVA Power Transformer with OLTC	25720110.00
	110/33 kV, 50 MVA Power Transformer with OLTC and NFIPS	18032760.00
	110/33-22 kV, 25 MVA Power Transformer with OLTC	12413439.00
	110/33-11 kV, 16 MVA Power Transformer with OLTC	10131793.00
	110/33-11 kV, 10 MVA Power Transformer with OLTC	8708262.24
	110/22-11 kV, 16 MVA Power Transformer with OLTC	10131793.00
	110/22-11 kV, 10 MVA Power Transformer with OLTC	8708262.24
	33/11 kV 16 MVA Pr.Tr. with OLTC (Indoor)	8477390.00
	33/11 kV, 8 MVA Power Transformer with OLTC	4488880.00
	33 kV/433 V, 1000kVA, Station Transformer with all accessories	1638660.00
	33 kV/433 V, 500kVA, Station Transformer with scada compatible RMU Panel provision	3629500.00
	11 kV/433 V,1000kVA, Station Transformer (including structure) with suitably rated scada Ready RMU (RRLL Configuration) with FRTU including suitably rated HT cables between RMU to Station Transformer and termination kits and LT supply cable, accessories & arrangements. FO communication cables with necessary media converters for integrity FRTU in RMU with SAS	1537500.00

1	2	3
Sl. No.	Description	Cost Data 21-22 Rate in Rs.
	22 kV/433 V Station Transformer, 250 kVA, with HG Fuse set, 22 kV LAS, and structure materials complete set and 4 way FRP pillar box, 22 kV, (1250 A) Isolator (5 no's) with Insulator for station Transformer, all consumables and all accessories	813690.00
	11 kV/433 V, 500kVA, Station Transformer with HG Fuse set, 11 kV LAS and structure materials complete set and 4 way FRP pillar box, 11 kV, (1250 A) Isolator (5 nos) with Insulator for station Transformer, all consumables and all accessories	1516190.00
2	Reactors	
	765 kV,110 MVAR, Single phase Bus Reactor with Nitrogen injection fire protection system and line materials for connectivity.	57812500.00
	765kV 110 MVAR single phase Line reactor with NGR with NFIPS and line materials for connectivity	57812500.00
	765kV 80 MVAR single phase Bus reactor with NFIPS	47056805.00
	765kV 80 MVAR single phase Line reactor with NGR with NFIPS	49409645.00
	400 kV, 125 MVAR, Bus Reactor, with NFIPS three phase	49554110.00
	400 kV, 80 MVAR, Line Reacror, with NGR with NFIPS	44526325.00
	400kV, 80 MVAR Bus Reactor with NFIPS	40748950.00
3	Breakers	
	765 kV, 3150A,50 KA, 3PH Outdoor SF6 Breaker with support structure, pre-insertion resistor and CSD (Control Switching Device)	12417680.00
	765 kV, 3150A, 50 KA, 3PH Outdoor SF6 Breaker with support structure and CSD and without pre-insertion resistor	9468100.00
	765 kV, 3150A, 50 KA, 3PH Outdoor SF6 Breaker with support structure with pre-insertion resistor without CSD	11871460.00
	420 kV, 3150A, 63KA, 3PH Outdoor SF6 Breaker with support structure with pre-insertion resistor with CSD.	3894110.00
	420 kV, 3150A, 63KA, 3PH Outdoor SF6 Breaker with support structure with pre-insertion resistor without CSD.	4500000.00
	420 kV, 3150A, 63KA,3PH Outdoor SF6 Breaker with support structure without pre-insertion resistor with CSD.	3621960.00
	420 kV, 3150A, 63KA,3PH Outdoor SF6 Breaker with support structure without pre-insertion resistor without CSD.	4492641.00
	245 kV, 2000A, 50 KA/3 sec outdoor SF6 Breaker with support structure	1037400.00
	230 kV SF6, 40KA Outdoor Breaker with support structure	1230820.00
	110 kV SF6 (outdoor) 40 KA Breaker with support structure.	445010.00

1	2	3
Sl. No.	Description	Cost Data 21-22 Rate in Rs.
	33 kV VCB (outdoor) 1250A, 40KA with TC	191730.00
	11 kV VCB (outdoor),1250A ,25KA	110750.00
4	Current Transformers	
	765 kV single phase 6 core current Transformer, 3000A, 50 KA, 1 Sec. with support structure and accessories and junction box	1628475.00
	420 kV, 3000A, 63 KA, 6 core single phase current Transformer with support structure, accessories	606420.00
	420 kV, 3000A, 63 KA, 5 core single phase current Transformer with support structure, accessories	640050.00
	420 kV, 3000A, 63 KA, 5 core single phase current Transformer without support structure, accessories	598068.00
	Junction box	4720.00
	245 kV, 2000A, 63 KA, 5 core single phase current Transformer with structure and Junction box	245564.00
	230 kV (2000-1200-800-400/1A) Outdoor CT with TC (5Core)	239925.00
	230 kV (2000-1600-1200-600/1A) Outdoor CT with TC (5Core)	226394.00
	Junction box	8000.00
	230 kV (2000-1200-800/1A)	235000.00
	Junction box	10000.00
	230 kV (1600-800/1A) Outdoor CT with TC (5Core)	226394.00
	Junction box	8000.00
	230 kV (1600-1200-600-300/1A) Outdoor CT with TC (5Core)	230000.00
	Junction Box	10000.00
	110 kV (2000-1200-800/1A) Outdoor CT with TC & junction box with support structure.	132964.00
	110 kV (1200-600-300/1A) Outdoor CT with TC 5 core	125833.33
	Junction box	7500.00
	110 kV outdoor, Live tank, CT of ratio 1200-600 / 1A, 5 core and with accessories without support structure	127400.00
	Junction box	7500.00
	110 kV (600-300-150/1A) 5 core outdoor CT	113333.33
	Junction box	7500.00
	33 kV (1200-600-300 /1A) Out door type CT with TC without support structure	20620.00
	33 kV outdoor type(600-300-150/1A) CT with TC without support structure	18140.00
	11 kV (1200-600/1A) Oil filled (out door) CT without support structure	16000.00
	11 kV (400-200/1A) Oil filled (Out Door) CT without support structure	13830.00

1	2	3
Sl. No.	Description	Cost Data 21-22 Rate in Rs.
	11 kV (400-200/1A) Oil filled (In Door) CT	15540.00
	110 kV, 300/200/150/100/1A Metering (0.2 s class accuracy)	83940.00
	110 kV 100/5A Metering (0.2 s class accuracy)	106955.00
5	CVT	
	765 kV single phase CVT with support structure and 1 no junction box	773314.00
	420 kV single phase CVT with support structure	222800.00
	230 kV single phase CVT with structure	177210.00
	110 kV single phase CVT with structure	165900.00
6	Potential Transformers	
	230 kV Outdoor PT with Terminal Connectors with support structure and Junction box	236260.00
	230 kV Outdoor PT with Terminal Connectors without support structure	190,000.00
	Junction box	8000.00
	110 kV Outdoor PT with T.C, with support structure	81500.00
	Junction box	7069.00
	110 kV Outdoor PT with T.C, without support structure	93000.00
	Junction box	9000.00
	33 kV Outdoor PTs with T.C without support structure	18600.00
	22 kV Outdoor PT with T.C without support structure	15510.00
	11 kV Outdoor PT with T.C without support structure	26515.00
7	LAS	
	624 kV Lightning arrester with support structure	555620.00
	400 kV Lightning arrester without support structure	106575.00
	230 kV Lightning arrester with support structure	51780.00
	230 kV Lightning arrester without support structure	36850.00
	110 kV Lightning arrester with support structure	41785.00
	110 kV Lightning arrester without support structure	22900.00
	33 kV Lightning arrester without support structure	2880.00
	22 kV Lightning arrester without support structure	2285.00
	11 kV Lightning arrester without support structure	1490.00
8	AB Switches	
	765kV 3150 A 50KA isolator with double earth with insulator with support structure	2498340.00
	765kV 3150 A 50KA isolator with single earth with insulator with support structure	2137835.00

1	2	3
Sl. No.	Description	Cost Data 21-22 Rate in Rs.
	765 kV, 3150Amps, 50 KA, Isolator (single phase) with double earth with Insulator with support structure.	1824860.00
	765 kV, 3150 Amps, 50 KA, Isolator (single phase) with single earth with Insulator with support structure.	1709545.00
	765 kV, 3150 Amps, 50 KA, Isolator (single phase) without earth with Insulator with support structure.	1571170.00
	420kV bus earth switch (single phase) with structure and insulator	326300.00
	420 KV, 3150 A, 63KA Isolator with double earth with Insulator with support structure.	840425.00
	420 KV, 3150 A, 63 KA Isolator with single earth with Insulator with support structure.	730930.00
	420 KV, 3150 Amps, 63KA, Isolator (single phase) with double earth with Insulator with support structure.	659495.00
	420 KV, 3150 Amps, 63KA, Isolator (single phase) with single earth with Insulator with support structure.	575315.00
	420kV, 3150 Amps, 63KA, Isolator (single phase) without earth with Insulator with support structure.	491140.00
	245 KV AB Switch WOE 2000A with Insulator with support structure	399365.00
	245 KV AB Switch WE 2000A with Insulator with support structure	441150.00
	230 KV AB Switch WOE 2000A without support structure	162000.00
	230 KV AB Switch WE 2000A without support structure	186020.00
	230kV bus earth switch (single phase) with structure and insulator	147050.00
	110 KV AB Switch WE 2000A with Insulator with support structure with motor operated	296680.00
	110 KV AB Switch WOE 2000A with Insulator with support structure with motor operated	262950.00
	110 KV AB Switch WE 2000A without support structure	124890.00
	110 KV AB Switch WOE 2000A without support structure	87188.00
	110 KV AB switch with earthing blades (1250A)	78900.00
	110 KV AB switch without earthing blades (1250A)	72075.00
	110kV bus earth switch (single phase) with structure and insulator	98893.00
	22/33kV Centre rotating AB Switch without support structure	21400.00
	11 KV AB switch (centre rotating) without support structure	28100.00
	Bottom Operated Mechanism for 110kV AB Switch with Earth	12800.00
	Motor Operated Mechanism for 110kV AB Switch	38250.00
	MOM box 220 V DC	38815.00

1	2	3
Sl. No.	Description	Cost Data 21-22 Rate in Rs.
9	Batteries	
	220V, 535 Ampere Hour (AH) battery complete set with stand, insulators and terminal connectors Electrolyte, Hydrometer Room Thermometer and Multimeter	1022973.00
	220V, 400 Ampere Hour (AH) battery complete set with stand, insulators and terminal connectors Electrolyte, Hydrometer Room Thermometer and Multimeter	1006015.00
	220V, 300 Ampere Hour battery complete set with wooden stand	756680.00
	110V, 300AH with stand	346500.00
	110V, 300AH without stand	337356.60
	110V, 120AH With stand	224400.00
	110V, 120AH Without stand	220980.00
	48 V 1250 AH Battery complete Set with stand, insulators and terminal connectors, electrolyte, hydrometer, room thermometer and multi meter	785530.00
	48V/600AH Battery with stand	198965.00
	48V/400AH Batteries (SAN Container)	171696.00
	48V/250AH Batteries (SAN Container)	130830.00
	48V/200 AH batteries	71330.00
	48V/120 AH batteries (SAN Container)	95961.60
10	Battery Chargers	
	220V, 100 Amps Battery charger with potential free contacts for all indications for SAS interface.	358315.00
	220V, 80 Amps Battery charger with potential free contacts for all indications for SAS interface.	323175.00
	220V, 60 Amps Battery charger with potential free contacts for all indications for SAS interface.	127500.00
	220V, 60 Amps Automatic Thyristor controlled Battery Charger	356410.00
	110 V, 60 Amps Battery charger with potential free contacts for all indications for SAS interface (without SAS).	105000.00
	110V, 24 Amps Battery charger with potential free contacts for all indications for SAS interface (without SAS).	43555.00
	110 V, 60 Amps Battery charger	100000.00
	110 V, 60 Amps Automatic Thyristor controlled Battery Charger	259830.00
	110 V, 24 Amps Battery charger	36000.00
	48 V, 120 Amps Battery charger with potential free contacts for all indications for SAS interface.	246500.00
	Thyristor version battery chargers (for communication applications)	

1	2	3
Sl. No.	Description	Cost Data 21-22 Rate in Rs.
	48 V, 80 Amps chargers	104,500.00
	48 V, 40 Amps chargers	50310.00
	48 V, 20 Amps chargers	37800.00
11	Cables - Control Cables per Km Armoured (Copper, Multi stranded)	
	2 x 2.5 Sq.mm	52000.00
	4 x 2.5 Sq.mm	77000.00
	8 x 2.5 Sq.mm	149000.00
	14 x 2.5 Sq.mm	235000.00
	20 X 2.5 sq.mm	339000.00
	28 X 2.5 sq.mm	456910.00
	14 X 4 sq.mm	512720.00
	8 X 4 sq.mm	270170.00
	4 X 4 sq.mm	123350.00
	2 x 35 Sq.mm	480862.00
	2 X 16 sq.mm	298595.00
12	Aluminium cable Armoured (per/kM.)	
	4 X 120 sq.mm	389798.00
	4 X 25 sq.mm	117135.00
	2 x 16 sq.mm	61216.00
13	Extra High Tension Cable and accessories	
	400 KV 1x2500 Sq.mm XLPE copper cable (Km)	34593646.00
	230 KV 1x1200 Sq.mm Aluminium XLPE cable (Km)	6688148.25
	110 KV 1x1000 Sq.mm Aluminium XLPE cable (Km)	6560795.00
	110 KV 1x630 Sq.mm Aluminium XLPE cable (Km)	5112947.00
	110 KV 400 Sq. mm Copper XLPE cable (Km)	5240010.00
	110 KV 1x240 Sq.mm Copper XLPE cable (Km)	5000610.00
	400 KV normal straight joint for 400 KV 1CX2500 Sq.mm XLPE copper cable (Km)	2106000.00
	400 KV Insulated straight joint for 400 KV 1CX2500 Sq.mm XLPE copper cable (Km)	2106000.00
	400 KV outdoor cable termination for 400 KV 1CX2500 Sq.mm XLPE copper cable (Km)	3149030.00
	400 KV indoor GIS termination for 400 KV 1CX2500 Sq.mm XLPE copper cable (Km)	2121663.00
	230 KV straight through joint for 230 KV 1CX1200 Sq.mm XLPE Alu cable	336010.50
	230 KV insulated joint for 230 KV 1CX1200 Sq.mm XLPE Alu cable	380814.00
	230 KV indoor termination kit for 230 KV 1CX1200 Sq.mm XLPE Alu cable	604954.00

1	2	3
Sl. No.	Description	Cost Data 21-22 Rate in Rs.
	230 kV outdoor termination kit for 230 kV 1CX1200 Sq.mm XLPE Alu cable	725786.25
	230 kV outdoor termination structure	34067.25
	11KV, 3 X 300 sq mm outdoor termination kit suitable for XLPE cable (HS type)	2900.00
	33KV, 1 X 630 sq mm outdoor termination kit suitable for XLPE cable (HS type)	5885.00
	400 kV 3 ph link box with CCPU	157000.00
	400 kV 3 ph link box without CCPU	157000.00
	400 kV 1 ph link box with CCPU	37000.00
	400 kV 1 ph link box without CCPU	23000.00
	230 kV 1 phase link box with CCPU	35060.00
	230 kV 3 phase link box with CCPU	45396.75
	230 kV 3 phase link box without CCPU	33222.00
	230 kV 1 phase link box without CCPU	21215.00
	11 KV, 500 sq.mm sheath bounding cable	3645567.00
	6.35/11 kV, 400 sq.mm sheath bounding cable	2398251.00
	6.35/11 kV, 240 sq.mm sheath bounding cable	1504235.25
	110 kV straight through joint for 630 sq.mm	160562.00
	110 kV insulated joint for 630 sq.mm	163825.00
	110 kV outdoor termination kit	224665.00
	110 kV outdoor termination kit for 1x630 sq.mm Al.cable	194502.00
	110 kV indoor termination kit	194502.00
	110 kV outdoor termination structure	23194.50
	110 kV 3 ph link box with CCPU	45669.75
	110 kV 3 ph link box without CCPU	31895.00
	110 kV 1 ph link box without CCPU	21215.00
	110 kV 1 ph link box with CCPU	31164.00
	240 sq.mm co-axial cable	2858530.00
14	Fire Fighting Equipments	
	Fire extinguisher foam type trolley mounted 60 Ltr capacity with accessories.	8710.00
	Fire extinguisher foam type trolley mounted 50 Ltr capacity with accessories.	6425.00
	Fire extinguisher foam type trolley mounted 10 Ltr capacity with accessories	4660.00
	Fire extinguisher foam type trolley mounted 9 Ltr capacity with accessories	4150.00
	Fire extinguisher DCP type trolley mounted 25 KG capacity with accessories.	8200.00
	Fire extinguisher DCP type Portable 10 KG capacity	3280.00
	Fire extinguisher DCP type portable 9 Kg capacity.	2800.00
	Fire extinguisher DCP type portable 6 Kg capacity.	1800.00

1	2	3
Sl. No.	Description	Cost Data 21-22 Rate in Rs.
15	DG Set	
	100 kVA DG Set complete set with all accessories including AMF panel	608030.00
	125 kVA DG Set complete	847120.00
	250 kVA DG set complete set	1286670.00
16	GIS Equipments (Breakers, Bus PT, Earth Switch)	
	Full Diameter: 800 kV GIS SF6 indoor Transformer bay provision with double bus, one and half breaker along with all equipments and online PD Monitoring.(ICT Bays 3nos and spare feeder bay 1no) (3150 A, 50 KA, SF6 transformer bay modules with CSD-2)- 1 set	285896635.00
	800 kV GIS SF6 indoor feeder bay provision with double bus, one and half breaker along with all equipments and online PD Monitoring.(3150 A, 50 KA, SF6 feeder line bay module-1 set) (3150 A, 50 KA, SF6 feeder line bay module with PIR-1)	250471450.00
	500 kV SF6 GIS Indoor Transformer bay provision with double bus, One & half breaker along with all the equipments and online PD monitoring with CSD	125650135.00
	500 kV SF6 GIS indoor feeder bay provision with double bus, one and half breaker along with all equipments inclusive of three numbers of single phase VTs with disconnector switch and online PD Monitoring with test bushing arrangement (2 F)	130873280.00
	500 kV SF6 GIS Indoor Reactor bay provision with double bus, One & half breaker along with all the equipments and online PD monitoring with CSD for Reactor bay and Tie breaker. 3Nos single phase line VT for spare feeder bay. (1 Reactor and 1 Spare Feeder)	130964100.00
	765kV, VTs with dis-connector Assembly in separate chamber for bus section -Single phase.	16027820.00
	420kV, SF6 GIS Indoor Feeder bay with double bus, one and half breaker along with all equipments, with on line PD Monitoring system.	61452195.00
	420kV, SF6 GIS transformer bay with double bus, one and half breaker along with all equipments	127115220.00
	420kV, SF6 GIS Indoor bay Provision with single bus with all the equipments for bus section	24425845.00
	420kV, SF6 GIS auxiliary bus arrangement with Disconnector, one number single phase PT and earth switch for the single phase spare ICT.	10976710.00
	230 kV isolated phase GIS feeder bays having double bus arrangement containing Surge arresters, High speed earth switch, 3 phase PT, CT's, Disconnectors, Maintenance Earth switches,Circuit breaker,Busbar disconnectors, LCC, Fixed part for the cable connection, rupture disc and Density monitor in each compartment per phase with buffer compartment and provision for off-line PD measurement.	15833980.00

1	2	3
Sl. No.	Description	Cost Data 21-22 Rate in Rs.
	230kV, SF6 GIS Indoor Transformer bay double bus arrangement with all equipments	13146610.00
	230kV, SF6 GIS Indoor Feeder bay with double bus, with two nos. disconnectors along with all equipments	20294820.00
	230kV, SF6 GIS Indoor Bus coupler bay with disconnectors	13146610.00
	110kV, SF6 GIS Indoor Feeder bay with all equipments	6503085.00
	110kV, SF6 GIS Indoor Transformer bay with all equipments	5939890.00
	110kV, SF6 GIS bus coupler bay with all accessories	4695440.00
	400kV voltage transformer (single phase) with Disconnector assembly in separate chamber.	1573725.00
	400kV voltage transformer (single phase) with Disconnector assembly in separate chamber with earth switch.	1764610.00
	230 kV Bus PT	5271355.00
	110 KV Bus PT	689755.00
	420 KV Earth Switch for bus	4762100.00
	230 KV Earth Switch for bus	798965.00
	110 KV Earth Switch for bus	369135.00
	33 KV VCB Indoor	629545.00
	33 KV VCB Indoor for feeder	581895.00
	33 KV VCB Indoor (Bus coupler)	732040.00
	11 KV VCB Indoor	375000.00
	11 KV VCB Indoor for feeder	323060.00
	11 KV VCB Indoor (Bus coupler)	335800.00
17	Capacitor Bank with Associated Equipments	
a.	110 kV / 24 MVAR	12017790.00
b.	22 kV / 2.4 MVAR	
	22kV capacitor bank	1578970.00
	Erection of 22kV capacitor bank	264030.00
c.	11 kV / 2.4 MVAR	
	11 kV capacitor bank	1586130.00
	Erection of 11 kV capacitor bank	253700.00
	11kV / 2 MVAR auto switched shunt capacitor bank	2963010.00

1	2	3
Sl. No.	Description	Cost Data 21-22 Rate in Rs.
18	Panels	
a.	AC Panels (Each)	
	400 kV SS	287040.00
	230 KV SS (Under Voltage , Over Voltage Static relays included)	139900.00
	110 KV SS (Under Voltage, Over Voltage Static relays included)	97212.00
	33 kV SS	64470.00
	AC Distribution for Kiosk	12810.00
b.	DC Panels (each)	
	220V DC Distribution Panel for 400 KV SS	159465.00
	220V DC Distribution Panel for 230 KV OR 110kV SS (DC Under Voltage, Over voltage Static relays included)	82356.00
	110V DC Distribution Panel for 110kV OR 230KV SS	71195.00
	110V DC indoor Control & Relay Panel for GC Breaker (Static Relay Version)	38010.00
	110V DC indoor Control & Relay Panel for GC Breaker (Numeric Relay Version)	106000.00
	110V DC indoor Control & Relay Panel for LV Breaker (Static relay version)	73535.00
	110V DC indoor Control & Relay Panel for LV Breaker (Numeric relay version)	204000.00
	110V DC indoor Control & Relay Panel for Twin feeder (Static relay version)	57330.00
	110V DC indoor Control & Relay Panel for Twin feeder (Numeric relay version)	203739.00
	110V DC outdoor Control & Relay Panel	39695.00
	110V DC annunciator Type A including Static Relays	83603.00
	110V DC annunciator Type B including Static Relays	79691.00
	48 V DC Distribution panel	120445.00
19	Bay Marshalling Box	
	AC Junction Box (FRP)	28030.00
	DC Interlock Box (FRP)	28030.00
20	Control & Relay (C&R) Panel (With SAS)	
	765 kV Relay panel for Transformer/ Reactor	1700125.00
	765 kV Relay panel for Feeder	1756125.00
	765 KV Bus bar protection panel	2889395.00
	765 kV Relay panel for Tie Breaker	396695.00
	Islanding panel for 765 kV Feeder Transformer/Reactor	1586780.00
	Control & protection Panel for 765kV Line /Feeder	1388670.00
	Control & protection Panel for 765kV /400 kV ICT	1047960.00

1	2	3
Sl. No.	Description	Cost Data 21-22 Rate in Rs.
	Control & protection Panel for 765kV Bus reactor	2216705.00
	Control & protection Panel for 765kV Line reactor	2216705.00
	Control & protection Panel for 400kV Line / Feeder	1296420.00
	Control & protection Panel for 400kV Tie breaker bay	481000.00
	Control & protection panel for 400 kV Line for remote end station	3858920.00
	Control & protection panel for 400 kV Tie breaker for lines / Transformer	1576000.00
	Control & protection panel for 400/230 kV ICT	1326000.00
	Control & protection panel for 400/110 kV ICT	1256000.00
	Control & protection panel for 230 kV Feeder	633000.00
	Control & protection panel for 230/110 kV Auto Transformer	1051000.00
	Control & protection panel for 230 kV Bus coupler	391000.00
	Control & protection panel for 110kV Feeder	434000.00
	Control & protection panel for 110 kV Bus coupler panel	351000.00
	Control & protection panel for 110kV Transfer Bus Coupler	351000.00
	Relay Panel for 400 kV Feeder / Line	885430.00
	Relay panel for 400/230 kV ICT	762075.00
	Relay panel for 400/110 kV ICT	762075.00
	Relay panel for 400 kV Tie breaker for lines / Transformer	316245.00
	Relay panel for 400 kV Bus bar protection	1576000.00
	Relay panel for 400 kV Bus reactor	838780.00
	Relay panel for 400 kV Line reactor with NGR protection	838780.00
	Relay panel for 230 kV Feeder	763660.00
	Relay panel for 230 kV Feeder with UF Protection	772550.00
	Relay panel for 230/110 kV Auto Transformer	617880.00
	Relay panel for 230 kV Bus coupler	227440.00
	Relay panel for 230 kV Bus bar protection (23 bays)	1128500.00
	Relay panel for 230 kV Bus bar protection (12 bays)	1018500.00
	230 KV Announcer Panel (200 Windows)	201000.00
	Relay panel for 110kV Feeder	371460.00
	Relay panel for 110kV Feeder with UF protection	378925.00
	Control & protection panel for 110 kV Bus bar protection Relay Panel (up to 23 bays)	1128500.00
	110 kV Bus coupler panel	221040.00
	Relay panel for 110kV Transfer Bus Coupler	322445.00
	110 kV Bus bar protection Relay Panel	1258585.00
	Synchronising cum Islanding Panel for 765kV Bays	1030000.00

1	2	3
Sl. No.	Description	Cost Data 21-22 Rate in Rs.
	Synchronising cum Islanding Panel for 400kV Bays	307750.00
	Synchronizing cum islanding panel for 230 KV bays (SAS)	307750.00
	Synchronizing cum islanding panel for 110 KV bays (SAS)	307750.00
	110 KV Capacitor bank C&R panels	604000.00
21	Control & Relay (C&R) Panel (Without SAS)	
	400 KV Feeder Control Panel	139070.00
	400 KV Feeder Relay Panel	642775.00
	400/230 KV Auto Transformer Control Panel	226605.00
	400/230 KV Auto Transformer Relay Panel	910850.00
	400/110 KV Auto Transformer Control Panel	226605.00
	400/110 KV Auto Tr. Relay Panel	903610.00
	400 KV Tie breaker control panel for lines / transformer	238555.00
	400 KV Bus Bar Protection Panel	1589950.00
	230 KV Feeder control and relay panel	663300.00
	230 KV Feeder Control panel	158790.00
	230 KV Feeder Relay panel (With U/F protection)	654025.00
	230 KV Feeder Relay panel (Without U/F protection)	537375.00
	230 KV Feeder C & R Panel with BCU	876000.00
	230 KV Auto Tr. C & R Panel with BCU	1276000.00
	230/110 KV Auto Tr. Control and Relay Panel	841500.00
	230/110 KV Auto Tr. Control Panel	216985.00
	230/110 KV Auto Tr. Relay Panel	498945.00
	230 KV Bus bar protection panels (Equipped upto 12 circuits)	1112555.00
	230 KV Bus Coupler C&R panel with BCU	426000.00
	230kV Bus coupler Panel	178465.00
	110 KV Single feeder Control & relay panel	493390.00
	110 KV Single Feeder Control Panel	141110.00
	110 KV Double Feeder Control Panel	192620.00
	110 KV Feeder Relay panel (without UF protection)	369500.00
	110 KV Feeder Relay panel (with UF protection)	374430.00
	110 KV Bus Bar Protection Panels (Equipped upto 18 circuits)	1112555.00
	110 KV Bus Coupler Panel with BCU	346500.00
	110 KV Capacitor bank C&R panels	451000.00
	Synchronizing panel	188000.00
22	Carrier Communication (CC) Equipments	
a.	400 KV Outdoor	
	Coupling Device	55470.00

1	2	3
Sl. No.	Description	Cost Data 21-22 Rate in Rs.
	Wave Trap (1.0mH/2000 A)	340190.00
	Solid core supporting Insulator	146820.00
	Galvanized steel structure	89910.00
b.	230 kV Outdoor	
	Coupling Device	64350.00
	Wave Trap (0.5mH/1250 A)	117050.00
	Co-Axial cable	78065.00
c.	110 kV Outdoor	
	Coupling Device	71940.00
	Wave Trap (0.5mH/630 A)	190095.00
d.	Others	
	Bay control unit (BCU)	233580.00
	Sub station Automation System for 765/400 kV SS for 23 bays (11nos 765kV Bays, 12nos 400kV Bays)	11828755.00
	Sub-station Automation System for 400kV/230kV/ 110kV SS (Up to 33 Electrical bays)	5626000.00
	Numerical Distance Protection Relay	100580.00
	Numerical Directional O/C, E/F Relay	78300.00
	Numerical U/F Relay	108775.00
	SIEMENS make Numerical Transformer Differential Relay Model; 7SR242	90000.00
New	GE make Alstom brand Numeric Feeder Protection Relay. Type : P14NB, CTR : 1/5A, Aux. Volt 24-250V AC/DC with RS485 communication rear port for MODBUS protocol and front USB port DI-8, DO-8 with 10 fault records.	49000.00
	OPGW - 48 Fibre with accessories per KM	179724.00
	Erection of OPGW - 48 Fibre with accessories per KM	100104.00
	OPGW - 24 Fibre DWSM cable, accessories per KM supply, erection, testing and commissioning	253255.00
	ADSS - 24 Fibre OPTIC Cable, with Accessories	164045.00
	OLTE with ADM configuration and STM -4 in four directions	1574510.00
	OLTE with ADM configuration and STM-4 in two direction and STM-1 in two direction	1549345.00
	OLTE with ADM configuration and STM-4 in two directions & STM - 1 in four directions	1607860.00
	OLTE with ADM configuration and STM-1 in both directions	423755.00
	OLTE STM-1 Terminal configuration	359385.00
	Optical Amplifiers 10 dB output	134510.00
	Optical Amplifiers 15 dB output	241570.00
	Optical Amplifiers 20 dB output	325260.00

1	2	3
Sl. No.	Description	Cost Data 21-22 Rate in Rs.
	Bit Error Rate Meter of reputed make	118450.00
	Optical Power Meter for 1300 nm and 1550 nm, handheld: OLP-6 or similar	11124.00
	Optical Source	241525.00
	Optical Time Domain reflectometer ODR (+5 to -45dB range sensitivity)	149350.00
	Master clock for the synchronization of MPLS equipment: Type M3000 or similar	267903.00
	Digital Communication Analyzer: PFA-35 or similar for signal analysis on 64kbit/s/2Mbit/s level	118450.00
	Optical Splicing Kit	640625.00
	Optical Splicing Machine and optical time domain reflectometer	908365.00
	40W PLCC Carrier set with 4 command PC	242500.00
	Multi Core cable 0.6mm 1 pair/km	82725.00
	Multi Core cable 0.6mm 4 pair/km	23450.00
	OLTC Transducers	2925.00
	Multi function Transducers	7600.00
	Selective Level Meter and Level Oscillator	950000.00
	Protection Coupler(Analog) 8 command	118355.00
	Protection Coupler(Analog) 4 command	121795.00
	8 command stand alone Digital Tele Protection Coupler	282998.84
	Visual Monitoring System (VMS) for switchyard and premises for 400kV SS	4077431.00
	RTU for TANTRANSCO Substation	10000000.00
	Fibre Optic test Equipment (FOTE) hybrid equipment (Synchronous Digital Hierarchy-MPLS-TP) with six directions	1308679.02
	Fibre Optic test Equipment (FOTE) hybrid equipment (Synchronous Digital Hierarchy-MPLS-TP) with four directions	1186951.80
	Fibre Optic test Equipment (FOTE) hybrid equipment (Synchronous Digital Hierarchy-MPLS-TP) with eight directions	2383592.16
	Integrated 12 port 100 Mbps/1G base Optical/ Electrical Open shortest Path First protocol (OSPF) Routing Interface card with minimum 256 nos. Virtual LAN (VLAN) router instance/port. The routing capacity shall be 20 Gbits/s.	78361.68
	4 ch. Diff. Protocols interface card-(C37.94 compatible)	169679.35
	Hybrid Communication exchange (VOIP+Analog+Digital)	694220.00
	SIP Gateway card for VOIP (500 Subs)	104959.81

1	2	3
Sl. No.	Description	Cost Data 21-22 Rate in Rs.
	Utility grade MSA 2000 compliant Synchronous Transport Module (STM) 16 SFPs suitable for all vendor SDH ports	
	(a) To drive upto 30 km optical distance	9697.79
	(b) To drive upto 80 km optical distance	9697.79
	(c) To drive upto 120 km optical distance	19492.07
	(d) To drive upto 160 km optical distance	279836.58
	Utility grade MSA 2000 compliant Synchronous Transport Module (STM) 4 SFPs suitable for all vendor SDH ports	
	(a) To drive upto 30 km optical distance	3811.57
	(b) To drive upto 80 km optical distance	3811.57
	(c) To drive upto 120 km optical distance	12544.40
	(d) To drive upto 160 km optical distance	250887.97
	Utility grade Multi Source Agreements (MSA) 2000 compliant 10 Gbe ethernet Small Form factor Pluggable (SFP) + suitable for all vendor ethernet optical ports for MPLS-TP traffic	
	(a) To drive upto 40 km optical distance	14860.29
	(b) To drive upto 80 km optical distance	33387.40
	(c) To drive upto 120 km optical distance	507565.66
	(d) To drive upto 160 km optical distance	977498.13
	Utility grade Multi Source Agreements (MSA) 2000 compliant 1 Gbe ethernet Small Form factor Pluggable (SFP) + suitable for all vendor ethernet optical ports for MPLS-TP traffic	
	(a) To drive upto 40 km optical distance	2508.88
	(b) To drive upto 80 km optical distance	5210.75
	(c) To drive upto 120 km optical distance	13991.83
	Network Management System (NMS) main server, client server peripherals & other accessories with necessary soft copy of software & furniture	5256254.55
	Network Management System (NMS) client server, peripherals & other accessories with necessary soft copy of software & furniture	212226.15
	Fibre Optic test Equipment (FOTE) equipment with Multi Protocol Label Switching (MPLS) - Transport Path (TP) technology with redundant supply cards	172124.78

1	2	3
Sl. No.	Description	Cost Data 21-22 Rate in Rs.
	Smart SFP to drive upto 100 km optical distance (To interface MPLS-TP port with SDH port)	214921.91
	4 port VOIP gateway with 4 FXO & 4 FXS channels/ ports	8584.02
	Ethernet test equipment: CMA-3000 or similar	339900.00
23	Other SS Materials	
a.	Aluminium Bus Bar	
	4.5" Aluminium Bus Bar	311500.00
	4.0" / 100 mm Aluminium Bus Bar	311500.00
	3.0" / 75 mm	311500.00
	2.0" / 50 mm	311500.00
b.	Conductor	
	AAC Bull conductor (765kV Side)	538430.00
	Bersimis conductor (400kV side)	438185.00
	Zebra ACSR 54/3.18mm+7/3.18mm (per/Km)	263852.65
	Panther ACSR	128430.00
	Moose ACSR	309475.00
c.	Insulators	
	765 KV Solid core Insulator with corona ring	126845.00
	400 KV Solid core insulator with structure (each)	62300.00
	400 KV Solid core insulator (each)	42605.00
	245 KV Solid core insulator with structure (each)	33447.00
	230 KV Solid core insulator (each)	13900.00
	145 KV Solid core insulator with structure (each)	21030.00
	110 KV Solid core insulator (each)	6450.00
	400 KV, 120 KN polymer Insulators (each)	5305.00
	400 KV, 160 KN polymer Insulators (each)	5525.00
	230 KV, 120 KN polymer Insulators (each)	2838.14
	230 KV, 90 KN polymer Insulators (each)	2785.00
	110 KV, 120 KN polymer Insulators (each)	1677.97
	110 KV, 90 KN polymer Insulators (each)	1502.54
	11 KV 120 KN ordinary disc insulators (each)	481.00
	11 KV, 120 KN Antifog Disc Insulators (each)	694.00
	11 KV, 90 KN Ordinary Disc Insulators (each)	392.00
	11 KV, 90 KN Antifog Disc Insulators (each)	605.00
	11 KV 210 KN Anti fog Disc insulator	1218.00
	11 KV 160 KN Anti fog Disc insulator	810.00
	11 KV, 160 KN Ordinary Disc Insulators (each)	662.00
	11 KV PT insulator	244.07
	22 KV PT insulator	327.96

1	2	3
Sl. No.	Description	Cost Data 21-22 Rate in Rs.
d.	Earth Wire	
	HTGS Earth wire 7/3.55 mm (per KM)	37034.15
	HTGS Earth wire 7/3.66 mm (per KM)	67675.00
e.	Towers	
	MS Tower (per MT)	63499.00
	HTS Tower (per MT)	65999.00
f.	Paints	
	Aluminum paint (per/lit.)	103.00
g.	Gasket	
	Gasket 900×900×16 mm	2772.00
	Gasket 900×900×12 mm	2078.00
	Gasket 900×900×10 mm	1935.00
	Gasket 900×900×8 mm	1550.00
	Gasket 900×900×6 mm	1160.00
	Gasket 900×900×3 mm	516.00
	Gasket 900x600x3mm	325.00
	Gasket 900x600x6mm	650.00
	Gasket 900x600x8mm	868.00
h.	Others	
	Transformer Oil with 210 Litres Barrel per kL	60198.00
	Silica gel per kg	164.00
	Rubber mat of size 2000×1000×10 mm	1619.00
	150 Watts LED lights with accessories and fitting	2845.00
	72 Watts LED lamp with fitting	1384.00
	GI Ladder type Cable tray 2.5 m L, 0.6 m W thickness 2mm with coupling plate and bolt nuts	1538.00
	GI Ladder type Cable tray 2.5 m L, 0.45 m W thickness 2mm with coupling plate and bolt nuts	1281.00
	GI Ladder type Cable tray 2.5 m L, 0.3 m W thickness 2 mm with coupling plate and bolt nuts	1281.00
i.	Connectors	
	Free end Clamp for 4.5" Bus Bar	1679.00
	Free end clamp for 4" / 100 mm Bus bar	1679.00
	Free end clamp for 75 mm Al. Bus bar	223.00
	Free end clamp for 50 mm Al. Bus bar	118.00
	T Clamp for Twin Bull AAC to Twin Bull AAC	5253.00
	T Clamp for Twin Bersimis to twin Bersimis	3203.00

1	2	3
Sl. No.	Description	Cost Data 21-22 Rate in Rs.
	T Clamp for Quad Bersimis to Quad Bersimis	6663.00
	T Clamp for 4.5" Bus To Quad/Twin Bull AAC	3844.00
	T Clamp for 4.5" Bus To Quad/Twin Bersimis	4484.00
	T Clamp for 3" / 75mm Bus bar To Zebra	630.00
	T Clamp for 3" / 75 mm Bus bar To Double Zebra	1260.00
	T Clamp for 50mm Bus bar to Zebra	801.00
	T Clamp for Twin Zebra to Twin Zebra	997.00
	T - Clamp for Quad moose to 4" Alu. Bus	4737.00
	T - Clamp for double moose to 4" Alu. Bus	4211.00
	T - Clamp for Quad moose to 3" Alu. Bus	4211.00
	T - Clamp for Double moose to 3" Alu. bus with 225 mm centre	3686.00
	T - Clamp for single moose to 3" Alu. Bus	3161.00
	T Clamp for Twin Zebra to Single Zebra	1491.00
	T Clamp for Zebra to Zebra	425.00
	T clamp for Panther to Zebra	605.00
	T clamp for Panther to Panther (each)	537.00
	T clamp for single moose to single moose for 230 KV	761.00
	T clamp for single moose to single moose for 110 KV	668.00
	T clamp double moose to double moose with 225 mm centre	1984.00
	Switch end clamp for double moose extension type	1010.00
	Switch End clamp for single zebra	290.00
	Switch End clamp for dog per unit	318.00
	Switch end clamp for Mink ACSR (each)	274.00
	Switch end clamp for double Zebra	525.00
	Switch end clamp for 4" / 100 mm Bus Bar	641.00
	Switch end clamp for 3" / 75 mm Bus Bar	445.00
	Switch end clamp for 2" / 50 mm Bus Bar	355.00
	Switch end clamp for Panther	320.00
	Switch end clamp for Kundah	367.00
	PG Clamp for Zebra	273.00
	PG Clamp for moose	525.00
	PG Clamp for kunda	394.00
	PG Clamp for Panther	356.00
	Reducer Clamp for 50 mm bus to Zebra (each)	761.00
	Reducer Clamp for 75 mm bus to Zebra (each)	640.00
	765 KV Spacer Clamp for Quad AAC Bull 450 mm Spacing	2806.00

1	2	3
Sl. No.	Description	Cost Data 21-22 Rate in Rs.
	400 kV Spacer Clamp for Quad Bersimis 450 mm Spacing	2166.00
	Spacer Clamp for Zebra (each) 225mm spacing	258.00
	Spacer for 225 mm double moose conductor	1103.00
	Corona Bell for 4.0 " / 100 mm Bus Bar	1118.00
	Corona Bell for 3.0"/ 75 mm Bus Bar	116.00
	Corona Bell for 2.0" / 50 mm Bus Bar	80.00
	Aluminium C -Type wedge connector -Zebra to Zebra	2209.00
	Aluminium C -Type wedge connector -Panther to Panther	1130.00
	C' type fired bolters wedge connector with 1400 Amps paddle suitable for zebra to zebra conductor	4021.00
	C' type hammered wedge connector (without paddle) suitable for zebra conductor	1600.00
	Hammer driven 'C' type wedge connector suitable for Panther to Panther conductor	1115.00
	C' type hammered driven wedge connector (without paddle) suitable for kundha conductor	1730.00
	Hammer driven 'C' type wedge connector suitable for Moose conductor	2400.00
	Kundha boltess wedge connectors	2021.00
	Moose fired boltless wedge connector	4733.00
	Joint Clamp for 75mm Bus Bar	728.00
	Joint Clamp for 100 mm Alu.Bus Bar welding sleeves	641.00
	Reducer clamp for twin moose to 3" bus	1202.00
	Seating block for 50 mm bus bar	331.00
	Seating block for 75 mm bus bar	436.00
	SIS clamp for Twin Moose	19271.00
	SI Pilot with CW for Twin Moose	40988.00
	Double Tension fittings for Twin Moose	22332.00
	Twin I S clamp for Quad Moose	16788.00
	SI Pilot with CW for Quad Moose	28984.00
	Quad T fittings for Quad Moose	54248.79
	Single Tension Fittings for Quad Moose	23202.00
	Suspension clamp for EW 7/3.55mm	486.00
	Tension clamp for EW 7/3.55mm	480.00
	Suspension clamp for EW 7/3.66mm	719.00
	Tension clamp for EW 7/3.66mm	726.00

1	2	3
Sl. No.	Description	Cost Data 21-22 Rate in Rs.
j. Tension Fitting		
	Double tension Fittings for Panther	4264.00
	Double tension Fittings for Zebra	4919.00
	SS Fittings for Zebra (free centre type w/o P.A.Rod)	2140.00
	Single suspension fitting for Zebra	2100.00
	Single Tension Fittings for Panther	1875.00
	Single Tension Fittings for Zebra	2390.00
	Single tension fitting for Kundah	2100.00
	Single tension fitting for Moose	3150.00
	Single suspension fitting for Moose	2075.00
	Single suspension fitting for panther	1245.00
	Single suspension fitting for kunda	2000.00
	Single tension fitting for 7/3.55 mm steel earth wire	471.00
	Bolted type suspension fitting for 230 kV Quad moose	3675.00
	Bolted type suspension fitting for 230 kV Twin moose	2527.00
	Bolted type suspension fitting for 110 kV Quad moose	3497.00
	Bolted type suspension fitting for 110 kV Twin moose	2286.00
	Tension fittings for single disc set with single moose conductor for 230 kV (6 Bolted Gripper set)	1653.00
	Tension fittings for Twin disc set with twin moose conductor for 230 kV (6 Bolted Gripper set)	6175.00
	6 bolt Tension fitting for Zebra (each)	1395.00
	4 bolt Tension fitting for Zebra (each)	1273.00
	6 Bolted tension fitting for zebra conductor space 225 mm with single anchoring point	3552.00
	Seating clamp for 3" bus bar support on solid core insulators	545.00
	Electrical connection with bus bar support in switch end with double zebra conductor	2950.00
	Under hang insulator seating clamp for double zebra with conductor space 225m	648.00
	Electrical connection with double zebra conductor at 75mm bus bar joint	3425.00
k. Pole		
	4.7 mtr long Tubular yard light pole (each)	2304.00
	5.5 mtr long stepped tubular pole for yard light (each)	3274.00
	6 mtr long tubular yard light pole (each)	3690.00
	8.0 mtr long stepped tubular pole for yard light (each)	4458.00

1	2	3
Sl. No.	Description	Cost Data 21-22 Rate in Rs.
I.	Instruments	
	Oil breakdown voltage test kits (BDV Kit)	132424.00
m.	Rates of Transmission Line Materials	
	Bay marshelling kiosk	25423.00
	Pipe type earthing	2176.94
	Counter-poise earthing	8166.00
	Flexible Copper bond	935.00
	Aluminium Earth Bond	194.00
	Vibration Damper for Panther	725.00
	Vibration damper for Zebra	1075.00
	Vibration damper for Moose	1318.00
	Bundle Spacer for Twin Moose	1484.00
	Spacer damper for Quad Moose	2019.00
	Rigid spacer for Twin Moose	892.00
	Rigid spacer for Quad Moose	2219.00
	Midspan comp joint for Moose	1000.00
	Repair sleeve for Moose	423.00
	Midspan comp joint for Panther	485.00
	Midspan comp joint for Zebra	700.00
	Midspan joint for Kunda	780.00
	Mid span comp Joint for EW 7/3.55mm	200.00
	Midspan comp joint for EW 7/3.66mm	353.00
	Vibration damper for EW 7/3.66mm	635.33
	PA Rod for Panther	730.00
	PA Rod for Zebra	1400.00
	PA Rod for Kundah	1375.00
	PA Rod for Moose	2100.00
	Repair sleeve for Panther	365.00
	Repair sleeve for Zebra	445.00
	Repair sleeve for kundah	470.00
	HD GI Eye bolt 16 mm dia with 3 nuts (each)	149.00
	HD GI Hanger Rod 20 mm (each)	256.00
	HD GI 'D' shackle (each)	127.00
	24" Eye bolt with 2 nuts per unit	149.00
	18" Eye bolt with 2 nuts per unit	131.00

1	2	3
Sl. No.	Description	Cost Data 21-22 Rate in Rs.
	Anti climbing Device	10791.00
	Number plate	270.00
	Phase Plate	303.03
	Circuit plate	303.03
	Name Board	379.00
	Danger Board	362.00
24	Earthing and Painting	
	765 kV SS AIS	
	400 kV SS AIS	20555085.00
	230 KV SS AIS	7474575.00
	110 KV SS AIS	840890.00
25	Outdoor Illumination	
	Illumination of Switch Yard Light Mast Tower and Tubular pole as per specification and design including all materials and consumables using LED technology for arriving lux 30 for 400 kV SS AIS	1868645.00
	Illumination of Switch Yard Light Mast Tower and Tubular pole as per specification and design including all materials and consumables using LED technology for arriving lux 30 for 230 KV SS AIS	840890.00
	Illumination of Switch Yard Light Mast Tower and Tubular pole as per specification and design including all materials and consumables using LED technology for arriving lux 30 for 110 KV SS AIS	373725.00
26	Supply & Erection	
	Substation Structures	
	400 KV SS	48754204.00
	230 KV side	23009045.00
	110 KV side	6532532.00
	66 KV side	1124752.00
	33kV side	1073823.00
	22 KV side	587497.10
	11 KV side	295073.10
27	Substation	
a.	Control Room (only Building)	
	400 KV SS AIS	44714400.00
	230 KV SS GIS	35463700.00
	230 KV SS AIS	32625996.00
	110 KV SS GIS	35463700.00
	110 KV SS AIS	6915142.00

1	2	3
Sl. No.	Description	Cost Data 21-22 Rate in Rs.
b. Quarters		
2P Type		2574600.00
2Q Type		3021439.00
2R Type		3283900.00
2S Type		4117348.00

B.ESTIMATES FOR ESTABLISHMENT OF SUB STATION

NOTE

Illustrations/Working sheets given in the Cost Data are only guidelines to prepare estimate in the field.

The model estimates shown are only indicative.
However depending upon the site conditions & field requirements estimates shall be modified with justification. **The percentage rates for Storage, EPF, ESI, LWF and GST etc., may be adopted as per the Statutory provisions.**

DETAILED ESTIMATE FOR ESTABLISHMENT OF 110/11 KV SS WITH 2x16 MVA, 110/11 KV POWER TRANSFORMERS 2 NOS. 110 KV FEEDER AND 4 NOS. 11 KV FEEDER

SI. No	DESCRIPTION	QTY	Rate in Lakhs	PER	Amount in Lakhs	Total in Lakhs
I	CIVIL WORKS					
1	Land Cost (actuals)			As applicable	69.151	
2	Control room building with internal electrification, bore well with septic tank			LS		
3	Plinths,Fencing, Road and cable duct etc.,			LS	92.198	
4	Filling the yard with Gravel			LS	17.728	
5	Filling the yard with crusher dust (100 mm depth) and 20 mm HBG metal (100 mm depth)			LS	5.818	
	Total for civil works				184.895	184.90
II	ELECTRICAL WORKS					
1	110 kV AB Switch 2000 A with earth blade	2 Nos	1.249	Each	2.498	
2	110 KV AB Switch 2000 A w/o earth blade	6 Nos	0.872	Each	5.231	
3	110 KV SF6 Breaker	4 Nos	4.450	Each	17.800	
4	110 KV CTs(Single Phase) with JB	12 Nos	1.158	Each	13.900	
5	110 KV PTs(Single Phase) with JB	3 Nos	0.960	Each	2.880	
6	110 KV LAS (Single Phase)	6 Nos	0.229	Each	1.374	
7	11 KV AB Switch	12 Nos	0.281	Each	3.372	
8	11 KV VCB (LV breaker)	2 Nos	1.108	Each	2.215	
9	11 KV VCB (Feeder)	4 Nos	1.108	Each	4.430	
10	11 KV CTs - 1200-6001A	6 Nos	0.160	Each	0.960	
11	11 KV CTs - 400-200/1A	12 Nos	0.138	Each	1.656	
12	11 KV PTs	2 Nos	0.265	Each	0.530	
13	11 KV LAS - Station type	6 Nos	0.015	Each	0.089	
14	11 KV LAS - Disn. Type *	12 Nos	0.004	Each	0.048	
15	11 KV HG Fuse Set	1 Set	0.017	Each	0.017	
16	16 MVA, 110/33-11 KV Power Transformer with OLTC	2 Nos	101.318	Each	202.636	
17	Earthing and painting		8.409		8.409	
18	Outdoor Illumination		3.737		3.737	
19	Busbar System with ACSR Conductor,Aluminium Tube, Insulators,Power Connectors	1 Loc	15.000	LS	15.000	
20	110V DC indoor C&R panel for 110kv Feeder	2 Nos	4.340	Each	4.340	
21	110V DC indoor C&R panel for GC breaker	2 Nos	1.060	Each	2.120	
22	110V DC indoor C&R panel for LV breaker	2 Nos	2.040	Each	4.080	
23	110V DC indoor C & R Panel for Twin feeder	2 Nos	2.037	Each	4.075	
24	110V DC Annunciation Panel Type B	1 No	0.797	Each	0.797	
25	Control cable		5.000	LS	5.000	

DETAILED ESTIMATE FOR ESTABLISHMENT OF 110/11 KV SS WITH 2x16 MVA, 110/11 KV POWER TRANSFORMERS 2 NOS. 110 KV FEEDER AND 4 NOS. 11 KV FEEDER

SI. No	DESCRIPTION	QTY	Rate in Lakhs	PER	Amount in Lakhs	Total in Lakhs
26	110 V DC, 300 AH Battery set with stand	2 Set	3.465	Set	6.930	
27	110 V, 60A charger	3 set	1.000	Set	3.000	
28	Fire Fighting equipments		2.000	LS	2.000	
29	110 V D.C Distribution Panel	1 set	0.712	Set	0.712	
30	A.C Panel for 110kV SS	1 set	0.972	Set	0.972	
31	100 KVA, 11 kV/433 V Distn.Tr (Energy Efficient) *	1 No	2.211	Each	2.211	
32	P&T Phone	1 No	0.100	Each	0.100	
33	T&P materials			LS	1.000	
34	T&P furnitures			LS	1.000	
35	Scientific Instruments			LS	2.000	
36	SCADA Equipments			LS	40.000	
37	Sub total				367.120	
38	Contingencies 1%				3.671	
39	Cost of materials				370.792	
40	Labour & Transport @ 15%				55.619	
41	Sub total for Materials and Labour				426.410	
42	Establishment and Supervision charges @ 15%				63.962	
III	Total				490.372	490.37
1	110 KV Structure	1 set	65.325	Each	65.325	65.325
2	11 KV Structure	1 set	2.951	Each	2.951	2.951
3	Total for works					743.543
IV	Total for both electrical and civil works (G&N)					743.54

DETAILED ESTIMATE FOR ESTABLISHMENT OF 110/22 KV SS WITH 2x16 MVA, 110/22 KV POWER TRANSFORMERS 2NOs. 110 KV FEEDER AND 4 NOS. 22 KV FEEDER

SL. No	DESCRIPTION	QTY	Rate in Lakhs	PER	Amount in Lakhs	Total in Lakhs
I	CIVIL WORKS					
1	Land Cost (actuals)				As applicable	
2	Control room building with internal electrification, bore well with septic tank				69.151	
3	Plinths, Fencing, Road and cable duct etc.,				92.198	
4	Filling the yard with Gravel				17.728	
5	Filling the yard with crusher dust (100 mm depth) and 20 mm HBG metal (100 mm depth)				5.818	
Total for civil works					184.895	184.90
II	ELECTRICAL WORKS					
1	110 KV AB Switch 2000 A with earth blade	2 Nos	1.249	Each	2.498	
2	110 KV AB Switch 2000 A w/o earth blade	6 Nos	0.872	Each	5.231	
3	110 KV SF6 Breaker	4 No	4.450	Each	17.800	
4	110 KV CTs(Single Phase) with JB	12 Nos	1.158	Each	13.900	
5	110 KV PTs(Single Phase) with JB	3 Nos	0.960	Each	2.880	
6	110 KV LAS (Single Phase)	6 Nos	0.229	Each	1.374	
7	22 KV AB Switch	12 Nos	0.214	Each	2.568	
8	22 KV VCB (2 LV Breaker)	2 Nos	1.917	Each	3.835	
9	22 KV VCB (4 feeder)	4 Nos	1.917	Each	7.669	
10	22 KV CTs for Pr.Tr.LV	6 Nos	0.206	Each	1.237	
11	22 KV CTs for Feeders	12 Nos	0.181	Each	2.172	
12	22 KV PTs	3 Nos	0.155	Each	0.465	
13	22 KV LAS - Stn type	6 Nos	0.023	Each	0.137	
14	22 KV LAS - Disn. Type *	12 Nos	0.005	Each	0.060	
15	22 KV HG Fuse Set	1 Set	0.018	Each	0.018	
16	16 MVA, 110/22-11 kV Power Transformer with OLTC	2 No	101.318	Each	202.636	
17	Earthing and Painting		8.409		8.409	
18	Outdoor illumination		3.374		3.374	
19	Busbar System with ACSR Conductor, Aluminium Tube, Insulators, Power Connectors	1 Loc	15.000	LS	15.000	
20	110V DC indoor C&R panel for 110kv Feeder	2 Nos	4.340	Each	4.340	
21	110V DC indoor C&R panel for GC breaker	2 No	1.060	Each	2.120	
22	110V DC indoor C&R panel for LV breaker	2 Nos	2.040	Each	4.080	
23	110V DC indoor C & R (2 feeder) panel	2 Nos	2.037	Each	4.075	
24	110V DC Annunciatior Panel Type B	1 No	0.797	Each	0.797	
25	Control cable		5.000	LS	5.000	
26	110 V DC, 300 AH Battery set with charger	2 Set	3.465	Set	6.930	
27	110 V , 60A charger	3 set	1.000	Set	3.000	
28	Fire Fighting equipments		2.000	LS	2.000	
29	110 V D.C Distribution Panel	1 set	0.712	Set	0.712	
30	A.C Panel	1 set	0.972	Set	0.972	

DETAILED ESTIMATE FOR ESTABLISHMENT OF 110/22 KV SS WITH 2x16 MVA, 110/22 KV POWER TRANSFORMERS 2NOs. 110 KV FEEDER AND 4 NOS. 22 KV FEEDER							
Sl. No	DESCRIPTION	QTY		Rate in Lakhs	PER	Amount in Lakhs	Total in Lakhs
31	100 KVA, 22 kV / 433 V Distn.Tr (Energy Efficient)*	1	No	2.534	Each	2.534	
32	P&T Phone	1	No	0.100	Each	0.100	
33	T&P materials				LS	1.000	
34	T&P furnitures				LS	1.000	
35	Scientific Instruments				LS	2.000	
36	SCADA Equipments				LS	40.000	
37	Sub total					371.922	
38	Contingencies 1%					3.719	
39	Cost of materials					375.641	
40	Labour & Transport @ 15%					56.346	
41	Sub total for Materials and Labour					431.988	
42	Establishment and Supervision charges @ 15%					64.798	
III	Total					496.786	496.79
1	110 KV Structure	1	set	65.325	Each	65.325	65.325
2	22 KV Structure	1	set	5.875	Each	5.875	5.875
3	Total for works						752.881
IV	Total for both electrical and civil works (G&N)						752.88

DETAILED ESTIMATE FOR ESTABLISHMENT OF 110/33 KV SS WITH 2x16 MVA, 110/33 KV POWER TRANSFORMERS 2NOs. 110 KV FEEDER AND 4 NOS. 33 KV FEEDER

Sl. No	DESCRIPTION	QTY	Rate in Lakhs	PER	Amount in Lakhs	Total in Lakhs
I	CIVIL WORKS					
1	Land Cost (actuals)			As applicable		
2	Control room building with internal electrification, bore well with septic tank				69.151	
3	Plinths,Fencing, Road and cable duct etc.,				92.198	
4	Filling the yard with Gravel				17.728	
5	Filling the yard with crusher dust (100 mm depth) and 20 mm HBG metal (100 mm depth)				5.818	
	Total for civil works				184.895	184.90
II	ELECTRICAL WORKS					
1	110 KV AB Switch 2000 A with earth blade	2 Nos	1.249	Each	2.498	
2	110 KV AB Switch 2000 A w/o earth blade	6 Nos	0.872	Each	5.231	
3	110 KV SF6 Breaker	4 No	4.450	Each	17.800	
4	110 KV CTs(Single Phase) with JB	12 Nos	1.158	Each	13.900	
5	110 KV PTs(Single Phase) with JB	3 Nos	0.960	Each	2.880	
6	110 KV LAS (Single Phase)	6 Nos	0.229	Each	1.374	
7	33 KV AB Switch	12 Nos	0.214	Each	2.568	
8	33 KV VCB (2 LV Bkr) outdoor	2 Nos	1.917	Each	3.835	
9	33 KV VCB (4 feeder)	4 Nos	1.917	Each	7.669	
10	33 KV CTs(1200-600-300/1A)	6 Nos	0.206	Each	1.237	
11	33 KV CTs(600-300-150/1A)	12 Nos	0.181	Each	2.172	
12	33 KV PTs(outdoor)	3 Nos	0.186	Each	0.558	
13	33 KV LAS - Stn type	6 Nos	0.029	Each	0.173	
14	33 KV LAS - Disn. Type *	12 Nos	0.005	Each	0.060	
15	33 KV HG Fuse Set	1 Set	0.018	Each	0.018	
16	16 MVA, 110/33-11 KV Power Transformer with OLTC	2 No	101.318	Each	202.636	
17	Earthing and Painting		8.409		8.409	
18	Outdoor illumination		3.737		3.737	
19	Busbar System with ACSR Conductor,Aluminium Tube, Insulators,Power Connectors	1 Loc	15.000	LS	15.000	
20	110V DC C&P panel for 110kv Feeder	2 Nos	4.340	Each	4.340	
21	110V DC indoor C&R panel for GC breaker	2 No	1.060	Each	2.120	
22	110V DC indoor C&R panel for LV breaker	2 Nos	2.040	Each	4.080	
23	110V DC indoor C & R (2 feeder) panel	2 Nos	2.037	Each	4.074	
24	110V DC Annunciatior Panel Type B	1 No	0.797	Each	0.797	
25	Control cable		5.000	LS	5.000	
26	110 V DC, 300 AH Battery set with	2 Set	3.465	Set	6.930	
27	110 V , 60A charger	3 set	1.000	Set	3.000	
28	Fire Fighting equipments		2.000	LS	2.000	

DETAILED ESTIMATE FOR ESTABLISHMENT OF 110/33 KV SS WITH 2x16 MVA, 110/33 KV POWER TRANSFORMERS 2NOS. 110 KV FEEDER AND 4 NOS. 33 KV FEEDER

Sl. No	DESCRIPTION	QTY	Rate in Lakhs	PER	Amount in Lakhs	Total in Lakhs
29	110 V D.C Distribution Panel	1 set	0.712	Set	0.712	
30	A.C Panel	1 set	0.972	Set	0.972	
31	100 KVA, 33 KV /433 V Distn.Tr Energy efficient	1 No	2.534	Each	2.686	
32	P&T Phone	1 No	0.100	Each	0.100	
33	T&P materials			LS	1.000	
34	T&P furnitures			LS	1.000	
35	Scientific Instruments			LS	2.000	
36	SCADA Equipments			LS	40.000	
37	Sub total				372.566	
38	Contingencies 1%				3.726	
39	Cost of materials				376.291	
40	Labour & Transport @ 15%				56.444	
41	Sub total for Materials and Labour				432.735	
42	Establishment and Supervision charges @ 15%				64.910	
III	Total				497.645	497.65
1	110 KV Structure	1 set	65.325	Each	65.325	65.325
2	33 KV Structure	1 set	10.738	Each	10.738	10.738
3	Total for works					758.604
IV	Total for both electrical and civil works (G&N)					758.60

DETAILED ESTIMATE FOR ESTABLISHMENT OF 110/11 KV GIS SS, 2 NOS.16 MVA, 110/11 KV POWER TRANSFORMER, 3 NOS. 110 KV FEEDERS , AND 6 NOS. 11 KV FEEDERS

Sl.No.	Description	Quantity	Rate	RUPEES IN LAKHS	
				Per	Total Amount
I CIVIL WORKS					
1	Land cost			As applicable	
2	Control room including electrification			LS	354.64
3	Climatisation			LS	17.74
4	Generator room and burnt oil sump			LS	8.88
5	Cable duct			LS	8.88
6	Station yard filling and levelling			LS	8.88
7	Compound Wall and fencing			LS	17.74
8	Lead road formation			LS	8.88
9	Water supply and drainage system			LS	5.32
10	Plinth for 110KV Cable Terminal Insulatos structre and LA Structure	18	Loc		2.00
11	Plinth for Transformers	2	Loc		5.00
12	Fire Protection wall for Pr.Tr.	1	Loc		3.50
Total for civil works					441.45
II ELECTRICAL WORKS					
A 110 KV GIS SWITCH GEAR ERECTION					
110 KV SF6 Indoor GIS with 3 feeders, 2 transformers and nos. disconnector switch with following components					
1	110 KV Indoor GIS line bay with all equipments.	3 Nos	65.0	E	195.1
2	110 KV Indoor GIS transformer bay with all equipments.	2 Nos	59.4	E	118.8
3	110 KV Indoor Bus PT	2 Nos	6.9	E	13.8
4	Off load Disconnector Switch	1 Nos	19.8	E	19.8
5	Earthing switch	2 Nos	3.7	E	7.4
6	Earthing arrangements			LS	20.0
B STATION AUXILIARIES					
1	110 V, 300 AH Battery set with stand	2 Set	3.47	E	6.930
2	110 V, DC, 60 A battery charger	3 Nos	1.05	E	3.150
3	250 KVA, 11 KV/433 V Distribution Transformer (Energy efficient) *	1 No.	3.947	E	3.947
4	Control & Relay panel			LS	35.000
5	110 V D.C Distribution Panel	2 No	0.712	E	1.424
6	AC Panel	1 No	0.972	E	0.972
7	11 KV Indoor VCB (Transformer LV)	2 Nos.	3.75	E	7.50
8	11 KV Indoor VCB for feeder	6 Nos.	3.23	E	19.38
9	11 KV VCB Indoor (Bus coupler)	1 No.	3.36	E	3.36
10	Control cable			LS	1.58
11	Fire fighting equipment			LS	1.00
12	SCADA and Substation automation system			LS	56.26

DETAILED ESTIMATE FOR ESTABLISHMENT OF 110/11 KV GIS SS, 2 NOS.16 MVA, 110/11 KV POWER TRANSFORMER, 3 NOS. 110 KV FEEDERS , AND 6 NOS. 11 KV FEEDERS

Sl.No.	Description	Quantity	Rate	RUPEES IN LAKHS		
				Per	Total Amount	
13	P &T Phone			LS	0.10	
14	Scientific Intruments			LS	1.25	
15	T & P and Furniture			LS	1.00	
16	Earthing, painting & Yard lighting			LS	3.465	
17	110 KV, 1 x 630 sq.mm XLPE cable	0.3	Km	51.13	Km	15.339
18	110 KV cable terminations outdoor GIS	9	nos	2.25	E	20.220
19	110 KV cable terminations indoor GIS	15	nos	1.95	E	29.175
20	11 KV, 1 x 630 sq.mm. XLPE cable with accessories with termination kit			LS	3.50	
21	EOT Crane Arrangments 10T	1	No	16.268	E	16.268
22	Illumination and ventilation			LS	5.000	
23	Sub total					610.73
C	Total cost of materials					610.73
1	Contingencies 1% of Materials cost (C)					6.11
2	Sub total					616.84
3	Labour and transport charges @ 15 % (C 2)					92.53
4	Sub total					709.36
D	110 KV POWER TRANSFORMERS ERECTION					
1	16 MVA, 110/11 KV Pr Tr with OLTC	2	Nos	101.318	E	202.64
2	Labour & transport for Trs	2	Loc	3.456	Loc	6.912
3	Earthing	2	Loc	0.550	Loc	1.100
4	Control Cable			LS		1.00
5	Sub total					211.65
E	Total cost of materials and equipments (C4+D5)					921.01
1	Establishment and Supervision Charges @15% (E)					138.15
2	Total (Gross & Nett) (E+E1)					1059.16
	Total for Civil & Ele. works (G&N)					1500.61

**DETAILED ESTIMATE FOR ESTABLISHMENT OF 110/33 KV GIS SS, 2 NOS. 25 MVA,
110/33 KV POWER TRANSFORMER, 3 NOS. 110 KV FEEDERS and 6 NOS. 33 KV
FEEDERS**

RUPEES IN LAKHS					
Sl.No.	Description	Quantity	Rate	Per	Total Amount
I	CIVIL WORKS				
1	Land cost				As applicable
2	Control room including electrification			LS	354.64
3	Climatisation			LS	17.74
4	Generator room and burnt oil sump			LS	8.88
5	Cable duct			LS	8.88
6	Station yard filling and levelling			LS	8.88
7	Compoud Wall and fencing			LS	17.74
8	Lead road formation			LS	8.88
9	Water supply and drainage system			LS	5.32
10	Plinth for 110KV Cable Terminal Insulatos strucdre and LA Structure	18	Loc		2.00
11	Plinth for Transformers	2	Loc		5.00
12	Fire Protection wall for Pr.Tr.	1	Loc		3.50
	Total for civil works				441.45
II	ELECTRICAL WORKS				
A	110 KV GIS SWITCH GEAR ERECTION				
	110 KV SF6 Indoor GIS with 3 feeders, 2 transformers and 1 no. disconnector switch with following components				
1	110 KV Indoor GIS line bay with all equipments.	3 Nos	65.03	E	195.1
2	110 KV Indoor GIS transformer bay with all equipments.	2 Nos	59.40	E	118.8
3	110 KV Indoor Bus PT	2 Nos	6.90	E	13.8
4	Off load Disconnector Switch	1 Nos	19.8	E	19.8
5	busbar Earth switch	2 Nos	3.69	E	7.4
6	Earthing arrangements			LS	20.0
B	STATION AUXILIARIES				
1	110 V, 300 AH Battery set with stand	2 Nos	3.47	E	6.930
2	110 V, DC, 60 A battery charger	3 Nos	1.05	E	3.150
3	250 KVA, 11 KV/433 V Distribution Transformer (energy efficient) *	1 No.	3.947	E	3.947
4	Control & Relay panel			LS	35.000
5	110 V D.C Distribution Panel	2 No	0.712	E	1.424
6	AC panel	1 No	0.972	E	0.972
7	33 KV VCB Indoor (LV-2)	2 Nos.	6.30	E	12.591
8	33 KV VCB Indoor for feeder	6 Nos.	5.82	E	34.914

**DETAILED ESTIMATE FOR ESTABLISHMENT OF 110/33 KV GIS SS, 2 NOS. 25 MVA,
110/33 KV POWER TRANSFORMER, 3 NOS. 110 KV FEEDERS and 6 NOS. 33 KV
FEEDERS**

RUPEES IN LAKHS					
Sl.No.	Description	Quantity	Rate	Per	Total Amount
9	33 KV VCB Indoor (Bus coupler)	1 No.	7.32	E	7.320
10	Control cable			LS	1.58
11	Fire fighting equipment			LS	1.00
12	SCADA and Substation automation system			LS	56.26
13	P &T Phone			LS	0.10
14	Scientific Instruments			LS	1.25
15	T & P and Furniture			LS	1.00
16	Earthing, painting & Yard lighting			LS	3.638
17	110 KV, 1 x 630 sq.mm XLPE cable with accessories	0.3 Km	51.13	Km	15.339
18	110 KV cable terminations outdoor GIS	9 nos	2.25	E	20.220
19	110 KV cable terminations indoor GIS	15 nos	1.95	E	29.175
20	33 KV, 1 x 630 sq.mm. XLPE cable with termination kit			LS	2.50
21	EOT Crane Arrangments 10T	1 No	16.268		16.268
22	Illumination and ventilation			LS	4.000
23	Sub total				633.44
C	Total cost of materials				633.44
1	Contingencies 1% of Materials cost (C)				6.33
2	Sub total				639.78
3	Labour and transport charges @ 15 % (C 2)				95.97
4	Sub total				735.74
D	110 KV POWER TRANSFORMERS ERECTION				
1	25 MVA, 110/33 KV Pr Tr with OLTC	2 Nos	124.13	E	248.27
2	Labour & transport for Trs	2 Loc	3.456	Loc	6.912
3	Earthing	2 Loc	0.550	Loc	1.100
4	Control Cable			LS	1.00
5	Sub total				257.28
E	Total cost of materials and equipments (C4+D5)				993.02
1	Establishment and Supervision Charges @15% (E)				148.95
2	Total (Gross & Nett) (E+E1)				1141.98
	Total for Civil & Ele. works (G&N)				1583.43

DETAILED ESTIMATE FOR ESTABLISHMENT OF 230/110 KV SS WITH 2x100 MVA, 230/110 KV AUTO TRANSFORMERS, 2 NOS. 230 KV FEEDERS AND 6 NOS. 110 KV FEEDERS

SL NO	DESCRIPTION	QTY	RATE RS IN LAKHS	PER	AMOUNT RS IN LAKHS	TOTAL RS IN LAKHS
I	CIVIL WORKS					
1	Land cost				As applicable	
2	Control room building with internal electrification, bore well with septic tank			LS	326.260	
3	Diesel Gen set room			LS	10.191	
4	Compound wall			LS	122.345	
5	Plinths for Breaker and Transformer, RCC retaining wall, Cable duct, filling the yard with gravel and allied civil works.			LS	855.763	
6	Road, Drain and sump			LS	131.630	
7	Filling the yard with crusher dust (100 mm depth) and 20 mm HBG metal (100 mm depth)			LS	21.800	
8	Fire Protection wall			LS	12.000	
9	NIFPS Sump Pit for 2 Auto Transformers			LS	7.500	
Total for civil works					1487.489	1487.489
II	ELECTRICAL WORKS					
1	230 KV SF6 Breakers 50 KA with Support Struture	5 Nos	12.308	E	61.540	
2	230 KV Isolator 2000 A with earth	2 Nos	1.860	E	3.720	
3	230 KV Isolator 2000 A w/o earth	20 Nos	1.620	E	32.400	
4	230 KV PT (single phase) with Jn Box	6 Nos	1.927	E	11.560	
5	230 KV Bus Earth switch (1 phase)	3 Nos	0.620	E	1.860	
6	230 KV CVT(Single Phase) with Jn Box	6 Nos	1.772	E	10.633	
7	230 KV CT(single phase) with Jn Box	15 Nos	2.333	E	35.000	
8	230 KV Lightning Arresters	12 Nos	0.369	E	4.422	
9	110 KV SF6 Circuit Breakers	9 Nos	4.450	E	40.051	
10	110 KV Isolator 2000 A with earth	6 Nos	1.249	E	7.493	
11	110 KV Isolator 2000 A w/o earth	12 Nos	0.872	E	10.463	
12	110 KV Bus Earth switch	6 Nos	0.416		2.498	
13	110 KV CT(single phase) with Jn Box	30 Nos	1.158	E	34.750	
14	110 KV PT with Jn Box	6 Nos	0.960	E	5.760	
15	110 KV CVT/PT (single phase)	6 Nos	1.659	E	9.954	
16	110 KV Lightning Arresters	6 Nos	0.229	E	1.374	
17	220 V, 300 AH Battery sets with stand	2 Set	7.567	Set	15.134	
18	220V, 60A Battery chargers	3 Set	1.275	Set	3.825	
19	100 MVA,230/110 KV Auto Transformer with OLTC & NIFPS	2 Nos	377.895	E	755.790	
20	Control & Relay Panel					
21	Control & Protection panel for 230/110KV Auto.Tr	2 Nos.	10.510	E	21.020	
22	Control & Protection panel for 230 KV Feeder	2 Nos.	6.330	E	12.660	
23	230 KV Bus Bar protection relay panel (23 bays)	1 No.	11.285	E	11.285	
24	Control & Protection panel for 230 kV Bus coupler	1 No.	3.910	E	3.910	

DETAILED ESTIMATE FOR ESTABLISHMENT OF 230/110 KV SS WITH 2x100 MVA, 230/110 KV AUTO TRANSFORMERS, 2 NOS. 230 KV FEEDERS AND 6 NOS. 110 KV FEEDERS

SL NO	DESCRIPTION	QTY	RATE RS IN LAKHS	PER	AMOUNT RS IN LAKHS	TOTAL RS IN LAKHS
25	Synchronising cum Islanding Panel for 230 kV Bays (SAS)	1 set	3.078	set	3.078	
26	Control & Protection panel for 110 kV Feeder	6 Nos.	4.340	E	26.040	
27	Control & Protection panel for 110 kV Bus coupler	1 No	3.510	E	3.510	
28	Control & Protection panel for 110 kV Bus Bar protection relay panel (upto 23 bays)	1 No	11.285	E	11.285	
29	Marshalling Box	14 Nos	0.280	E	3.924	
30	Synchronising cum Islanding Panel for 110 kV Bays (SAS)	1 set	3.078	set	3.078	
31	AC panel 230 KV SS	2 Nos	1.399	set	2.798	
32	220 V DC panel	2 Nos	0.824	set	1.647	
33	48 V DC panel	2 Nos	1.204	E	2.409	
34	Substation Automation System	1 No	56.260	E	56.260	
35	Sub Total				1211.129	
36	Accessories at 3% on Sl. No.35				36.33	
37	Control cables of assorted size			LS	15.00	
38	Auxiliary panel & Interconnecting cables			LS	10.00	
39	230 kV structure	1 No	230.090	E	230.090	
40	110 kV structure	2 Nos	65.325	E	130.651	
41	Earthing and Painting		74.746		74.746	
42	Outdoor illumination		8.409		8.409	
43	250 kVA, 11 KV/433V(Copper winding) Distribution transformer (Energy efficient) *	2 Nos	3.947	E	7.894	
44	DG set 250 kVA with accessories including AMF panel	1 No	12.867	E	12.867	
45	Fire fighting equipments			LS	5.000	
46	Scientific instruments			LS	2.500	
47	P&T Phone			LS	0.200	
48	Cost of materials				1744.819	
49	Contingencies 1% on sl.no.48				17.448	
50	Sub total				1762.267	
51	Labour and transport charges @ 15 % on sl.no.50				264.340	
52	Sub total				2026.607	
53	Estt. & supervision charges @ 15% on sl.no.66				303.991	
54	Sub total				2330.598	2330.598
III Provision of PLCC equipment						
1	Digital Protection coupler including remote end SS	4 Nos	2.83	E	11.32	
2	EPAX for Analog/Digital/VOIP system	1 No	6.94	E	6.94	
3	48 V/400 AH Battery Set	2 Nos	1.717	No	3.434	
4	48 V /80 A Battery Chargers	3 Nos	1.045	No	3.135	
5	Optic line terminal equipments (OLTES) with Multiplexer with cross connectivity	1 Nos	23.836	No	23.84	
6	Commissioning of SAS	14 bays	0.200	bay	2.800	
7	Sub total				51.467	51.467
	Total for both electrical and civil works (G&N)					3869.554

**DETAILED ESTIMATE FOR ESTABLISHMENT OF A 230/110 KV GIS SS WITH
2X100 MVA. 230/110 KV AUTO TRANSFORMERS , 3 NOS. 230 KV FEEDERS and
6 NOS. 110 KV FEEDERS**

SI.N O.	DESCRIPTION		QUANTITY	Rs in lakhs		
				RATE	PER	AMOUNT
I	Civil Works					
1	Land Cost					As applicable
2	Control Room				LS	354.64
3	Climatisation				LS	53.20
4	Generator room and burnt oil sump				LS	27.83
5	RCC cable ducts				LS	79.81
6	Filling and Levelling of site				LS	26.61
7	Compound wall/Fencing				LS	53.20
8	Road formation with block topping				LS	26.61
9	Water supply and Drainage system				LS	13.31
10	230KV Plinth arrangements				LS	25.000
11	110KV Plinth arrangements				LS	15.000
12	Plinth for 230/110 KV auto transformer	2 Nos		4,840	E	9,680
13	Fire Protection wall for 2 Nos Autos				Loc	12.000
14	NIFPS Sump Pit for 2 Autos					15.000
Total for civil works						711.897
II	Electrical Works					
A	230 KV GIS Switch Gear Erection					
1	230 KV line bay with all equipments with double bus arrangement		3 Nos	202.95	E	608.845
2	230 KV transformer bay with all equipments with double bus arrangement		2 Nos	131.47	E	262.932
3	230 KV bus bar PT		6 nos.	52.71	E	316.281
4	Bus bar Earthing switch		2 No	47.62	E	95.242
5	Earthing arrangements				LS	20.000
Subtotal						1303.300
B	Auto Transformer Erection					
1	100 MVA, 230/110 KV auto transformer with OLTC		2 Nos	377.89	E	755.790
2	Earthing		2 loc	0.550	loc	1.100
3	230 KV, 1x1200 sq.mm Aluminium XLPE cable		0.6 Kms	66.881	Km	40.129
5	230 KV GIS terminations		15 Nos	6.05	E	90.743
6	230 KV out door terminations		15 Nos	7.258	E	108.868
7	230 KV out door terminations structure		15 Nos	0.341	E	5.110
8	230 KV Single phase link box with CCPU		15 Nos	0.351	E	5.259
9	230 KV Single phase link box without CCPU		15 Nos	0.21	E	3.182
10	Sheath bonding cable -240 sq.mm		0.5 Km	15.042	Km	7.521
11	Sheath link box		5 Nos	1.332	E	6.660
12	110 KV, 1x630 Sq.mm, XLPE cable between LV of auto tr and 110 KV GIS breaker		0.6 Kms	51.13	Km	30.678
13	110 KV GIS terminations		24 Nos	1.95	E	46.680
14	110 KV out door terminations		24 Nos	1.945	E	46.680
15	110 KV out door terminations structure		24 Nos	0.232	E	5.567

**DETAILED ESTIMATE FOR ESTABLISHMENT OF A 230/110 KV GIS SS WITH
2X100 MVA. 230/110 KV AUTO TRANSFORMERS , 3 NOS. 230 KV FEEDERS and
6 NOS. 110 KV FEEDERS**

SI.N O.	DESCRIPTION				Rs in lakhs		
					QUANTITY	RATE	AMOUNT
16	110 KV Single phase link box with CCPU		24 Nos	0.312	E	7.479	
17	110 KV Single phase link box without CCPU		24 Nos	0.212	E	5.092	
18	Subtotal						1166.538
C	110 KV GIS Switch Gear Erection						
1	110 KV GIS Breaker Package comprising of 6 feeders, 2 nos 110 KV LV breakers and bus sectionaliser isolator switch and 1 no. spare		1 Set	600.00	Set	600.00	
2	110 KV bus bar PT (Single phase)		6 Nos	6.90	E	41.385	
3	110 KV off load disconnector switch		1 No	14.01	E	14.010	
4	Earthing switch		2 Nos	3.69	E	7.383	
5	Earthing arrangements				LS	15.000	
	Sub total						677.778
D	Station Auxiliaries						
1	Control & Protection panel for 230 kV Feeder		3 Nos	6.330	E	18.990	
2	Control & Protection panel for 230/110KV Auto.Tr		2 Nos	10.510	E	21.020	
3	230 kV Bus Bar protection relay panel (23 bays)		1 No	11.285	E	11.285	
	Synchronising cum Islanding Panel for 230 kV Bays		1 Set	3.078		3.078	
4	Control & Protection panel for 110 kV Feeder		6 Nos	4.340	E	26.040	
5	Control & Protection panel for 110 kV Bus Bar protection relay (upto 23 bays)		1 No	11.285	E	11.285	
6	LT 415V ACDB with LT Circuit Breaker Control, MCBs including change over switch arrangements for 400KV SS		3 Nos	4.523	E	13.569	
7	DC Panel		2 No	0.824	E	1.647	
8	Synchronising cum Islanding Panel for 110 kV Bays		1 Set	3.078		3.078	
9	Substation Automation System		1 Set	56.26	E	56.260	
10	Earthing, Painting and Station yard lighting				LS	13.979	
11	DG set 250 kVA with accessories including AMF panel		1 No.	12.87	E	12.867	
12	220 V, 300 AH Battery set with stand		2 Set	7.57	E	15.134	
13	220 V DC, 60 A battery charger		3 Nos	1.28	E	3.825	
14	Control cables of assorted size with tray arrangement				LS	20.000	
15	Fire fighting equipment				LS	4.000	
16	P&T Phone				LS	0.200	
17	Scientific Instruments				LS	2.000	
18	T&P and Furniture				LS	2.000	
19	EOT crane arrangements				LS	16.268	
20	Cable testing equipments & accessories				LS	100.000	

**DETAILED ESTIMATE FOR ESTABLISHMENT OF A 230/110 KV GIS SS WITH
2X100 MVA. 230/110 KV AUTO TRANSFORMERS , 3 NOS. 230 KV FEEDERS and
6 NOS. 110 KV FEEDERS**

SI.N O.	DESCRIPTION	QUANTITY	RATE	Rs in lakhs	
				PER	AMOUNT
21	Illumination and ventilation			LS	7,000
	Subtotal				363.523
E	Communication Equipments				
1	Optic line terminal equipments (OLTE) with Multiplexer with cross connectivity	1 No	23.836	No	23.836
2	Digital Protection coupler including remote end SS	6 Nos	2.830		16.980
3	EPAX for Analog/Digital/VOIP system	1 No	6.942	E	6.942
5	48 V / 400 AH battery (SAN Container)	2 Set	1.717	No	3.434
6	48 V/ 80 A battery charger	3 Nos	1.045	No	3.135
9	Sub total				54.327
F	Total for equipments				3565.467
1	Contigencies @ 1%				35.655
2	Sub Total				3601.122
3	Labour and Transport @15%				540.168
4	Total cost of Materials, Labour & Transport				4141.290
5	Establishment and Supervision Charges @15%				621.193
	Total (Gross & Nett)				4762.483
	Total for both electrical and civil works (G&N)				5474.380

DETAILED ESTIMATE FOR AN ESTABLISHMENT OF 400/230-110KV AIS, 2 NOS. 500 MVA 400/230 KV AUTO TRANSFORMER, 2 NOS. 200 MVA 400/110 KV AUTO TRANSFORMER, 400 KV SYSTEM (4 DIA) WITH BUS & LINE REACTORS , 6 NOS. 230 KV FEEDERS, 4 NOS. 110 KV FEEDERS - BUS-I AND BUS II SCHEME

SI. NO.	DESCRIPTION	QTY	RATE in Lakhs	PER	AMOUNT in Lakhs	
I	CIVIL WORKS					
1	Cost of land				As applicable	
2	Control room Building, Internal electrification, water supply arrangements and Switch yard Panel Room			LS	447.14	
3	Gravel filling, metal spreading and yard leveling			LS	630.66	
4	Approach Road			LS	375.55	
5	Cable duct and Retaining wall			LS	736.94	
6	Compound wall			LS	260.77	
7	Structure Foundation, Plinths, supply of towers & Foundation for Towers in yard and allied civil works			LS	3310.55	
8	Fire Protection wall				35.00	
9	NIFPS Sump Pit for 4 Autos				15.00	
10	Total for civil works				5811.60	
II	ELECTRICAL WORKS					
A	Equipments					
1	22kV/433 V, 500kVA, Distribution Transformer (Energy Efficient Level II)	2	No	5.85	set	11.70
2	400/230/33 kV 500 MVA, 3 Phase 50 C/S, YNaod11, Auto Transformer with OLTC and NIFPS	2	Set	1232.09	No	2464.18
3	400/110 kV, 200 MVA Auto(3 phase unit) transformer with OLTC and NIFPS	2	Set	771.21	Set	1542.42
4	400kV, 80 MVAR Bus Reactor with NIFPS	1	No	407.49	no	407.49
5	400 kV, 80 MVAR, Line Reactor, with NGR with NIFPS	1	No	445.26	no	445.26
6	420KV,3150A, 63KA 3 phase outdoor SF6 Breaker with pre insertion resistor & without CSD all accessories	4	Nos	38.94	E	155.76
7	420KV,3150A, 63KA 3 phase outdoor SF6 Breaker with pre insertion resistor & with CSD all accessories	4	Nos	45.00	E	180.00

DETAILED ESTIMATE FOR AN ESTABLISHMENT OF 400/230-110KV AIS, 2 NOS. 500 MVA 400/230 KV AUTO TRANSFORMER, 2 NOS. 200 MVA 400/110 KV AUTO TRANSFORMER, 400 KV SYSTEM (4 DIA) WITH BUS & LINE REACTORS , 6 NOS. 230 KV FEEDERS, 4 NOS. 110 KV FEEDERS - BUS-I AND BUS II SCHEME

Sl. No.	DESCRIPTION	QTY		RATE in Lakhs	PER	AMOUNT in Lakhs
8	420KV,3150A, 63KA SF6 Breaker with out pre insertion resistor & with CSD all accessories	7	Nos	36.22	E	253.54
9	420KV, 3000A, 63KA ~ 5 Core Single Phase Current Transformers with support structure, accessories and junction box	54	Nos	6.40	E	345.63
10	420KV single phase Capacitive Voltage Transformer with support structure	18	Nos	2.23	E	40.10
11	400KV ,10KA,Station Type LAS	30	Nos	1.07	E	31.97
12	400KV,3150A, 63KA Horizontal Center Break Disconnector with Single Earth blades.	33	set	7.31	set	241.21
13	400KV,3150A, 63KA Horizontal Center Break Disconnector with double Earth blades.	9	set	8.40	set	75.64
14	400KV Bus Earth switch (single phase)	6	Nos	3.26	E	19.58
15	400KV Busbars, All Types of Power connectors, Tension Fitting Clamps, Insulators and hardwares	1	Lot	142.00	Lot	142.00
16	400 kV Solid core insulator with structure (each)	30	Nos	0.62	set	18.69
17	230KV, 2000A, 50KA SF6 Breaker	9	Nos	10.37	E	93.37
18	230KV,2000A,40KA ~ 5 Core Single Phase Current Transformers with TC & JB (Ratio 2000-1200- 800-400/1A)	27	Nos	2.38	E	64.35
19	230KV outdoor Potential Transformers with TC & JB	6	Nos	1.93	E	11.56
20	230 KV- 10 KA Station Type LAS	30	Nos	0.52	E	15.53
21	230 KV Capacitive Voltage Transformer with Structures	18	Nos	1.77	E	31.90
22	230 KV - 2000 A, 40 KA Isolator with Earthblades	6	Set	1.86	set	11.16
23	230 KV - 2000 A, 40KA Isolator without Earthblades	36	set	1.62	set	58.32
24	230KV All Types of Power Connectors, Tension Fitting Clamps, Insulators and for 230KV Yard	1	Lot	37.00	Lot	37.00

DETAILED ESTIMATE FOR AN ESTABLISHMENT OF 400/230-110KV AIS, 2 NOS. 500 MVA 400/230 KV AUTO TRANSFORMER, 2 NOS. 200 MVA 400/110 KV AUTO TRANSFORMER, 400 KV SYSTEM (4 DIA) WITH BUS & LINE REACTORS , 6 NOS. 230 KV FEEDERS, 4 NOS. 110 KV FEEDERS - BUS-I AND BUS II SCHEME

Sl. No.	DESCRIPTION	QTY		RATE in Lakhs	PER	AMOUNT in Lakhs
25	110KV,2000A,40KA SF6 Breakers with all accessories	8	Nos	4.45	E	35.60
26	110KV,1200A,40KA - 1 Phase CTs (Ratio - 1200-600-300/1A) with TC &JB	21	Nos	1.28	E	26.95
27	110KV,1200A,40KA - 1 Phase CTs (Ratio - 600-300-150/1A) with TC &JB	3	Nos	1.16		3.47
28	110 KV PT with Jn Box	6	Nos	0.96	E	5.76
29	110 KV- 10 KA Station Type LAS	21	nos	0.23	E	4.81
30	110 KV CVT/PT	4	Nos	1.66	E	6.64
31	110 KV - 2000A,40KA Isolator with Earthblades	4	Nos	1.25	E	5.00
32	110 KV - 2000A,40KA Isolator without Earth blades	29	Nos	0.87	E	25.28
33	110KV All Types of Power Connectors, Tension Fitting Clamps, Insulators and hardwares	1	Lot	16.00	Lot	16.00
34	ACSR Moose Conductor ,Aluminium Tubes and GI wire for 400KV, 230KV and 110KV Yards	1	Lot	100.00	Lot	100.00
35	22 kV LAS - Stn type	9	Nos	0.02	Each	0.21
36	22KV AB Switch	2	Nos	0.21	E	0.43
37	22KV HG Fuse Set	2	Set	0.02	Set	0.04
38	22KV VCB-220V DC	1	No	1.92	E	1.92
39	22 KV CTs for Pr.Tr.LV	3	Nos	0.21	E	0.62
40	22 KV PTs	3	Nos	0.16	Each	0.47
41	220V DC Indoor C &R Panel for GC Breaker	1	No	1.06	E	1.06
42	220V DC Indoor C &R Panel for LV Breaker	1	No	2.04	E	2.04
43	33KV, 3CX400smm Aluminium XLPE UG able	0.4	km	19.65	km	7.86
44	Straight Joint Kits(HS Type) for XLPE Aluminium Cable	3	Nos	0.19	E	0.56
45	Outdoor Termination Kit (HS Type)	6	Nos	0.07	E	0.40
46	5MVA, 110/22KV Power Transformer	1	No	6.00	E	6.00
47	220V, 400 AH Battery Set with Stand	2	Sets	10.06	set	20.12

DETAILED ESTIMATE FOR AN ESTABLISHMENT OF 400/230-110KV AIS, 2 NOS. 500 MVA 400/230 KV AUTO TRANSFORMER, 2 NOS. 200 MVA 400/110 KV AUTO TRANSFORMER, 400 KV SYSTEM (4 DIA) WITH BUS & LINE REACTORS , 6 NOS. 230 KV FEEDERS, 4 NOS. 110 KV FEEDERS - BUS-I AND BUS II SCHEME

SI. NO.	DESCRIPTION	QTY		RATE in Lakhs	PER	AMOUNT in Lakhs
48	220V, 300 AH Battery Set with Stand	2	Sets	7.57	set	15.13
49	220V 80 Amps Battery charger with potential free contacts for all indications for SAS interface.	3	nos	3.23	E	
50	220VDC, 60 Amps Battery charger with potential free contacts for all indications for SAS interface.	3	nos	1.28	E	3.83
51	Control Cables, LT Power Cables and Cable Trays			LS		530.00
52	Earthing and Painting					205.55
53	Outdoor Illumination					18.69
54	250 KVA DG Set with accessories	1	set	12.87	set	12.87
55	Sub-Total					7755.64
III CONTROL AND RELAY PANEL						
1	220 V DC Distribution Panel for 400kV SS	2	Nos	1.59	E	3.19
2	48 V DC Distribution Panel for 400kV SS	2	Nos	1.20	E	2.41
3	LT 415V ACDB with LT Circuit Breaker Control, MCBs including change over switch arrangements for 400KV SS	3	Nos	4.52	E	13.57
4	AC Junction Box for Kiosk	9	Nos	0.28	E	2.52
5	Control & Protection panel for 400/230 KV ICT	2	Nos	13.26	E	26.52
6	Control & Protection panel for 400/110 KV ICT	2	Nos	1.26		2.51
7	Control & Protection panel for 400 kV Feeder	4	Nos	12.96	E	51.86
8	Control & Protection panel for 400 kV Bus Reactor /Line Reactor	2	Nos	8.39		16.78
9	Control & Protection panel for 400 kV Tie Breaker bay	5	Nos	4.81	E	24.05
10	400KV Busbar Protection Relay Panel	1	No	15.90	E	15.90
11	Synchronising cum Islanding Panel for 400 kV Bays	1	No	3.078	E	3.08
12	Control & Protection panel for 230 kV Feeder	6	Nos	6.33	E	37.98
13	Control & Protection panel for 230 kV Bus coupler bay	1	No	3.91	E	3.91

DETAILED ESTIMATE FOR AN ESTABLISHMENT OF 400/230-110KV AIS, 2 NOS. 500 MVA 400/230 KV AUTO TRANSFORMER, 2 NOS. 200 MVA 400/110 KV AUTO TRANSFORMER, 400 KV SYSTEM (4 DIA) WITH BUS & LINE REACTORS , 6 NOS. 230 KV FEEDERS, 4 NOS. 110 KV FEEDERS - BUS-I AND BUS II SCHEME

SI. NO.	DESCRIPTION	QTY		RATE in Lakhs	PER	AMOUNT in Lakhs
14	Synchronising cum Islanding Panel for 230 kV Bays	1	No	3.08	E	3.08
15	Control & Protection panel for 110 kV Bus Bar protection relay panel (upto 23 bays)	1	No	12.59	E	12.59
16	Control & Protection panel for 110 kV Feeder	4	Nos	4.34	E	17.36
17	Control & Protection panel for 110 kV Bus coupler	1	No	3.51	E	3.51
18	Synchronising cum Islanding Panel for 110 kV Bays	1	No	3.08	E	3.08
19	Sub-Station Automation System	1	lot	56.26	E	56.26
20	OPGW cable (24 fibre) DWSM cable and accessories for KIOSK system	1.7	km	1.64	km	2.79
21	Sub-Total					302.93
IV	PLCC EQUIPMENTS					
1	Optic line terminal equipments (OLTE) with Multiplexer with cross connectivity	2	Nos	23.84	E	47.67
2	Digital Protection coupler including remote end SS	28	Nos	2.83	E	79.24
3	EPAX for Analog/Digital/VOIP system	1	No	6.94	E	6.94
4	48V, 400 AH Battery Set with Stand	2	sets	1.72	set	3.43
5	48V/ 80 A Battery Chargers	3	Nos	1.05	E	3.14
6	Sub-Total					140.42
7	Cost of materials and equipments (II+III+IV)					8198.99
8	Accessories at 3%					245.97
9	Sub-Total					8444.96
10	Contingencies 1%					84.45
11	Sub-Total					8529.41
12	Labour and Transport 15%					1279.41
13	Cost of Material and Labour					9808.83
14	Estt & Supervision Charges 15%					1471.32
15	SUB-TOTAL					11280.15
VI	OTHERS					
1	Fire Fighting Equipments			LS		8.00
2	Scientific Instruments like Megger 5KV (Battery operated), Multimeter etc.,			LS		2.00
3	Circuit Breaker analysing kit (multi break)	1	No	12.00	E	12.00

DETAILED ESTIMATE FOR AN ESTABLISHMENT OF 400/230-110KV AIS, 2 NOS. 500 MVA 400/230 KV AUTO TRANSFORMER, 2 NOS. 200 MVA 400/110 KV AUTO TRANSFORMER, 400 KV SYSTEM (4 DIA) WITH BUS & LINE REACTORS , 6 NOS. 230 KV FEEDERS, 4 NOS. 110 KV FEEDERS - BUS-I AND BUS II SCHEME

Sl. No.	DESCRIPTION	QTY		RATE in Lakhs	PER	AMOUNT in Lakhs
4	CT/PT Analyser kit	1	No	15.00	E	15.00
5	Primary Injection Kit (2000 Amps))	1	No	15.00	E	15.00
6	Transformer winding resistance test Kit	1	No	6.64	E	6.64
7	Tandelta Testing kit with variable frequency	1	Set	38.00	Set	38.00
8	T & P Furnitures				LS	2.00
9	PC & Software	1	No	1.00	E	1.00
10	Optical Power Meter Hand held OLP-6 or similar	1	No	0.11	E	0.11
11	Optical Source	1	No	2.42	E	2.42
12	Optical Splicing Machine and optical time domain reflectometer	1	No	9.08	E	9.08
13	Commissioning of SAS	33	bays	0.20	E	6.60
14	Sub-Total					117.85
VII	STRUCTURES					
1	400KV Structures	1	Loc	487.54	Loc	487.54
2	230KV Structures	1	Loc	230.09	Loc	230.09
3	110KV Structures	1	Loc	65.33	Loc	65.33
4	Sub-Total					782.96
5	Total for Works					17992.56
6	Total for both electrical and civil works (G&N)					17992.56

C.ESTIMATES FOR BAY EXTENSION

DETAILED ESTIMATE FOR 11KV BAY EXTENSION

SI No	DESCRIPTION	UNIT	QTY	RATE	Rs. In lakhs
1	11kV AB switch	Nos.	2	0.281	0.562
2	11 KV VCB Breaker	Nos	1	1.108	1.108
3	11 KV (1200-600/1A) Oil filled (outdoor) CT	Nos	3	0.160	0.480
4	11 KV LAS	Nos	3	0.015	0.045
5	Relay & control panel for LV breaker	Nos	1	2.040	2.040
6	Structure	LS		2.150	2.150
7	Control cables	LS		0.500	0.500
8	Busbar arrangement,	LS		0.312	0.312
9	conductor,Insulator,Hardware fitting	LS			0.500
10	Civil works including foundation	LS		0.352	0.352
11	Sub total				8.048
	Contingencies 1 %				0.080
	Cost of materials and equipments				8.129
	Labour and transport 15%				1.219
	Cost of materials and labour				9.348
	Establishment and Supervision Charges @15%				1.402
	Total				10.750

Say Rs. 10.75 Lakhs

DETAILED ESTIMATE FOR 22KV BAY EXTENSION

SI No	DESCRIPTION	UNIT	QTY	RATE	Rs. In lakhs
1	22kV AB switch	Nos.	2	0.214	0.428
2	22 KV VCB Breaker	Nos	1	1.917	1.917
3	22 kV CTs	Nos	3	0.206	0.619
4	22 KV LAS	Nos	3	0.023	0.069
5	Relay & control panel for LV breaker	Nos	1	2.040	2.040
6	Structure	LS	4.280	4.280	
7	Control cables	LS	0.500	0.500	
8	Busbar arrangement conductor,Insulator,Hardware fitting	LS	0.312	0.312	
9	Civil works including foundation	LS	0.352	0.352	
10	Sub total				11.016
	Contingencies 1 %				0.110
	Cost of materials and equipments				11.127
	Labour and transport 15%				1.669
	Cost of materials and labour				12.796
	Establishment and Supervision Charges @15%				1.919
	Total				14.715

Say Rs. 14.71 Lakhs

DETAILED ESTIMATE FOR 33KV BAY EXTENSION

SI No	DESCRIPTION	UNIT	QTY	RATE	Rs. In lakhs
1	33kV AB switch	Nos.	2	0.214	0.428
2	33 KV VCB Breaker	Nos	1	1.917	1.917
3	33 KV (1200-600-300/1 A) out door CT	Nos	3	0.206	0.619
4	33 KV LAS	Nos	3	0.029	0.086
5	Relay & control panel for LV breaker	Nos	1	2.040	2.040
6	Structure	LS		7.810	7.810
7	Control cables	LS		0.500	0.500
8	Busbar arrangement conductor, Insulator, Hardware fitting	LS		0.312	0.312
9	Civil works including foundation	LS		0.352	0.352
10	Sub total				14.564
	Contingencies 1 %				0.146
	Cost of materials and equipments				14.710
	Labour and transport 15%				2.206
	Cost of materials and labour				16.916
	Establishment and Supervision Charges @15%				2.537
	Total				19.454

Say Rs. 19.45 Lakhs

DETAILED ESTIMATE FOR 110KV BAY EXTENSION

SI No	DESCRIPTION	UNIT	QTY	RATE	Rs. In lakhs
1	110 kV AB switch 2000 A without earth	Nos.	1	0.872	0.872
2	110 kV AB switch 2000 A with earth	Nos	1	1.249	1.249
3	110 kV SF6 Breaker 40 kA	Nos	1	4.450	4.450
4	110 kV CTs (Single Phase)	Nos	3	1.283	3.850
5	Control & protection panel for 110kV Feeder	Nos	1	4.340	4.340
6	Structure	LS		13.100	13.100
7	Control cables	LS		1.691	1.691
8	Busbar arrangement	LS		1.691	1.691
9	conductor,Insulator,Hardware fitting	LS		3.000	3.000
10	Earthing	LS		1.000	1.000
11	Civil works including foundation	LS		2.217	2.217
12	SAS Configuration Charges	LS			5.000
13	Sub total				42.459
	Contingencies 1 %				0.425
	Cost of materials and equipments				42.883
	Labour and transport 15%				6.433
	Cost of materials and labour				49.316
	Establishment and Supervision Charges @15%				7.397
	Total				56.713

Say Rs. 56.71 Lakhs

DETAILED ESTIMATE FOR 230 KV BAY EXTENSION

Rs. In lakhs

SI No	DESCRIPTION	UNIT	QTY	RATE	TOTAL
1	Civil works including foundation		LS	81.229	81.229
2	230 kV, SF6 50 KA out door Breaker	Nos	1	9.950	9.950
3	230 kV, (1600-1200-600-300/1 A) out door CT with TC (5core) with JB	Nos	3	2.333	7.000
4	230 KV Isolator 2000 A with earth blades	Nos	1	1.860	1.860
5	230 KV Isolator 2000 A without earth blades	Nos	4	1.620	6.480
6	Control & protection panel for 230 KV Feeder	Nos	1	6.330	6.330
7	Structure		LS	35.640	35.640
8	Control cables		LS	7.768	7.768
9	Busbars, insulators, hardwares		LS	5.865	5.865
10	Shielding & Earthing		LS	2.933	2.933
11	SAS Configuration Charges		LS		5.000
Sub total					170.055
Contingencies 1 %					1.701
Cost of materials and equipments					171.756
Labour and transport 15%					25.763
Cost of materials and labour					197.519
Establishment and Supervision Charges @15%					29.628
Total					227.147

Say Rs. 227.15 Lakhs

DETAILED ESTIMATE FOR 400 KV BAY EXTENSION AT 400 KV SS

(With One and Half Breaker scheme) - For Two Bays

Rs. In lakhs

SI No	DESCRIPTION	UNIT	QTY	RATE	TOTAL
1	420 kV, SF6 Breaker with pre insertion resistor	Nos	3	38.941	116.823
2	420 kV, CT	Nos	12	6.401	76.806
3	400 kV Isolator with double earth	Nos	10	8.404	84.043
4	400 kV Lightning Arrester	Nos	6	1.066	6.395
5	400kV Single phase CVT	Nos	6	2.228	13.368
6	400 kV double tension fitting with disc insulator for twin moose	Nos	24	0.230	5.519
7	400 kV single suspension string Insulator	Nos	18	0.106	1.908
8	400 kV support Insulator	Nos	27	0.426	11.503
9	4" Alu. Tube bus clamp for support Insulator	Nos	27	0.034	0.918
10	Clamps, Spacers and others for 400 kV Yard	LS		5.250	5.250
11	Alu. Tube, Moose conductor for 400 kV yard	LS		10.500	10.500
12	Control & protection Panel for 400kV Line / Feeder	Nos	2	12.964	25.928
13	Control & protection Panel for 400kV Tie breaker bay	No	1	4.810	4.810
14	Marshalling box	Nos	3	0.280	0.841
15	400 kV Structure	LS		91.770	91.770
16	Control cables & LT power cables	LS		28.941	28.941
17	Yard lighting	LS		3.473	3.473
18	Shielding & Earthing	LS		0.281	0.281
19	Civil works for foundation, cable duct, Yard levelling, filling, lead road and foot path and fencing.	LS		233.678	233.678
20	400KV Wave Traps	E	4	3.402	13.608
21	Line Matching coupling Device for 400KV	E	2	0.555	1.109
22	PLCC carrier set	E	6	2.425	14.550
23	Protection coupler for 400KV	E	4	2.830	11.320
	Configuration with SAS Charges	LS			5.000
24	Subtotal				768.342
25	Spares 3%				23.050
26	Cost of Equipment & material				791.392
27	Erection charges at 10%				79.139
28	Transportation 5%, Insurance 1%, Total 6%				47.484
29	Contingencies 1 %				7.914
30	Total				925.928
31	Cost of material & Labour				925.928
32	Establishment (7.5%), T&P (1%), Loss on stock (0.25%), Audit & Accounts (1%), Maintenance during construction (1%). Total 10.75%				99.537
Overall Cost					1025.466

Say Rs. 1025.47 Lakhs

D.CIVIL ESTIMATES

TAMILNADU TRANSMISSION CORPORATION LIMITED						
		UNIT	DESCRIPTION	Rate in Rs.	Per	Amount in Rs.
1			Galvanised steel tower materials with extension part wherever necessary, and bolts and nut setc.,			
a	114.72	MT	a. MS 100%	63499.00	MT	7284605.28
b	7.58	MT	b. Ordinary Bolts & nuts	90000.00	MT	682200.00
2	600	No.	90 KN Disc Insulators	392.00	No.	235200.00
3	1029	No.	120 KN Disc Insulators	481.00	No.	494949.00
			Conductor & Earth wire accessories			
4	60	Set	Single Suspension fittings for ACSR Panther	1245.00	Set	74700.00
5	12	Set	Sus.fittings for Jumper	1245.00	Set	14940.00
6	120	Set	Single Tension fittings for ACSR Panther	1875.00	Set	225000.00
7	6	Set	Double Tension Fittings for Panther	4264.00	Set	25584.00
8	120	Set	Vibration Damper for Panther	725.00	Set	87000.00
9	15	Set	Mid span comp.joint for ACSR Panther	485.00	Set	7275.00
10	10	Set	Repair sleeve for ACSR Panther	365.00	Set	3650.00
11	60	Set	PA rod for Panther	730.00	Set	43800.00
16	30.3	KM	ACSR PANTHER conductors 1.0% sag	134274.73	KM	4068524.32
17	10.5	KM	OFC ground wire 48 fibres with accessories	179724.00	KM	1887102.00
			Earthing materials			
18	40	No.	Pipe type earthing	2176.94	No.	87077.60
19	2	No.	Counter poise earthing (120m length)	8166.00	No.	16332.00
			Tower Accessories			
20	40	No.	Number plate	270.00	No.	10800.00
21	40	No.	Danger Board	362.00	No.	14480.00
22	20	No.	Phase plate(Set of three)	303.03	No.	6060.60
23	20	No.	Circuit plate	303.03	No.	6060.60
24			TOTAL COST OF MATERIALS			15275340.40
			TOWER FOUNDATIONS			
25	20	No.	PA type tower	53618.00	No.	1072360.00
			0° to 2° Suspension tower			
26	8	No.	PB type tower	74807.00	No.	598456.00
			2° to 30° Medium angle tower			
27	12	No.	PC type tower	123533.00	No.	1482396.00
			30° to 60° High angle & Dead end tower			
28			Tower protection works			500000.00
29			TOTAL COST OF FOUNDATION WORKS			3653212.00
30			Erection charges(10% on cost of materials)			1527534.04
			Transportation & Insurance charges (5% on cost of materials)			763767.02
31			Total amount			21219853.46
32			Labour Welfare Fund 1.0% on Foundation & Erection Charges			51807.46
			EPF at 13% on labour portion			388546.45
33			ESI at 3.25 % on labour portion			97136.61
			Total			21757343.98
34			GST @ 18%			3916321.92
			Total			25673665.90

TAMILNADU TRANSMISSION CORPORATION LIMITED						
		110 KV SC line on SC towers with Panther conductor.				
Sl. No.	QTY	UNIT	DESCRIPTION	Rate in Rs.	Per	Amount in Rs.
35			Establishment & Supervision Charges at 15.0%			3851049.88
			TOTAL			29524715.78
41			Contingencies 1%			295247.16
42			Land compensation			9607600.00
43	10	KM	Tree/Crop compensation	1000000	KM	10000000.00
44			TOTAL COST PER	10	KM	49427562.94
45			TOTAL COST PER 1 KM			4942756.29
			(Rounding to nearest 1000)	SAY		4943000
			TOTAL COST PER 1 KM IN LAKHS			49.43

TAMILNADU TRANSMISSION CORPORATION LIMITED						
Sl. No.	QTY	Unit	DESCRIPTION	Rate in Rs.	Per	Amount in Rs.
1			Galvanised steel tower materials with extension part wherever necessary, and bolts and nuts etc..			
a	244.95	MT	b) MS 100%	63499.00	MT	15554080.05
b	15.17	MT	c) Ordinary Bolts & nuts	90000.00	MT	1365300.00
2	686	No.	90 KN Disc Insulators	392.00	No.	268912.00
3	1029	No.	120 KN Disc Insulators	481.00	No.	494949.00
			Conductor & Earth wire accessories			
4	60	Set	Single Suspension fittings for ACSR Panther	1245.00	Set	74700.00
5	36	Set	Suspension fitting for jumper	1245.00	Set	44820.00
6	120	Set	Single Tension fittings for ACSR Panther	1875.00	Set	225000.00
7	6	Set	Double Tension Fittings for Panther	4264.00	Set	25584.00
8	120	Set	Vibration Damper for Panther	725.00	Set	87000.00
9	15	Set	Mid span comp.joint for ACSR Panther	485.00	Set	7275.00
10	10	Set	Repair sleeve for ACSR Panther	365.00	Set	3650.00
11	60	Set	PA rod for Panther	730.00	Set	43800.00
16	30.3	KM	ACSR PANTHER conductors 1.0% sag	134274.73	KM	4068524.32
17	10.5	KM	OFC ground wire 48 fibres with accessories	179724.00	KM	1887102.00
			Earthing materials			
18	40	No.	Pipe type earthing	2176.94	No.	87077.60
19	2	No.	Counter poise earthing (120m length)	8166.00	No.	16332.00
			Tower Accessories			
20	40	No.	Number plate	270.00	No.	10800.00
21	40	No.	Danger Board	362.00	No.	14480.00
22	20	No.	Phase plate(Set of three)	303.03	No.	6060.60
23	20	No.	Circuit plate	303.03	No.	6060.60
24			TOTAL COST OF MATERIALS			24291507.17
			TOWER FOUNDATIONS			
25	20	No.	GC type tower	79086.00	No.	1581720.00
			0° to 2° Suspension tower			
26	8	No.	HC type tower	193610.00	No.	1548880.00
			2° to 30° Medium angle tower			
27	12	No.	KC type tower	254879.00	No.	3058548.00
			30° to 60° High angle & Dead end tower			
28			Tower protection works			500000.00
29			COST OF FOUNDATION			6689148.00
30			Erection charges(10% on cost of materials)			2429150.72
			Transportation & Insurance charges (5% on cost of materials)			1214575.36
31			Total amount			34624381.24
32			Labour Welfare Fund 1.0% on Foundation & Erection Charges			91182.99
			EPF at13% on labour portion			663625.29
33			ESI at 3.25 % on labour portion			165906.32

TAMILNADU TRANSMISSION CORPORATION LIMITED						
Sl. No.	QTY	Unit	DESCRIPTION	Rate in Rs.	Per	Amount in Rs.
			Total			35545095.84
			GST @ 18%			6398117.25
34			Total			41943213.09
			Establishment & Supervision Charges at 15.0%			6291481.96
1			Total			48234695.06
39			Contingencies at 1%			482346.95
			Land compensation			9607600.00
43	10	KM	Tree/Crop compensation	1000000	KM	10000000.00
44			TOTAL COST PER		10 KM	68324642.01
45			TOTAL COST PER 1 KM			6832464.201
			(Rounding to nearest 1000)	SAY		6833000.00
			TOTAL COST PER 1 KM IN LAKHS			68.33

TAMILNADU TRANSMISSION CORPORATION LIMITED						
110 KV DC line on DC Towers with Panther conductor						
Sl. No.	Quantity		DESCRIPTION	Rate in Rs.	Per	Amount in Rs.
1			Galvanised steel tower materials with extension part wherever necessary, and bolts and nuts etc.,			
a	244.95	MT	a) MS 100%	63499.00	MT	15554080.05
b	15.47	MT	b) Ordinary Bolts & nuts	90000.00	MT	1392300.00
2	1111.00	No.	90 KN Disc Insulators	392.00	No.	435512.00
3	2057.00	No.	120 KN Disc Insulators	481.00	No.	989417.00
			Conductor & Earth wire accessories			
4	120	Set	Single Suspension fittings for ACSR Panther	1245.00	Set	149400.00
5	36	Set	Sus.fittings for Jumper	1245.00	Set	44820.00
6	240	Set	Single Tension fittings for ACSR Panther	1875.00	Set	450000.00
7	12	Set	Double Tension Fittings for Panther	4264.00	Set	51168.00
8	240	Set	Vibration Damper for Panther	725.00	Set	174000.00
9	30	Set	Mid span comp.joint for ACSR Panther	485.00	Set	14550.00
10	10	Set	Repair sleeve for ACSR Panther	365.00	Set	3650.00
11	120	Set	PA Rod for Panther	730.00	Set	87600.00
16	60.6	KM	ACSR PANTHER conductors 1.0% sag	134274.73	KM	8137048.64
	10.5	KM	OFC ground wire 48 fibres with accessories	179724.00	KM	1887102.00
			Earthing materials			
18	40	No.	Pipe type earthing	2176.94	No.	87077.60
19	2	No.	Counter poise earthing (120m length)	8166.00	No.	16332.00
			Tower Accessories			
20	40	No.	Number plate	270.00	No.	10800.00
21	40	No.	Danger Board	362.00	No.	14480.00
22	40	No.	Phase plate(Set of three)	303.03	No.	12121.20
23	40	No.	Circuit plate	303.03	No.	12121.20
24			Total Cost of materials			29523579.69
			TOWER FOUNDATIONS			
25	20	No.	GC type tower	79086.00	No.	1581720.00
			0° to 2° Suspension tower			
26	8	No.	HC type tower	193610.00	No.	1548880.00
			2° to 30° Medium angle tower			
27	12	No.	KC type tower	254879.00	No.	3058548.00
			30° to 60° High angle & Dead end tower			
28			Tower protection works			500000.00
29			Total Cost of Foundations			6689148.00
30			Erection charges(10% on cost of materials)			2952357.97
			Transportation & Insurance charges (5% on cost of materials)			1476178.98
31			Total amount			40641264.64

TAMILNADU TRANSMISSION CORPORATION LIMITED						
110 KV DC line on DC Towers with Panther conductor						
Sl. No.	Quantity		DESCRIPTION	Rate in Rs.	Per	Amount in Rs.
32			Labour Welfare Fund 1.0% on Foundation & Erection Charges			96415.00
33			EPF at 13.00% on labour portion			731642.23
			ESI at 3.25 % on labour portion			182910.56
			Total			41652232.43
34			GST @ 18%			7497401.84
35			Total			49149634.27
			Establishment & Supervision Charges at 15.0%			7372445.00
1			Total			56522079.27
41			Contingencies 1%			565220.79
42			Land compensation			9607600.00
43	10	KM	Tree/Crop compensation	1000000.00	KM	10000000.00
44			TOTAL COST PER		10 KM	76694900.06
45			TOTAL COST PER 1 KM			7669490.01
			(Rounding to nearest 1000)	SAY		7670000.00
			TOTAL COST /KM in LAKHS			76.7

TAMILNADU TRANSMISSION CORPORATION LIMITED						
230 KV SC line on DC towers with Zebra conductor						
Sl. No.	QTY	Unit	DESCRIPTION	Rate in Rs.	Per	Amount in Rs.
1			Galvanised steel tower materials with extension part wherever necessary, and bolts and nutsetc..			
a	386.848	MT	b) MS 100%	63499.00	MT	24564461.15
b	20.372	MT	c) Ordinary Bolts & nuts	90000.00	MT	1833480.00
2	1114	No.	90 KN Disc Insulators	392.00	No.	436688.00
3	2228	No.	120 KN Disc Insulators	481.00	No.	1071668.00
			Conductor & Earth wire accessories			
4	48	Set	Single Suspension fittings for ACSR Zebra	2140.00	Set	102720.00
5	144	Set	Single Tension fittings for ACSR Zebra	2390.00	Set	344160.00
6	6	Set	Double Tension Fittings for Zebra	4919.00	Set	29514.00
7	144	Set	Vibration Damper for Zebra	1075.00	Set	154800.00
8	30	Set	Mid span comp.joint for ACSR ZEBRA	700.00	Set	21000.00
9	30	Set	Repair sleeve for ACSR ZEBRA	357.00	No.	10710.00
10	54	Set	PA rod for ZEBRA	1400.00	Set	75600.00
15	30.3	KM	ACSR Zebra conductors 1.0% sag	252000.00	KM	7635600.00
16	10.5	KM	OFC ground wire 48 fibres with accessories	179724.00	KM	1887102.00
			Earthing materials			
17	35	No.	Pipe type earthing	2176.94	No.	76192.90
18	2	No.	Counter poise earthing (120m length)	8166.00	No.	16332.00
			Tower Accessories			
19	37	No.	Number plate	270.00	No.	9990.00
20	37	No.	Danger Board	362.00	No.	13394.00
21	37	No.	Phase plate(Set of three)	303.03	No.	11212.11
22	37	No.	Circuit plate	303.03	No.	11212.11
23			Total COST ON Materials			38305836.27
			TOWER FOUNDATIONS			
24	18	No.	G type tower	190801.00	No.	3434418.00
			0° to 2° Suspension tower			
25	10	No.	KS type tower	209807.00	No.	2098070.00
			2° to 30° Medium angle tower			
26	9	No.	LS type tower	452887.00	No.	4075983.00
			30° to 60° High angle & Dead end tower			
27			Tower protection works			500000.00
28			TOTAL FOUNDATION COST			10108471.00
29			Erection charges(10% on cost of materials)			3830583.63
			Transportation & Insurance charges (5% on cost of materials)			1915291.81
30			Total amount			54160182.71
31			Labour Welfare Fund 1.0% on Foundation & Erection Charges			139390.55
32			EPF at 13% on labour portion			1023616.36
33			ESI at 3.25 % on labour portion			255904.09
			Total			55579093.71
			GST @ 18 % on total amount			10004236.87

TAMILNADU TRANSMISSION CORPORATION LIMITED						
230 KV SC line on DC towers with Zebra conductor						
Sl. No.	QTY	Unit	DESCRIPTION	Rate in Rs.	Per	Amount in Rs.
			Total			65583330.58
34			Establishment & Supervision Charges at 15.0%			9837500.00
35			Total			75420830.58
36			Contingencies 1%			754208.31
			Land compensation			14103000.00
42	10	KM	Tree/Crop compensation	1000000	KM	10000000.00
43			TOTAL COST PER		10 KM	100278038.89
44			TOTAL COST PER 1 KM			10027803.89
			(Rounding to nearest 1000)	SAY		10028000.00
			TOTAL COST PER 1 KM IN LAKHS			100.28

TAMILNADU TRANSMISSION CORPORATION LIMITED						
230 KV DC line on DC towers with Zebra conductor						
Sl. No.	QTY	UNIT	DESCRIPTION	Rate in Rs.	Per	Amount in Rs.
1			Galvanised steel tower materials with extension part wherever necessary, and bolts and nutsetc.,			
a	386.85	MT	a. MS 100%	63499.00	MT	24564588.15
b	20.78	MT	b. Ordinary Bolts & nuts	90000.00	MT	1870200.00
2	1751	No.	90 KN Disc Insulators	392.00	No.	686392.00
3	4284	No.	120 KN Disc Insulators	481.00	No.	2060604.00
			Conductor & Earth wire accessories			
4	96	Set	Single Suspension fittings for ACSR Zebra	2140.00	Set	205440.00
5	36	Set	Single Suspension fitting for Jumpering	2140.00	Set	77040.00
6	288	Set	Single Tension fittings for ACSR Zebra	2390.00	Set	688320.00
7	12	Set	Double Tension Fittings for Zebra	4919.00	Set	59028.00
8	288	Set	Vibration Damper for Zebra	1075.00	Set	309600.00
9	30	Set	Mid span comp.joint for ACSR ZEBRA	700.00	Set	21000.00
10	15	Set	Repair sleeve for ACSR ZEBRA	445.00	No.	6675.00
11	96	Set	PA rod for ZEBRA	1400.00	No.	134400.00
16	60.6	KM	ACSR Zebra conductors 1.0% sag	252000.00	KM	15271200.00
17	10.5	KM	OFC ground wire 48 fibres with accessories	179724.00	KM	1887102.00
			Earthing materials			
18	40	No.	Pipe type earthing	2176.94	No.	87077.60
19	2	No.	Counter poise earthing (120m length)	8166.00	No.	16332.00
			Tower Accessories			
20	40	No.	Number plate	270.00	No.	10800.00
21	40	No.	Danger Board	362.00	No.	14480.00
22	48	No.	Phase plate(Set of three)	303.03	No.	14545.44
23	48	No.	Circuit plate	303.03	No.	14545.44
24			TOTAL COST ON MATERIALS			47999369.63
			TOWER FOUNDATIONS			
25	16	No.	GR type tower	190801.00	No.	3052816.00
			0° to 2° Suspension tower			
26	12	No.	KSR type tower	209807.00	No.	2517684.00
			2° to 30° Medium angle tower			
27	12	No.	LSR type tower	452887.00	No.	5434644.00
28			Tower protection works			500000.00
29			COST OF FOUNDATION WORKS			11505144.00
30			Erection charges(10% on cost of materials)			4799936.96
			Transportation & Insurance charges charges (5% on cost of materials)			2399968.48
31			Total amount			66704419.07
32			Labour Welfare Fund 1.0% on Foundation & Erection Charges			163050.81

TAMILNADU TRANSMISSION CORPORATION LIMITED						
230 KV DC line on DC towers with Zebra conductor						
SI. No.	QTY	UNIT	DESCRIPTION	Rate in Rs.	Per	Amount in Rs.
			EPF at 13 % on labour portion			1222259.29
			ESI at 3.25 % on labour portion			305564.82
33			Total			68395294.00
			GST @ 18 % on total amount			12311152.92
34			Total			80706446.92
35			Establishment & Supervision Charges at 15.0%			12105967.04
36			Total			92812413.96
			Contingencies 1%			928124.14
			Land compensation			14103000.00
43	10	KM	Tree/Crop compensation	1000000.00	KM	10000000.00
44			TOTAL COST PER		10 KM	117843538.10
45			TOTAL COST PER 1 KM			11784353.81
			(Rounding to nearest 1000)	SAY		11785000.00
			Total Cost per KM in LAKHS			117.85

TAMILNADU TRANSMISSION CORPORATION LIMITED						
230 KV DC Line ON MC TOWERS WITH ZEBRA CONDUCTOR						
Sl. No.	Qty		DESCRIPTION	Rate in Rs.	Per	Amount in Rs.
			Galvanised steel tower materials with extension part wherever necessary, and bolts and nutsetc.			
1	669.88	MT	MS tower parts	63499.00	MT	42536862.52
2	210.65	MT	HT Tower parts	65999.00	MT	13902398.95
3	21.59	MT	Ordinary Bolts & nuts	90000.00	MT	1943100.00
4	1751	No.	90 KN Disc Insulators	392.00	No.	686392.00
5	4284	No.	120 KN Disc Insulators	481.00	No.	2060604.00
			Conductor & Earth wire accessories			
6	96	Set	Single Suspension Fittings for ACSR Zebra	2140.00	Set	205440.00
7	72	Set	Single suspension fittings for jumperig	2140.00	Set	154080.00
8	288	Set	Single Tension fittings for ACSR Zebra	2390.00	Set	688320.00
9	6	Set	Double tension fittings	4919.00	Set	29514.00
10	288	Set	Vibration Damper for ACSR Zebra	1075.00	Set	309600.00
11	30	Set	Mid span comp. joint for Zebra	700.00	Set	21000.00
12	15	No.	Repair sleeve for Zebra	445.00	No.	6675.00
13	96	Set	PA rod for ZEBRA	1400.00	Set	134400.00
18	60.6	KM	ACSR Zebra	252000.00	KM	15271200.00
19	10.5	KM	OFC ground wire 48 fibres with accessories	179724.00	KM	1887102.00
			Earthing Materials			
20	40	No.	Pipe type earthing	2176.94	No.	87077.60
21	2	No.	Counter poise earthing (120m length)	8166.00	No.	16332.00
			Tower Accessories			
22	40	No.	Number plate	270.00	No.	10800.00
23	40	No.	Danger Board	362.00	No.	14480.00
24	48	No.	Phase plate(Set of three)	303.03	No.	14545.44
25	48	No.	Circuit plate	303.03	No.	14545.44
26	40	No.	Anti-climbing devices	10791.00	No.	431640.00
27			TOTAL COST OF MATERIALS			80426108.95
			TOWER FOUNDATIONS			
28	16	No.	MA type tower	447241.00	No.	7155856.00
			0° to 2° Suspension tower			
29	12	No.	MC type tower	1211412.00	No.	14536944.00
			2° to 30° Medium angle tower			
30	12	No.	MD type tower	1428546.00	No.	17142552.00
			30° to 60° High angle & Dead end tower			
31			Tower protection works			5000000.00
32			TOTAL FOUNDATION COST			43835352.00
33			Erection charges 10% on cost of materials			8042610.90
			Transportation & Insurance charges (5% on cost of materials)			4021305.45
34			Total amount			136325377.29
35			Labour Welfare Fund 1.0% on Foundation & Erection Charges			518779.63
			EPF at 13 % on labour portion			3324977.72

TAMILNADU TRANSMISSION CORPORATION LIMITED						
230 KV DC Line ON MC TOWERS WITH ZEBRA CONDUCTOR						
Sl. No.	Qty		DESCRIPTION	Rate in Rs.	Per	Amount in Rs.
36			ESI at 3.25 % on labour portion			831244.43
			Total			141000379.07
37			GST @ 18 % on total amount			25380068.23
			Total			166380447.31
38			Establishment & Supervision Charges at 15.0%			24957067.10
39			Total			191337514.40
			Contingencies 1%			1913375.14
1			Land compensation			14103000.00
46	10	KM	Tree/Crop compensation	1000000.00	KM	10000000.00
47			TOTAL COST PER		10 KM	217353889.55
48			TOTAL COST PER 1 KM			21735388.95
			(Rounding to nearest 1000)	SAY		21736000.00
			COST PER KM IN LAKHS			217.36

TAMILNADU TRANSMISSION CORPORATION LIMITED						
230 KV 4 CIRCUITS LINE ON MC TOWERS WITH ZEBRA CONDUCTOR						
Sl. No.	Quantity		DESCRIPTION	Rate in Rs.	Per	Amount in Rs.
			Galvanised steel tower materials with extension part wherever necessary, and bolts and nutsetc.,			
1	669.88	MT	MS tower parts	63499.00	MT	42536710.12
2	210.65		HT Tower parts	65999.00	MT	13902689.35
3	24.508	MT	Ordinary Bolts & nuts	90000.00	MT	2205720.00
4	4456	No.	90 KN Disc Insulators	392.00	No.	1746752.00
5	8568	No.	120 KN Disc Insulators	481.00	No.	4121208.00
			Conductor & Earth wire accessories			
6	192	Set	Single Suspension Fittings for ACSR Zebra	2140.00	Set	410880.00
7	72	Set	Single suspension fittings for jumperig	2140.00	Set	154080.00
	72	Set	Single suspension fittings for jumperig	2140.00		154080.00
8	576	Set	Single Tension fittings for ACSR Zebra	2390.00	Set	1376640.00
9	24	set	Double tension fittings	4919.00	Set	118056.00
10	576	Set	Vibration Damper for ACSR Zebra	1075.00	Set	619200.00
11	60	Set	Mid span comp. joint for Zebra	700.00	Set	42000.00
12	30	No.	Repair sleeve for Zebra	445.00	No.	13350.00
13	192	Set	PA Rod for ZEBRA	1400.00	Set	268800.00
18	121.2	KM	ACSR Zebra	252000.00	KM	30542400.00
19	10.5	KM	OFC ground wire 48 fibres with accessories	179724.00	KM	1887102.00
			Earthing Materials			
20	40	No.	Pipe type earthing	2176.94	No.	87077.60
21	2	No.	Counter poise earthing (120m length)	8166.00	No.	16332.00
			Tower Accessories			
22	40	No.	Number plate	270.00	No.	10800.00
23	40	No.	Danger Board	362.00	No.	14480.00
24	96	No.	Phase plate(Set of three)	303.03	No.	29090.88
25	96	No.	Circuit plate	303.03	No.	29090.88
26	40	No.	Anti-climbing devices	10791.00	No.	431640.00
27			TOTAL COST OF MATERIALS			100718178.83
			TOWER FOUNDATIONS			
28	16	No.	MA type tower	447241.00	No.	7155856.00
			0° to 2° Suspension tower			
29	12	No.	MC type tower	1211412.00	No.	14536944.00
			2° to 30° Medium angle tower			
30	12	No.	MD type tower	1428546.00	No.	17142552.00
			30° to 60° High angle & Dead end tower			
31			Tower protection works			5000000.00
32			TOTAL FOUNDATION COST			43835352.00
33			Erection charges(10% on cost of materials)			10071817.88
			Transportation & Insuranc charges charges (5% on cost of materials)			5035908.94
34			Total amount			159661257.65

TAMILNADU TRANSMISSION CORPORATION LIMITED						
230 KV 4 CIRCUITS LINE ON MC TOWERS WITH ZEBRA CONDUCTOR						
Sl. No.	Quantity		DESCRIPTION	Rate in Rs.	Per	Amount in Rs.
35			Labour Welfare Fund 1.0% on Foundation & Erection Charges			539071.70
			EPF at 13 % on labour portion			3588774.63
36			ESI at 3.25 % on labour portion			897193.66
			Total			164686297.64
37			GST @ 18 % on total amount			29643533.58
			Total			194329831.21
38			Establishment & Supervision Charges at 15.0% on item 39			29149475.00
39			Total			223479306.21
			Contingencies 1%			2234793.06
1			Land compensation			14103000.00
46	10	KM	Tree/Crop compensation	1000000.00	KM	10000000.00
47			TOTAL COST PER		10 KM	249817099.28
48			TOTAL COST PER 1 KM			24981709.93
			(Rounding to nearest 1000)	SAY		24982000.00
			TOTAL COST PER KM IN LAKHS			249.82

TAMILNADU TRANSMISSION CORPORATION LIMITED						
400 KV DC LINE ON DC TOWERS (WIND ZONE-4, TC-2) WITH TWIN MOOSE CONDUCTOR						
Sl. No.	Quantity	DESCRIPTION	Rate in Rs.	Per	Amount in Rs.	
1		Galvanised steel tower materials with extension part wherever necessary, and bolts and nutsetc.,				
	339.47 MT	a) HT Steel	65999.00	MT	22404680.53	
	246.86 MT	b) MS	63499.00	MT	15675363.14	
	22.2 MT	c) Ordinary Bolts & nuts	90000	MT	1998000.00	
	0 MT	d)Anti-theft bolts and nuts	90000	MT	0.00	
2	3097 No.	120 KN Disc Insulators	481.00	No.	1489657.00	
3	9988 No.	160 KN Disc Insulators	662	No.	6612056.00	
		Conductor & Earth wire accessories				
4	78 Set	Single I suspension string for Twin ACSR Moose	19271.00	Set	1503138.00	
5	54 Set	Single I suspension pilot string with counter weight	40988.00	Set	2213352.00	
6	204 Set	Double Tension string	22332.00	Set	4555728.00	
7	408 Set	Vibration Damper for Twin ACSR Moose	1318.00	Set	537744.00	
8	1273 Set	Bundle spacer for Twin Moose	1484.00	Set	1889132.00	
9	306 Set	Rigid Spacer for conductor ACSR Moose 3 Nos. per jumper	892.00	Set	272952.00	
10	60 Set	Midspan compression joint for Moose	1000.00	Set	60000.00	
11	30 No.	Repair sleeve for Moose	423.00	No.	12690.00	
12	13 Set	Suspension clamp for Earth wire 7/3.66mm	719.00	Set	9347.00	
13	34 Set	Tension Clamp for Earth wire 7/3.66mm	726.00	Set	24684.00	
14	5 Set	Midspan compression joint for GS Earth wire 7/3.66mm			353 Set	
					1765.00	
15	68 No.	Vibration Damper for Earth wire 7/3.66mm	635.33	Set	43202.44	
16	47 No.	Flexible copper bond for earthing	935.00	No.	43945.00	
17	121.8 KM	ACSR Moose conductors 1.5 % sag	309475.00	KM	37694055.00	
18	10.1 KM	GS EARTH WIRE 7/3.66mm 1.0% sag	67675.00	KM	683517.50	
19	10.5 KM	OFC ground wire 48 fibres with accessories	179724.00	KM	1887102.00	
		Earthing Materials				
20	23 No.	Pipe type earthing	2176.94	Each	50069.62	
21	7 No.	Counter poise earthing (120m length)	8166	Each	57162.00	
		Tower Accessories				
22	30 No.	Number plate	270.00	Each	8100.00	
23	30 No.	Danger Board	362.00	Each	10860.00	
24	60 No.	Phase plate(Set of three)	303.03	Each	18181.80	
25	60 No.	Circuit plate	303.03	Each	18181.80	
26	30 No.	Anti-climbing devices	10791	Each	323730.00	
27		TOTAL COST OF MATERIALS			100098395.83	
		TOWER FOUNDATIONS				
28	13 No.	DA type tower	629932	Each	8189116.00	
		0° to 2° Suspension tower				
29	4 No.	DB type tower	1450300	Each	5801200.00	
		2° to 15° Light angle tower				
30	4 No.	DC type tower	1951480	Each	7805920.00	
		15° to 30° Medium angle tower				
31	9 No.	DD type tower	2797616	Each	25178544.00	
		30° to 60° High angle & Dead end tower				
32		Tower protection works 15% on Foundation			7046217.00	
33		TOTAL COST OF FOUNDATION			54020997.00	
34		Erection charges(10% on cost of materials)			10009839.58	
		Transportation & Insurance charges (5% on cost of materials)			5004919.79	
35		Total amount			169134152.20	
36		Labour Welfare Fund 1.0% on Foundation & Erection Charges			640308.37	
		EPF at 13% on labour portion			4110370.99	
37		ESI at 3.25 % on labour portion			1027592.75	
		Total			174912424.31	

TAMILNADU TRANSMISSION CORPORATION LIMITED						
400 KV DC LINE ON DC TOWERS (WIND ZONE-4, TC-2) WITH TWIN MOOSE CONDUCTOR						
Sl. No.	Quantity	DESCRIPTION	Rate in Rs.	Per	Amount in Rs.	
38		GST @ 18% on total amount			31484236.38	
39		Total			206396660.68	
		Establishment & Supervision Charges at 15.0%			30959499.00	
40		Total			237356159.68	
		Contingencies at 1%			2373561.60	
46		Land compensation			19470800.00	
47	10 KM	Tree/Crop compensation	2000000	KM	20000000.00	
48		TOTAL COST PER		10 KM	279200521.28	
49		TOTAL COST PER 1 KM			27920052.13	
		(Rounding to nearest 1000)	SAY		27921000.00	
		COST PER KM IN LAKHS			279.21	

TAMILNADU TRANSMISSION CORPORATION LIMITED						
400 KV DC LINE ON DC TOWERS (WIND ZONE-2, TC-2) WITH TWIN MOOSE CONDUCTOR						
Sl. No.	Quantity	DESCRIPTION	Rate in Rs.	Per	Amount in Rs.	
1		Galvanised steel tower materials with extension part wherever necessary, and bolts and nutsetc.,				
	171.55	MT a) HT Steel	65999.00	MT	11322128.45	
	306.90	MT b) MS	63499.00	MT	19487843.10	
	17.8	MT c) Ordinary Bolts & nuts	90000	MT	1602000.00	
	0	MT d)Anti-theft bolts and nuts	90000	MT	0.00	
2	3097	No. 120 KN Disc Insulators	481.00	No.	1489657.00	
3	9988	No. 160 KN Disc Insulators	662	No.	6612056.00	
		Conductor & Earth wire accessories				
4	78	Set Single I suspension string for Twin ACSR Moose	19271.00	Set	1503138.00	
5	54	Set Single I suspension pilot string with counter weight	40988.00	Set	2213352.00	
6	204	Set Double Tension string	22332	Set	4555728.00	
7	408	Set Vibration Damper for Twin ACSR Moose	1318.00	Set	537744.00	
8	1273	Set Bundle spacer for Twin Moose	1484.00	Set	1889132.00	
9	306	Set Rigid Spacer for conductor ACSR Moose 3 Nos. per jumper	892.00	Set	272952.00	
10	60	Set Midspan compression joint for Moose	1000.00	Set	60000.00	
11	30	No. Repair sleeve for Moose	423.00	No.	12690.00	
12	13	Set Suspension clamp for Earth wire 7/3.66mm	719.00	Set	9347.00	
13	34	Set Tension Clamp for Earth wire 7/3.66mm	726.00	Set	24684.00	
14	5	Set Midspan compression joint for GS Earth wire 7/3.66mm	353	Set	1765.00	
15	68	No. Vibration Damper for Earth wire 7/3.66mm	635.33	Set	43202.44	
16	47	No. Flexible copper bond for earthing	935.00	No.	43945.00	
17	121.8	KM ACSR Moose conductors 1.5 % sag	309475.00	KM	37694055.00	
18	10.1	KM GS EARTH WIRE 7/3.66mm 1.0% sag	67675.00	KM	683517.50	
19	10.5	KM OFC ground wire 48 fibres with accessories	179724.00	KM	1887102.00	
		Earthing Materials				
20	23	No. Pipe type earthing	2176.94	Each	50069.62	
21	7	No. Counter poise earthing (120m length)	8166	Each	57162.00	
		Tower Accessories				
22	30	No. Number plate	270.00	Each	8100.00	
23	30	No. Danger Board	362.00	Each	10860.00	
24	60	No. Phase plate(Set of three)	303.03	Each	18181.80	
25	60	No. Circuit plate	303.03	Each	18181.80	
26	30	No. Anti-climbing devices	10791	Each	323730.00	
27		TOTAL COST OF MATERIALS			92432323.71	
		TOWER FOUNDATIONS				
28	13	No. DA type tower	436084	Each	5669092.00	
		0° to 2° Suspension tower				
29	4	No. DB type tower	786214	Each	3144856.00	
		2° to 15° Light angle tower				
30	4	No. DC type tower	1004705	Each	4018820.00	
		15° to 30° Medium angle tower				
31	9	No. DD type tower	1729238	Each	15563142.00	
		30° to 60° High angle & Dead end tower				
32		Tower protection works 15% on Foundation			4259386.50	
33		TOTAL COST OF FOUNDATION			32655296.50	
34		Erection charges(10% on cost of materials)			9243232.37	
		Transportation & Insurance charges (5% on cost of materials)			4621616.19	
35		Total amount			138952468.77	

TAMILNADU TRANSMISSION CORPORATION LIMITED					
400 KV DC LINE ON DC TOWERS (WIND ZONE-2, TC-2) WITH TWIN MOOSE CONDUCTOR					
Sl. No.	Quantity	DESCRIPTION	Rate in Rs.	Per	Amount in Rs.
36		Labour Welfare Fund 1.0% on Foundation			418985.29
		EPF at 13% on labour portion			2899695.63
37		ESI at 3.25 % on labour portion			724923.91
		Total			142996073.59
38		GST @ 18% on total amount			25739293.25
		Total			168735366.83
39		Establishment & Supervision Charges at 15.0%			25310305.00
40		Total			194045671.83
45		Contingencies (1% on Material, Foundation & erection)			1940456.72
46		Land compensation			19470800.00
47	10 KM	Tree/Crop compensation	2000000	KM	20000000.00
48		TOTAL COST PER		10 KM	235456928.55
49		TOTAL COST PER 1 KM			23545692.86
		(Rounding to nearest 1000)	SAY		23546000.00
		COST PER KM IN LAKHS			235.46

TAMILNADU TRANSMISSION CORPORATION LIMITED						
400 KV DC LINE ON DC TOWERS (WIND ZONE-5, TC-1) WITH TWIN MOOSE CONDUCTOR						
Sl. No.	Quantity	DESCRIPTION	Rate in Rs.	Per	Amount in Rs.	
1		Galvanised steel tower materials with extension part wherever necessary, and bolts and nutsetc.,				
	456.03	MT a) HT Steel	65999.00	MT	30097523.97	
	181.92	MT b) MS	63499.00	MT	11551738.08	
	21.7	MT c) Ordinary Bolts & nuts	90000	MT	1953000.00	
	0	MT d)Anti-theft bolts and nuts	90000	MT	0.00	
2	3097	No. 120 KN Disc Insulators	481.00	No.	1489657.00	
3	9988	No. 160 KN Disc Insulators	662	No.	6612056.00	
		Conductor & Earth wire accessories				
4	78	Set Single I suspension string for Twin ACSR Moose	19271.00	Set	1503138.00	
5	54	Set Single I suspension pilot string with counter weight	40988.00	Set	2213352.00	
6	204	Set Double Tension string	22332.00	Set	4555728.00	
7	408	Set Vibration Damper for Twin ACSR Moose	1318.00	Set	537744.00	
8	1273	Set Bundle spacer for Twin Moose	1484.00	Set	1889132.00	
9	306	Set Rigid Spacer for conductor ACSR Moose 3 Nos. per jumper	892.00	Set	272952.00	
10	60	Set Midspan compression joint for Moose	1000.00	Set	60000.00	
11	30	No. Repair sleeve for Moose	423.00	No.	12690.00	
12	13	Set Suspension clamp for Earth wire 7/3.66mm	719.00	Set	9347.00	
13	34	Set Tension Clamp for Earth wire 7/3.66mm	726.00	Set	24684.00	
14	5	Set Midspan compression joint for GS Earth wire 7/3.66mm	353	Set	1765.00	
15	68	No. Vibration Damper for Earth wire 7/3.66mm	635.33	Set	43202.44	
16	47	No. Flexible copper bond for earthing	935.00	No.	43945.00	
17	121.8	KM ACSR Moose conductors 1.5 % sag	309475.00	KM	37694055.00	
18	10.1	KM GS EARTH WIRE 7/3.66mm 1.0% sag	67675.00	KM	683517.50	
19	10.5	KM OFC ground wire 48 fibres with accessories	179724.00	KM	1887102.00	
		Earthing Materials				
20	23	No. Pipe type earthing	2176.94	Each	50069.62	
21	7	No. Counter poise earthing (120m length)	8166	Each	57162.00	
		Tower Accessories				
22	30	No. Number plate	270.00	Each	8100.00	
23	30	No. Danger Board	362.00	Each	10860.00	
24	60	No. Phase plate(Set of three)	303.03	Each	18181.80	
25	60	No. Circuit plate	303.03	Each	18181.80	
26	30	No. Anti-climbing devices	10791	Each	323730.00	
27		TOTAL COST OF MATERIALS			103622614.21	
		TOWER FOUNDATIONS				
28	13	No. DA type tower	639210	Each	8309730.00	
		0° to 2° Suspension tower				
29	4	No. DB type tower	1434672	Each	5738688.00	
		2° to 15° Light angle tower				
30	4	No. DC type tower	1818251	Each	7273004.00	
		15° to 30° Medium angle tower				
31	9	No. DD type tower	2688895	Each	24200055.00	
		30° to 60° High angle & Dead end tower				
32		Tower protection works 15% on Foundation			6828221.55	
33		TOTAL COST OF FOUNDATION			52349698.55	
34		Erection charges(10% on item 27)			10362261.42	
		Transportation & Insurance charges (5% on Item 27)			5181130.71	
35		Total amount			171515704.89	
36		Labour Welfare Fund 1.0% on Foundation & Erection Charges			627119.60	
		EPF at 13% on labour portion			4069278.31	
37		ESI at 3.25 % on labour portion			1017319.58	

TAMILNADU TRANSMISSION CORPORATION LIMITED						
400 KV DC LINE ON DC TOWERS (WIND ZONE-5, TC-1) WITH TWIN MOOSE CONDUCTOR						
Sl. No.	Quantity	DESCRIPTION	Rate in Rs.	Per	Amount in Rs.	
		Total			177229422.38	
38		GST @ 18% on total amount			31901296.03	
		Total			209130718.41	
1		Establishment & Supervision Charges at 15%			31369608.00	
		TOTAL COST			240500326.41	
45		Contingencies (1% on Material, Foundation & erection)			2405003.26	
46		Land compensation			19470800.00	
47	10 KM	Tree/Crop compensation	2000000	KM	20000000.00	
48		TOTAL COST PER		10 KM	282376129.67	
49		TOTAL COST PER 1 KM			28237612.97	
		(Rounding to nearest 1000)	SAY		28238000.00	
		COST PER KM IN LAKHS				282.38

TAMILNADU TRANSMISSION CORPORATION LIMITED						
400 KV DC LINE ON DC TOWERS (WIND ZONE 2, TC 2) WITH QUAD MOOSE CONDUCTOR						
Sl. No.	Quantity	Unit	Description	Rate in Rs.	Per	Amount in Rs.
1			Galvanised steel tower materials with extension part wherever necessary, and bolts and nutsetc.,			
	457.78	MT	a) HT Steel	65999.00	MT	30213022.22
	380.25	MT	b) MS	63499.00	MT	24145494.75
	37.04	MT	c) Ordinary Bolts & nuts	90000	MT	3333600.00
	0	MT	d)Anti-theft bolts and nuts	90000	MT	0.00
2	4927	No.	120 KN Disc Insulators	481.00	No.	2369887.00
3	19976	No.	160 KN Disc Insulators	662	No.	13224112.00
			Conductor & Earth wire accessories			
4	78	Set	Twin I suspension string for QUAD ACSR Moose	16788.00	Set	1309464.00
5	54	Set	Single I suspension pilot string with counter weight	28984.00	Set	1565136.00
6	204	Set	QUAD Tension string	54248.79	Set	11066753.16
7	1091	Set	Spacer Damper for Quad ACSR Moose 6 Nos. for 330m	2019.00	Set	2202729.00
8	306	Set	Rigid Spacer for conductor ACSR Moose 3 Nos. per jumper	2219.00	Set	679014.00
9	120	Set	Midspan compression joint for Moose	1000.00	Set	120000.00
10	60	No.	Repair sleeve for Moose	423.00	No.	25380.00
11	13	Set	Suspension clamp for Earth wire 7/3.66mm	719.00	Set	9347.00
12	34	Set	Tension Clamp for Earth wire 7/3.66mm	726.00	Set	24684.00
13	5	Set	Midspan compression joint for GS Earth wire 7/3.66mm	353	Set	1765.00
14	68	No.	Vibration Damper for Earth wire 7/3.66mm	635.33	Set	43202.44
15	47	No.	Flexible copper bond for earthing	935.00	No.	43945.00
16	243.6	KM	ACSR Moose conductors 1.5 % sag	309475.00	KM	75388110.00
17	10.1	KM	GI EARTH WIRE 7/3.66mm 1.0 % sag	67675.00	KM	683517.50
18	10.5	KM	OFC ground wire 48 fibres with accesso	179724.00	KM	1887102.00
			Earthing Materials			
19	23	No.	Pipe type earthing	2176.94	No.	50069.62
20	7	No.	Counter poise earthing (120m length)	8166	No.	57162.00
			Tower Accessories			
21	30	No.	Number plate	270.00	No.	8100.00
22	30	No.	Danger Board	362	No.	10860.00
23	60	No.	Phase plate(Set of three)	303.03	No.	18181.80
24	120	No.	Circuit plate	303.03	No.	36363.60

TAMILNADU TRANSMISSION CORPORATION LIMITED						
400 KV DC LINE ON DC TOWERS (WIND ZONE 2, TC 2) WITH QUAD MOOSE CONDUCTOR						
Sl. No.	Quantity	Unit	Description	Rate in Rs.	Per	Amount in Rs.
25	30	No.	Anti-climbing devices	10791	No.	323730.00
26			TOTAL COST OF MATERIALS			168840732.09
			TOWER FOUNDATIONS			
27	13	No.	DA type tower	667032	No.	8671416.00
			0° to 2° Suspension tower			
28	4	No.	DB type tower	2024028	No.	8096112.00
			2° to 15° Light angle tower			
29	4	No.	DC type tower	2564454	No.	10257816.00
			15° to 30° Medium angle tower			
30	9	No.	DD type tower	3027201	No.	27244809.00
			30° to 60° High angle & Dead end tower			
31			Tower protection works 15% on foundation			4053801.60
32			TOTAL FOUNDATION COST			58323954.60
33			Erection charges(10% on cost of materials)			16884073.21
			Transportation & Insurance charges (5% on cost of materials)			8442036.60
34			Total amount			252490796.50
			Labour Welfare Fund 1.0% on Foundation & Erection Charges			752080.28
35			EPF at 13% on labour portion			5227775.16
			ESI at 3.25 % on labour portion			1306943.79
36			Total			259777595.73
37			GST @ 18% on total amount			46759967.23
#			Total			306537562.96
#			Establishment & Supervision Charges at 15.0% on item 39			45980634.44
#			TOTAL COST			352518197.40
44			Contingencies (1% on Foundation, material & Erection charges)			3525181.97
45			Land compensation			19470800.00
46	10	KM	Tree/Crop compensation	2000000	KM	20000000.00
47			TOTAL COST PER	10	KM	395514179.38
48			TOTAL COST PER 1 KM			39551417.94
			(Rounding to nearest 1000)	SAY		39552000.00
			COST PER KM IN LAKHS			395.52

TAMILNADU TRANSMISSION CORPORATION LIMITED						
400 KV DC LINE ON DC TOWERS (WIND ZONE 4 TC 2) WITH QUAD MOOSE CONDUCTOR						
Sl. No	Quantity	Unit	Description	Rate in Rs.	Per	Amount in Rs.
1			Galvanised steel tower materials with extension part wherever necessary, and bolts and nutsetc.,			
	575.96	MT	a) HT Steel	65999.00	MT	38012784.04
	396.73	MT	b) MS	63499.00	MT	25191958.27
	40.53	MT	c) Ordinary Bolts & nuts	90000	MT	3647700.00
	0	MT	d)Anti-theft bolts and nuts	90000	MT	0.00
2	4927	No.	120 KN Disc Insulators	481.00	No.	2369887.00
3	19976	No.	160 KN Disc Insulators	662	No.	13224112.00
			Conductor & Earth wire accessories			
4	78	Set	Twin I suspension string for QUAD ACSR Moose	16788.00	Set	1309464.00
5	54	Set	Single I suspension pilot string with counter weight	28984.00	Set	1565136.00
6	204	Set	QUAD Tension string	54248.79	Set	11066753.16
7	1091	Set	Spacer Damper for Quad ACSR Moose 7 Nos. for 400m	2019.00	Set	2202729.00
8	306	Set	Rigid Spacer for conductor ACSR Moose 3 Nos. per jumper	2219.00	Set	679014.00
9	120	Set	Midspan compression joint for Moose	1000.00	Set	120000.00
10	60	No.	Repair sleeve for Moose	423.00	No.	25380.00
11	13	Set	Suspension clamp for Earth wire 7/3.66mm	719.00	Set	9347.00
12	34	Set	Tension Clamp for Earth wire 7/3.66mm	726.00	Set	24684.00
13	5	Set	Midspan compression joint for GS Earth wire 7/3.66mm	353	Set	1765.00
14	68	No.	Vibration Damper for Earth wire 7/3.66mm	635.33	Set	43202.44
15	47	No.	Flexible copper bond for earthing	935.00	No.	43945.00
16	243.6	KM	ACSR Moose conductors 1.5% sag	309475.00	KM	75388110.00
17	10.1	KM	GI EARTH WIRE 7/3.66mm 1.0% sag	67675.00	KM	683517.50
18	10.5	KM	OFC ground wire 48 fibres with accesso	179724.00	KM	1887102.00
			Earthing Materials			
19	23	No.	Pipe type earthing	2176.94	No.	50069.62
20	7	No.	Counter poise earthing (120m length)	8166	No.	57162.00
			Tower Accessories			
21	30	No.	Number plate	270.00	No.	8100.00
22	30	No.	Danger Board	362.00	No.	10860.00
23	60	No.	Phase plate(Set of three)	303.03	No.	18181.80
24	120	No.	Circuit plate	303.03	No.	36363.60

TAMILNADU TRANSMISSION CORPORATION LIMITED						
400 KV DC LINE ON DC TOWERS (WIND ZONE 4 TC 2) WITH QUAD MOOSE CONDUCTOR						
Sl. No	Quantity	Unit	Description	Rate in Rs.	Per	Amount in Rs.
25	30	No.	Anti-climbing devices	10791	No.	323730.00
26			TOTAL COST OF MATERIALS			178001057.43
			TOWER FOUNDATIONS			
27	13	No.	DA type tower	1192739	No.	15505607.00
			0° to 2° Suspension tower			
28	4	No.	DB type tower	2719211.00	No.	10876844.00
			2° to 15° Light angle tower			
29	4	No.	DC type tower	3269301.00	No.	13077204.00
			15° to 30° Medium angle tower			
30	9	No.	DD type tower	4062417.00	No.	36561753.00
			30° to 60° High angle & Dead end tower			
31			Tower protection works 15% on foundation			11403211.20
32			TOTAL COST ON FOUNDATION			87424619.20
33			Erection charges(10% on cost of materials)			17800105.74
			Transportation & Insurance charges (5% on cost of materials)			8900052.87
34			Total amount			292125835.24
35			Labour Welfare Fund 1.0% on Foundation & Erection Charges			1052247.25
			EPF at 13 % on labour portion			6860093.94
36			ESI at 3.25 % on labour portion			1715023.49
			Total			301753199.93
37			GST @ 18% on total amount			54315575.99
38			Total			356068775.91
39			Establishment & Supervision Charges at 15.0%			53410316.39
#			TOTAL COST			409479092.30
44			Contingencies 1% on Foundation Erection and Materials			4094790.92
45			Land compensation			19470800.00
46	10	KM	Tree/Crop compensation	2000000	KM	20000000.00
47			TOTAL COST PER	10	KM	453044683.22
48			TOTAL COST PER 1 KM			45304468.32
			(Rounding to nearest 1000)	SAY		45305000.00
			COST PER KM IN LAKHS			453.05

TAMILNADU TRANSMISSION CORPORATION LIMITED
400 KV DC LINE ON DC TOWERS (WIND ZONE 5, TC 1) WITH QUAD MOOSE CONDUCTOR

Sl. No	Quantity	Unit	Description	Rate in Rs.	Per	Amount in Rs.
1			Galvanised steel tower materials with extension part wherever necessary, and bolts and nutsetc.,			
	718.49	MT	a) HT Steel	65999.00	MT	47419621.51
	368.8	MT	b) MS	63499.00	MT	23418431.20
	40.5	MT	c) Ordinary Bolts & nuts	90000	MT	3645000.00
	0	MT	d)Anti-theft bolts and nuts	90000	MT	0.00
2	4927	No.	120 KN Disc Insulators	481.00	No.	2369887.00
3	19976	No.	160 KN Disc Insulators	662	No.	13224112.00
			Conductor & Earth wire accessories			
4	78	Set	Twin I suspension string for QUAD ACSR Moose	16788.00	Set	1309464.00
5	54	Set	Single I suspension pilot string with counter weight	28984.00	Set	1565136.00
6	204	Set	QUAD Tension string	54248.79	Set	11066753.16
7	1091	Set	Spacer Damper for Quad ACSR Moose 7 Nos. for 400m	2019.00	Set	2202729.00
8	306	Set	Rigid Spacer for conductor ACSR Moose 3 Nos. per jumper	2219.00	Set	679014.00
9	120	Set	Midspan compression joint for Moose	1000.00	Set	120000.00
10	60	No.	Repair sleeve for Moose	423.00	No.	25380.00
11	13	Set	Suspension clamp for Earth wire 7/3.66mm	719.00	Set	9347.00
12	34	Set	Tension Clamp for Earth wire 7/3.66mm	726.00	Set	24684.00
13	5	Set	Midspan compression joint for GS Earth wire 7/3.66mm	353	Set	1765.00
14	68	No.	Vibration Damper for Earth wire 7/3.66mm	635.33	Set	43202.44
15	47	No.	Flexible copper bond for earthing	935	No.	43945.00
16	243.6	KM	ACSR Moose conductors 1.5% sag	309475.00	KM	75388110.00
17	10.1	KM	GI EARTH WIRE 7/3.66mm 1.0% sag	67675.00	KM	683517.50
18	10.5	KM	OFC ground wire 48 fibres with accessories	179724.00	KM	1887102.00
			Earthing Materials			
19	23	No.	Pipe type earthing	2176.94	No.	50069.62
20	7	No.	Counter poise earthing (120m length)	8166	No.	57162.00
			Tower Accessories			
21	30	No.	Number plate	270.00	No.	8100.00
22	30	No.	Danger Board	362.00	No.	10860.00
23	60	No.	Phase plate(Set of three)	303.03	No.	18181.80
24	120	No.	Circuit plate	303.03	No.	36363.60
25	30	No.	Anti-climbing devices	10791	No.	323730.00

TAMILNADU TRANSMISSION CORPORATION LIMITED
400 KV DC LINE ON DC TOWERS (WIND ZONE 5, TC 1) WITH QUAD MOOSE CONDUCTOR

Sl. No	Quantity	Unit	Description	Rate in Rs.	Per	Amount in Rs.
26			TOTAL COST OF MATERIALS			185631667.83
			TOWER FOUNDATIONS			
27	13	No.	DA type tower	1251593	No.	16270709.00
			0° to 2° Suspension tower			
28	4	No.	DB type tower	2733073	No.	10932292.00
			2° to 15° Light angle tower			
29	4	No.	DC type tower	3473646	No.	13894584.00
			15° to 30° Medium angle tower			
30	9	No.	DD type tower	5213456	No.	46921104.00
			30° to 60° High angle & Dead end tower			
31			Tower protection works 15% on foundation			13202803.35
32			TOTAL COST ON FOUNDATION			101221492.35
33			Erection charges(10% on cost of materials)			18563166.78
			Transportation & Insurance charges (5% on cost of materials)			9281583.39
34			Total amount			314697910.35
35			Labour Welfare Fund 1.0% on Foundation & Erection Charges			1197846.59
			EPF at 13% on labour portion			7676729.28
36			ESI at 3.25 % on labour portion			1919182.32
			Total			325491668.55
37			GST @ 18%			58588500.34
38			Total			384080168.89
			Establishment & Supervision Charges at 15.0%			57612025.33
#			TOTAL COST			441692194.22
44			Contingencies 1% on Foundation Erection and Materials			4416921.94
45			Land compensation			19470800.00
46	10	KM	Tree/Crop compensation	2000000	KM	20000000.00
47			TOTAL COST PER	10	KM	485579916.17
48			TOTAL COST PER 1 KM			48557991.62
			(Rounding to nearest 1000)	SAY		48558000.00
			COST PER KM IN LAKHS			485.58

TAMILNADU TRANSMISSION CORPORATION LIMITED						
400 KV DOUBLE CIRCUITS LINE ON MC TOWERS (WIND ZONE-5, TC-1) WITH TWIN MOOSE CONDUCTOR						
Sl. No.	Quantity		DESCRIPTION	Rate in Rs.	Per	Amount in Rs.
1			Galvanised steel tower materials with extension part wherever necessary, and bolts and nutsetc.,			
1511.69	MT	HT STEEL		65999.00	MT	99,770,028.31
501.78	MT	MS STEEL		63499.00	MT	31,862,528.22
78.94	MT	c) Ordinary Bolts & nuts		90000	MT	7,104,600.00
0	MT	d)Anti-theft bolts and nuts		90000	MT	-
2	4364	No.	120 KN Disc Insulators	481.00	No.	2,099,084.00
3	9988	No.	160 KN Disc Insulators	662	No.	6,612,056.00
			Conductor & Earth wire accessories			
4	78	Set	Single I suspension string for Twin ACSR Moose	19271.00	Set	1,503,138.00
5	108	Set	Single I suspension pilot string with counter weight	40988.00	Set	4,426,704.00
6	204	Set	Double Tension string	22332.00	Set	4,555,728.00
7	408	Set	Vibration Damper for Twin ACSR Moose	1318.00	Set	537,744.00
8	1273	Set	Bundle spacer for Twin Moose	1484.00	Set	1,889,132.00
9	306	Set	Rigid Spacer for conductor ACSR Moose 3 Nos. per jumper	892.00	Set	272,952.00
10	60	Set	Midspan compression joint for Moose	1000.00	Set	60,000.00
11	30	No.	Repair sleeve for Moose	423.00	No.	12,690.00
12	13	Set	Suspension clamp for Earth wire 7/3.66mm	719.00	Set	9,347.00
13	34	Set	Tension Clamp for Earth wire 7/3.66mm	726.00	Set	24,684.00
14	5	Set	Midspan compression joint for GS Earth wire 7/3.66mm	353	Set	1,765.00
15	68	No.	Vibration Damper for Earth wire 7/3.66mm	635.33	Set	43,202.44
16	47	No.	Flexible copper bond for earthing	935.00	No.	43,945.00
17	121.8	KM	ACSR Moose conductors 1.5 % sag	309475.00	KM	37,694,055.00
18	10.10	KM	GI EARTH WIRE 7/3.66mm 1.0% sag	67675.00	KM	683,517.50
19	10.5	KM	OFC ground wire 48 wires with accessories	179724.00	KM	1,887,102.00
			Earthing Materials			
20	23	No.	Pipe type earthing	2176.94	No.	50,069.62
21	7	No.	Counter poise earthing (120m length)	8166	No.	57,162.00
			Tower Accessories			
22	30	No.	Number plate	270.00	No.	8,100.00
23	30	No.	Danger Board	362.00	No.	10,860.00
24	60	No.	Phase plate(Set of three)	303.03	No.	18,181.80
25	60	No.	Circuit plate	303.03	No.	18,181.80
26	30	No.	Anti-climbing devices	10791	No.	323,730.00
27			TOTAL COST ON MATERIALS			201,580,287.69
			TOWER FOUNDATIONS			
28	13	No.	QA type tower	2326950	No.	30,250,350.00
			0° to 2° Suspension tower			
29	4	No.	QB type tower	4440673	No.	17,762,692.00
			2° to 15° Light angle tower			
30	4	No.	QC type tower	5767601	No.	23,070,404.00
			15° to 30° Medium angle tower			
31	9	No.	QD type tower	8414751	No.	75,732,759.00
			30° to 60° High angle & Dead end tower			
32			Tower protection works 15% on Foundation cost			22,022,430.75
33			TOTAL COST OF FOUNDATION			168,838,635.75
34			Erection charges(10% on cost of materials)			20,158,028.77
			Transportation & Insurance charges (5% on cost of materials)			10,079,014.38

TAMILNADU TRANSMISSION CORPORATION LIMITED						
400 KV DOUBLE CIRCUITS LINE ON MC TOWERS (WIND ZONE-5, TC-1) WITH TWIN MOOSE CONDUCTOR						
Sl. No.	Quantity		DESCRIPTION	Rate in Rs.	Per	Amount in Rs.
35			Total amount			400,655,966.59
36			Labour Welfare Fund 1.0% on Foundation &			1,889,966.65
			EPF at 13% on labour portion			11400152.80
37			ESI at 3.25 % on labour portion			2850038.20
38			Total			416,796,124.24
39			GST @ 18% on total amount			75023302.36
40			Total			491,819,426.60
41			Establishment & Supervision Charges at 15.0%			73,772,913.99
			TOTAL COST			565592340.59
45			Contingencies (1% on Material, Erection & Foundation charges			5,655,923.41
46			Land compensation			19470800.00
47	10	KM	Tree/Crop compensation	2000000	KM	20,000,000.00
48			TOTAL COST PER		10 KM	610719064.00
49			TOTAL COST PER 1 KM			61071906.40
			(Rounding to nearest 1000)	SAY		61,072,000.00
			COST PER KM IN LAKHS			610.72

TAMILNADU TRANSMISSION CORPORATION LIMITED						
400 KV 4 CIRCUITS LINE ON MC TOWERS (WIND ZONE-5, TC-1) WITH TWIN MOOSE CONDUCTOR						
Sl. No.	Quantity		DESCRIPTION	Rate in Rs.	Per	Amount in Rs.
1			Galvanised steel tower materials with extension part wherever necessary, and bolts and nutsetc.,			
	1511.69	MT	HT STEEL	65999.00	MT	99,770,028.31
	501.78	MT	MS STEEL	63499.00	MT	31,862,528.22
	78.94	MT	c) Ordinary Bolts & nuts	90000	MT	7,104,600.00
	0	MT	d)Anti-theft bolts and nuts	90000	MT	-
2	6194	No.	120 KN Disc Insulators	481.00	No.	2,979,314.00
3	19976	No.	160 KN Disc Insulators	662	No.	13,224,112.00
			Conductor & Earth wire accessories			
4	156	Set	Single I suspension string for Twin ACSR Moose	19271.00	Set	3,006,276.00
5	108	Set	Single I suspension pilot string with counter weight	40988.00	Set	4,426,704.00
6	408	Set	Double Tension string	22332.00	Set	9,111,456.00
7	816	Set	Vibration Damper for Twin ACSR Moose	1318.00	Set	1,075,488.00
8	2546	Set	Bundle spacer for Twin Moose	1484.00	Set	3,778,264.00
9	612	Set	Rigid Spacer for conductor ACSR Moose 3 Nos. per jumper	892.00	Set	545,904.00
10	120	Set	Midspan compression joint for Moose	1000.00	Set	120,000.00
11	60	No.	Repair sleeve for Moose	423.00	No.	25,380.00
12	13	Set	Suspension clamp for Earth wire 7/3.66mm	719.00	Set	9,347.00
13	34	Set	Tension Clamp for Earth wire 7/3.66mm	726.00	Set	24,684.00
14	5	Set	Midspan compression joint for GS Earth wire 7/3.66mm	353	Set	1,765.00
15	68	No.	Vibration Damper for Earth wire 7/3.66mm	635.33	Set	43,202.44
16	47	No.	Flexible copper bond for earthing	935.00	No.	43,945.00
17	243.6	KM	ACSR Moose conductors 1.5 % sag	309475.00	KM	75,388,110.00
18	10.10	KM	GI EARTH WIRE 7/3.66mm 1.0% sag	67675.00	KM	683,517.50
19	10.5	KM	OFC ground wire 48 fibres with accessories	179724.00	KM	1,887,102.00
			Earthing Materials			
20	23	No.	Pipe type earthing	2176.94	No.	50,069.62
21	7	No.	Counter poise earthing (120m length)	8166	No.	57,162.00
			Tower Accessories			
22	30	No.	Number plate	270.00	No.	8,100.00
23	30	No.	Danger Board	362.00	No.	10,860.00
24	120	No.	Phase plated(Set of three)	303.03	No.	36,363.60
25	120	No.	Circuit plate	303.03	No.	36,363.60
26	30	No.	Anti-climbing devices	10791	No.	323,730.00
27			TOTAL COST ON MATERIALS			255,634,376.29
			TOWER FOUNDATIONS			
28	13	No.	QA type tower	2326950	No.	30,250,350.00
			0° to 2° Suspension tower			
29	4	No.	QB type tower	4440673	No.	17,762,692.00
			2° to 15° Light angle tower			
30	4	No.	QC type tower	5767601	No.	23,070,404.00
			15° to 30° Medium angle tower			
31	9	No.	QD type tower	8414751	No.	75,732,759.00
			30° to 60° High angle & Dead end tower			
32			Tower protection works 15% on Foundation cost			22,022,430.75
33			TOTAL COST OF FOUNDATION			168,838,635.75
34			Erection charges(10% on cost of materials)			25,563,437.63
			Transportation & Insurance charges (5% on cost of materials)			12,781,718.81

TAMILNADU TRANSMISSION CORPORATION LIMITED						
400 KV 4 CIRCUITS LINE ON MC TOWERS (WIND ZONE-5, TC-1) WITH TWIN MOOSE CONDUCTOR						
Sl. No.	Quantity		DESCRIPTION	Rate in Rs.	Per	Amount in Rs.
35			Total amount			462,818,168.48
36			Labour Welfare Fund 1.0% on Foundation & Erection Charges			1,944,020.73
			EPF at 13% on labour portion			12102855.95
37			ESI at 3.25 % on labour portion			3025713.99
38			Total			479,890,759.16
39			GST @ 18% on total amount			86380336.65
40			Total			566,271,095.80
41			Establishment & Supervision Charges at 15.0%			84,940,664.37
42			Total			651,211,760.17
45			Contingencies (1% on Material, Erection & Foundation charges)			6,512,117.60
46			Land compensation			19470800.00
47	10	KM	Tree/Crop compensation	2000000	KM	20000000.00
48			TOTAL COST PER		10 KM	697194677.78
49			TOTAL COST PER 1 KM			69719467.78
			(Rounding to nearest 1000)	SAY		69,720,000.00
			COST PER KM IN LAKHS			697.20

SAVE ENERGY

TAMILNADU GENERATION & DISTRIBUTION CORPORATION LIMITED

From

Er.N.BALAJI, M.E.,
Chief Engineer/Planning & RC,
144, Anna Salai,
Chennai.2

To

All the Chief Engineers/Distribution Regions &
All the Superintending Engineers/EDCS

Lr.No.CE/PLG&RC/SE/RE&I(D)/EE/PC-I/A2/F.cd 20-21/D. 93/2020, Dt. 30.04.2021

Sir,

Sub: TANGEDCO – Cost Data 2021-22 – Rates for Sub Station Materials,
Personnel Protective Equipments , Labour, Transport and Sample
Estimates – Communicated – Regarding

Ref : Lr.No.CE/PLG&RC/SE/RE&I(D)/EE/PC-I/A2/F.CD 21-22/D.74/2021,
Dt. 31.03.2021

The Cost data 2021-22 rates has been prepared for materials and the same
was communicated to field vide this office letter dt.31.03.2021 (ref-1). Further the
same was sent through email on 31.03.2021 @ 17.45 Hrs from sereid mail.

In addition to the above, rates of Sub Station Materials, Personnel Protective
Equipments, Labour and Transport charges and sample estimates have been
prepared and the soft copies of the same are sent herewith .

The above rates may be circulated to all the officers under your control.

The receipt of this letter may be acknowledged.

Encl: Soft copies of (i) Sub Station Materials,
(ii) Personnel Protective Equipments,
(iii). Labour Charges (iv).Transport Charges
and (vi) Sample estimates for the
year 2021-22


30/4/21

for CHIEF ENGINEER/PLANNING&RC
Copy submitted to Director (Distribution)/TANGEDCO: For kind information please.

Copy submitted to Director(Finance)/TANGEDCO
Copy to CE/IT/TANGEDCO
Copy to CFC/General/TANGEDCO
Copy to CE/MM/TANGEDCO
Copy to CE/Civil/Design/TANGEDCO
Copy to CE/Transmission/TANTRANSCO

SAFETY ITEMS

Item code No	Description	Unit	Recommended rate for 2021-22 (in Rs.)
PERSONNEL PROTECTIVE EQUIPMENTS			
504-613	Rubber hand gloves	Set	490
502-160	Rain Coat	No	576
206-170	Rechargeable torch light	No	513
200-745	Safety Belt	No	1790
505-201	20 mm White cotton belt rope	No	168
505-203	18mm Cotton Belt rope	No	155
505-200	16mm Cotton Belt rope	No	208
505-195	12mm White cotton belt rope	No	217
505-182	Manila rope 3/4"	No	648
505-183	Manila rope 1"	No	648
502-174	Rescue Jacket	No	748
502-175	Hi-Visibility Reflective Safety Jacket	No	979
	Fluorescent Orange Jacket	No	258
502-176	Safety Shoe oil Proof	No	1173
	Fire Rescue Equipments		
200-449	6 KG ABC type	No	1705
200-429	6.5 Kg Co2 type	No	7500
200-441	6.8 Kgs. Co2 type	No	9709
200-431	9 Kgs. DCP (Dry Chemical Powder) Type	No	4097
200-433	9L Foam type	No	2769
200-480	10L Fire Bucket	No	313
200-447	25 Kgs. DCP Type Trolley mounted	No	11419

Item code No	Description	Unit	Recommended rate for 2021-22 (in Rs.)
	ROPE		
505-192	Polypropylene rope 1/2" dia (12 mm)	No	190
505-193	Polypropylene rope 3/4" dia (18 mm)	No	216
505-189	Polypropylene rope (20 mm)	No	193
505-191	Polypropylene rope 1" dia (25 mm)	No	182
505-194	Polypropylene rope (32 mm)	No	215

**NEWLY ADDED ITEMS FOR 11 KV RMUs IN COST DATA 2021-
22**

Sl. No.	Description	Unit	Recommend ed rate for 2021-22 (in Rs.)
	<u>Items for RMUs</u>		
1	11 KV, 3 x 300 sq.mm / 3 x 120 sq.mm Indoor termination kit for RMU including insulating boots (3 Nos.) (Rs.2950+3186=6136)	Nos.	6136
2	11 KV, 3 x 300 sq.mm / 3 x 120 sq.mm Touch Proof termination kit for RMU	Nos.	19470
3	11 KV Distribution transformer structure with associated materials / Structure materials for DT (Concrete plinth)	Each	110939
4	Materials for earthing including earth spike, GI pipe and GI Flats (For RMU and DT)	Each	41539
5	Earthing and Plinthing for Pillar Box	Each	8114

NEW SUB STATION MATERIALS

SI No.	Item Code No.	Description	Unit	Recommended rate for 2021-22 (in Rs.)
1		33 KV Breakers (Outdoor)		
i	023-076	33 KV VCB outdoor	No	252874
2		33 KV Breakers (Indoor)		
i	023-230	33 KV VCB Indoor (Transformer HV)	No	1195930
ii		33 KV VCB Indoor (Transformer LV)	No	1290330
iii	023-231	33 KV VCB Indoor (feeder)	No	1066130
iv	023-232	33 KV VCB Indoor (Bus coupler)	No	1465560
v		33 KV Bus adapter	No	195414
vi		33 KV Indoor GIS panel (Transformer HV)	No	3117817
vii		33 KV Indoor GIS panel (for incoming feeder)	No	3791998
viii		33 KV Indoor GIS panel with Bus raiser suitable for Bus Sectionaliser control	No	4188464
3		11 KV Breakers (Outdoor)		
i	023-078	11 KV VCB outdoor	No	137352
4		11 KV Breakers (Indoor)		
i	023-235	11 KV VCB Indoor (Transformer LV)	No	442500
ii	023-234	11 KV VCB Indoor (feeder)	No	381211
iii	023-233	11 KV VCB Indoor (Bus coupler)	No	396244
iv		11 KV Bus adapter	No	165893
v		11 KV GIS Indoor (Transformer LV)	No	2980597
vi		11 KV GIS Indoor (for outgoing Feeder)	No	3169258
vii		11 KV Indoor GIS panel with Bus raiser suitable for Bus Sectionaliser control	No	3792804
5		Power Transformers per Each		
i		33/11 KV, 16 MVA with OLTC	No	9536171
ii		33/11 KV, 8 MVA with OLTC	No	4599720
6		AC Panels		
i	023-229	AC Panel for 33 KV SS	No	81715
ii		AC Panel with autochangeover facility for 33 KV Indoor GIS SS	No	319676

SI No.	Item Code No.	Description	Unit	Recommended rate for 2021-22 (in Rs.)
7		DC Panels		
i	023-224	110 V DC ANNUNCIATION PANEL TYPE-A	No	70000
ii	023-225	110V DC Annunication Panel (Type B)	No	85668
iii	023-226	110V DC Distribution Panel (Indoor)	No	96961
iv		DC Panel with autochangeover facilityfor 33 KV Indoor GIS SS	No	236654
8		CONTROL & RELAY PANEL		
a		110 V DC C&R (Indoor)		
i	023-223	110V DC Indoor C&R Panel for GC Breaker	No	154707
ii	023-222	110V DC Indoor C&R Panel for LV Breaker	No	308317
iii		110V DC Indoor C & R Panel for Twin Feeder Breaker	No	224554
b		220 V C&R (Indoor)		
i		220 V DC Indoor C&R GC Panel	No	50613
ii		220 V DC C&R LV Panel	No	100394
iii		220 V DC C&R Twin Feeder	No	66639
9		CURRENT TRANSFORMERS		
a		33 KV Outdoor CT		
i	420-846	33 KV Outdoor CT 1200-600-300/ 1-1A	No	23130
ii	420-211	33 KV Outdoor CT (600-300-150/1-1A)	No	16319
b		11KV Indoor CT		
i		11 KV Indoor CT (900-600/1A)	No	35662
c		11KV Outdoor CT		
i	420-302	11 KV Outdoor CT 1200-600/1-1A	No	19824
ii	420-208	11 KV OUT DOOR CT 1200-600-300/1-1A	No	21122
iii	420-299	11 KV OUTDOOR CT 400-200-100/1-1A	No	17458
iv		11 KV OUTDOOR CT 400-200-100/1A	No	17995
v		11 KV Outdoor CT Ratio 400-200/1-1A	No	17395

SI No.	Item Code No.	Description	Unit	Recommended rate for 2021-22 (in Rs.)
vi		11 KV single phase oil filled self cooled outdoor Current Transformer 300/5A	No	30680
10		POTENTIAL TRANSFORMERS		
i		110 KV Outdoor PT	No	139240
ii		33 KV Outdoor PT (1 Phase)	No	23789
iii		11 KV Outdoor PT (3 Phase)	No	36226
iv		11KV single phase oil filled self cooled outdoor Potential Transformer	No	28320
11		BATTERIES		
a		12V BATTERIES		
i	023-558	12 V, 150 AH Tubular battery	No	13500
ii	045-401	12 V, 150 AH SMF battery	No	12300
b		30V BATTERIES		
i	023-212A	30V, 60 AH Battery with stand and all accessories	No	53408
ii	023-262	30V, 60 AH Battery complete set without stand	No	33664
iii	023-343	30V, 200 AH Tubular Lead acid stationery Battery in SAN container with stand and accessories	No	102400
c		48V BATTERIES		
i	023-877	48V, 400 AH Battery with stand	No	196728
ii	023-423	48V, 250 AH Battery with stand	No	167462
iii	023-422	48V, 120 AH Battery with stand	No	122831
d		110V BATTERIES		
i	023-214	110V, 120 AH Battery set Tubular Lead acid stationery Battery in SAN container with stand	No	292800
ii		110V, 120 AH Battery set without stand	No	285120
iii		110V, 300 AH Battery set with stand	No	448448
iv		110V, 300 AH Battery set without stand	No	452480

SI No.	Item Code No.	Description	Unit	Recommended rate for 2021-22 (in Rs.)
12		BATTERY CHARGERS		
a		12 V		
i	023-322	12 V/10 Amps charger	No	3117
b		30V		
i	023-300	30V/12 Amps battery charger (Manual)	No	35400
ii		30V / 40 A (Thyristor based)	No	53218
c		48V		
i		48V/120 Amps charger	No	284890
ii		48V/80 Amps charger	No	105020
iii	023-312	48V/40Amps charger	No	56640
iv	023-310	48V/20Amps charger	No	42480
d		110V		
i	023-305	110V/60Amps battery charger (Manual)	No	124785
ii		110V/60Amps battery charger (Automatic)	No	274281
iii	023-302	110V/24Amps battery charger (Manual)	No	42244
13		RELAYS		
i		Numerical version differential Relay	No	50445
ii		Numerical type non directional IDMT relay	No	7080
iii		Numerical non directional over current & Earth Fault Protection Relay	No	7323
iv		Numerical Non-Directional 3 Over Current and 1 Earth Fault (3 O/L + 1 E/L) Protection Relays with instantaneous high set 24-242 V DC Relay	No	31210
14		SHUNT CAPACITOR		
i		1 KVAR	No	470
ii		2 KVAR	No	539
iii		3 KVAR	No	614

SI No.	Item Code No.	Description	Unit	Recommended rate for 2021-22 (in Rs.)
iv		4 KVAR	No	662
v		5 KVAR	No	1260
vi		6 KVAR	No	1243
15		VARIOUS CAPACITIES OF CAPACITOR BANK CELLS		
i	021-458	264.5 KVAR / 7.3 KV	No	15924
ii		290 KVAR / 6.98 KV	No	18172
iii	021-649	386.13 KVAR/7.3 KV	No	22774
iv		184.5 KVAR/7.3 KV	No	11786
16		VACUUM INTERRUPTER		
i		11 KV	No	41227
ii		33 KV	No	47289

Estimate for laying 33KV,3x400 sqmm XLPE (SC) cable for a route length of 1 Kms by open cut method.

S.No	DESCRIPTION	QTY	RATE (in lakhs)	PER	AMOUNT (Rs. in lakhs)	
1	33KV,3x400 sq mm XLPE UG cable	1	Kms	23.182	Km	23.18
2	33KV, 3X400 sqmm HS straight joints	5	Nos	0.23895	Each	1.19
3	PVC pipe 200 mm	180	mtr	0.01666	mtr.	3.00
4	33KV RCC Cover slab	1680	Nos	0.00307	Nos.	5.16
5	33KV, 3X400 sqmm HS OD termination kits	1	No	0.07847	Each	0.08
6	33KV, 3X400 sqmm HS ID termination kits	1	No	0.06500	Each	0.07
	Cost of Materials				32.68	
	Contingencies 1%				0.33	
	Total Cost of Materials				33.00	
	Labour & Transport	1	Kms	10	Km	10.00
	Sub total-1				43.003	
	Estt. & Supervision charges 15%				6.45	
	Sub total-2				49.45	
	ESI @ 3.25% (Labour)				0.293	
	EPF 13% (Labour)				1.170	
	GST on labour & transport, ESI & EPF @ 18%				2.063	
	Road - cut charges **	1	Km	70	Km	70.00
	TOTAL (Rate for 1 Km.)				172.43	
Note ***: 1) The road cut charges adopted in the above sample estimate is based on the Chennai EDC rates for estimate purpose only. 2) Hence the rates may be adopted as prevailing in the concerned area and considering the type of the road.						

Estimate for laying 33KV,3x630 sqmm XLPE (SC) cable for a route length of 1 Km by open cut method.

S.No	DESCRIPTION	QTY		RATE (in lakhs)	PER	AMOUNT (Rs. in lakhs)
1	33KV,3x630 sq mm XLPE UG cable	1	Kms	44.840	Km	44.84
2	33KV,3X630 sqmm straight joints	5	Nos	0.6744	Nos.	3.37
3	PVC pipe 200mm	180	mtr	0.0167	mtr.	3.00
4	33KV RCC Cover slab	1680	Nos	0.00307	Nos.	5.16
5	33KV, 3x630 sqmm OD termination kits	1	No	0.21177	Each	0.21
6	33KV, 3x630 sqmm ID termination kits	1	No	0.18383	Each	0.18
	Cost of Materials					56.76
	Contingencies 1%					0.57
	Total Cost of Materials					57.33
	Labour & Transport	1	Km	15	Km	15.00
	Sub total-1					72.332
	Estt. & Supervision charges 15%					10.85
	Sub total-2					83.181
	ESI @ 3.25% (Labour)					0.439
	EPF 13% (Labour)					1.755
	GST on labour & transport, ESI & EPF @ 18%					3.095
	Road - cut charges **	1	Km	70	Km	70.00
	TOTAL (RATE FOR 1Km)					158.47

Note *:** 1) The road cut charges adopted in the above sample estimate is based on the Chennai EDC rates for estimate purpose only. 2) Hence the rates may be adopted as prevailing in the concerned area and considering the type of the road.

Estimate for laying of 3 runs of 33 KV, 1x630 sq.mm XLPE (SC) cable for a Route Length of 1 Kmtr using open cut method

SL.NO	DESCRIPTION	QTY		RATE Rs. IN LAKHS	PER	AMOUNT Rs. IN LAKHS
1	33 KV, 1X630 Sq.mm XLPE UG Cable	3	Kms	12.9600	km	38.88
2	33 KV, 1X630 sqmm Straight Joints	9	Nos.	0.09366	Each	0.84
3	PVC pipe 160mm	540	mtr	0.01054	Each	5.69
4	33 KV RCC Cover Slab	1680	Nos.	0.00307	Each	5.16
5	33 KV, 1X630 Sq.mm HS OD termination kits	3	Nos.	0.06714	Each	0.20
6	33 KV, 1X630 Sq.mm HS ID termination kits	3	Nos.	0.03046	Each	0.09
	Cost of Materials					50.86
	Contingencies 1%					0.51
	Total cost of Materials					51.37
	Labour and Transport	1	Km	10	Km	10.00
	Sub total-1					61.37
	Estt & supervision charges @ 15 %					9.21
	Sub total-2					70.58
	ESI @ 3.25% (Labour)					0.029
	EPF 13% (Labour)					0.117
	GST on labour & transport, ESI & EPF @ 18%					1.826
	Road - cut charges **	1	Km	70	Km	70.00
	Total (RATE FOR 1 Km)					142.55

Note *:** 1) The road cut charges adopted in the above sample estimate is based on the Chennai EDC rates for estimate purpose only. 2) Hence the rates may be adopted as prevailing in the concerned area and considering the type of the road.

Estimate for laying of 3 runs of 33KV,1x1000 sqmm XLPE (SC) cable for a route length of 1 Km. using open cut method

S.No	DESCRIPTION	QTY		RATE (in lakhs)	PER	AMOUNT (Rs. in lakhs)
1	33KV,1x1000 sq mm XLPE UG cable	3	Kms	16.709	Km	50.13
2	33KV, 1X1000 sqmm straight joints	9	Nos	0.24883	Each	2.24
3	PVC pipe 200mm	540	mtr	0.01666	Each	9.00
4	33 KV RCC Cover Slab	1680	Nos	0.00307	Each	5.16
5	33KV, 1000 sqmm OD termination kits	3	Nos	0.13000	Each	0.39
6	33KV, 1000 sqmm ID termination kits	3	Nos	0.06708	Each	0.20
	Cost of Materials					67.11
	Contingencies 1%					0.67
	Total cost of Materials					67.78
	Labour & Transport	1	Km	15	Km	15.00
	Sub total 1					82.782
	Estt. & Supervision charges 15%					12.42
	Sub total-2					95.20
	ESI @ 3.25% (Labour)					0.439
	EPF 13% (Labour)					1.755
	GST on labour & transport, ESI & EPF @ 18%					3.095
	Road - cut charges **	1	Km	70	Km	70.00
	TOTAL (RATE FOR 1 Km)					170.49

Note *:** 1) The road cut charges adopted in the above sample estimate is based on the Chennai EDC rates for estimate purpose only. 2) Hence the rates may be adopted as prevailing in the concerned area and considering the type of the road.

Estimate for laying 33KV,3x400 sqmm XLPE (SC) cable for a route length of 1 Km by Trenchless method.

S.No	DESCRIPTION	QTY		RATE (in lakhs)	PER	AMOUNT (Rs. in lakhs)
1	33KV,3x400 sq mm XLPE UG cable	1	Kms	23.182	Km	23.18
2	33KV, 3X400 sqmm HS straight joints	5	Nos	0.23895	Each	1.19
3	PVC pipe 200 mm	180	mtr	0.01666	Each	3.00
4	33KV RCC Cover slab	1680	Nos	0.00307	Each	5.16
5	33KV, 3X400 sqmm HS OD termination kits	1	No	0.07847	Each	0.08
6	33KV, 3X400 sqmm HS ID termination kits	1	No	0.06500	Each	0.07
	Cost of Materials					32.68
	Contingencies 1%					0.33
	Total cost of Materials					33.00
	Labour & Transport	1	Kms	60	Km	60.00
	Sub Total 1					93.003
	Estt. & Supervision charges 15%					13.95
	Sub total-2					106.95
	ESI @ 3.25% (Labour)					1.755
	EPF 13% (Labour)					7.020
	GST on labour & transport, ESI & EPF @ 18%					12.380
	Road - cut charges **	1	Km	4	Km	4.00
	TOTAL (RATE FOR 1Km)					132.11

Note *:** 1) The road cut charges adopted in the above sample estimate is based on the Chennai EDC rates for estimate purpose only. 2) Hence the rates may be adopted as prevailing in the concerned area and considering the type of the road.

Estimate for laying 33KV,3x630 sqmm XLPE (SC) cable for a route length of 1 Kms by Trenchless method.

S.No	DESCRIPTION	QTY		RATE (in lakhs)	PER	AMOUNT (Rs. in lakhs)
1	33KV,3x630 sq mm XLPE UG cable	1	Kms	44.840	Km	44.84
2	33KV,3X630 sqmm straight joints	5	Nos	0.6744	Each	3.37
3	PVC pipe 200mm	180	Nos	0.0167	Each	3.00
4	33KV RCC Cover slab	1680	Nos	0.00307	Each	5.16
5	33KV, 3x630 sqmm OD termination kits	1	No	0.21177	Each	0.212
6	33KV, 3x630 sqmm ID termination kits	1	No	0.18383	Each	0.184
	Cost of Materials					56.76
	Contingencies 1%					0.57
	Total cost of Materials					57.33
	Labour & Transport	1	Kms	65	Km	65.00
	Sub total-1					122.33
	Estt. & Supervision charges 15%					18.35
	Sub total-2					140.68
	ESI @ 3.25% (Labour)					1.90
	EPF 13% (Labour)					7.61
	GST on labour & transport, ESI & EPF @ 18%					13.41
	Road - cut charges **	1	Km	4	Km	4.00
	TOTAL (RATE FOR 1Km)					167.60

Note *:** 1) The road cut charges adopted in the above sample estimate is based on the Chennai EDC rates for estimate purpose only. 2) Hence the rates may be adopted as prevailing in the concerned area and considering the type of the road.

Estimate for laying of 3 runs of 33 KV, 1x630 sq.mm XLPE (SC) cable for a Route Length of per Km using trenchless method

SL.NO	DESCRIPTION	QTY		RATE Rs. IN LAKHS	PER	AMOUNT Rs. IN LAKHS
1	33 KV, 1X630 Sq.mm XLPE UG Cable	3	Kms	12.9600	km	38.88
2	33 KV, 1X630 sqmm Straight Joints	9	Nos.	0.09366	Each	0.84
3	PVC pipe 160mm	540	Nos.	0.01054	Each	5.69
4	33 KV RCC Cover Slab	1680	Nos.	0.00307	Each	5.16
5	33 KV, 1X630 Sq.mm HS OD termination kits	3	Nos.	0.06714	Each	0.20
6	33 KV, 1X630 Sq.mm HS ID termination kits	3	Nos.	0.03046	Each	0.09
	Cost of Materials					50.86
	Contingencies 1%					0.51
	Total cost of Materials					51.37
	Labour and Transport	1	Kms	65.00	Km	65.00
	Sub total-1					116.37
	Estatt & supervision charges @ 15 %					17.46
	Sub total-2					133.83
	ESI @ 3.25% (Labour)					1.90
	EPF 13% (Labour)					7.61
	GST on labour & transport, ESI & EPF @ 18%					13.41
	Road - cut charges **	1	Km	4	Km	4.00
	Total RATE FOR 1 Km					160.75

Note *:** 1) The road cut charges adopted in the above sample estimate is based on the Chennai EDC rates for estimate purpose only. 2) Hence the rates may be adopted as prevailing in the concerned area and considering the type of the road.

Estimate for laying of 1 km. route length of 11 KV ,3 X 300 sq mm cable by open cut method.

Sl. No.	Description	Quantity	Units	Rate in Lakhs	PER	Total in Lakhs
1	11 KV 3 X 300 sq mm UG cable	1	km	17.1100	Km	17.110
	11KV, 3X300 sqmm HS straight joints	5	Nos.	0.0574	No	0.287
2	11 KV V trough	1680	Nos.	0.00245	Each	4.116
3	PVC pipe 160 mm	180	mtr	0.01054	mtr.	1.897
4	11KV, 3X300 sqmm HS OD termination kits	1	No	0.0242	Each	0.024
5	11KV, 3X300 sqmm HS ID termination kits	1	No	0.02087	Each	0.021
	Cost of Material					23.455
	Contingencies 1 %					0.235
	Sub Total					23.690
	Labour as per statement XIX					3.550
	Transport as per statement XIX					0.242
	Sub Total					27.240
	Estt and supervision charges at 15 %					4.086
	Sub Total					31.326
	ESI @ 3.25% (Labour)					0.1154
	EPF 13% (Labour)					0.4615
	GST on labour & transport, ESI & EPF @ 18%					0.7863
	Sub Total					32.689
	Road - cut charges **	1	Km	10	Km	10.00
	TOTAL (Rate for 1 Km.)					42.69
		Or say Rs.42.16 lakhs				

Note *:** 1) The road cut charges adopted in the above sample estimate is based on the Chennai EDC rates for estimate purpose only. 2) Hence the rates may be adopted as prevailing in the concerned area and considering the type of the road.

Estimate for laying of 1 km. route length of 11 KV ,3 X 120 sq mm cable by open cut method.

Sl. No.	Description	Quantity	Units	Rate in rupees	PER	Amount in Rs. Lakhs
1	11 KV 3 X 120 sq mm UG cable	1	km	8.8146	Km	8.815
2	11KV, 3X120 sqmm HS straight joints	5	Nos.	0.05066	No	0.253
3	11 KV V trough	1680	Nos.	0.00245	Each	4.116
4	PVC pipe 160 mm	180	mtr	0.01054	mtr.	1.897
5	11KV, 3X120 sqmm HS OD termination kits	1	No	0.02117	Each	0.021
	11KV, 3X120 sqmm HS ID termination kits	1	No	0.01652	Each	0.017
	Total for Materials					15.119
	contingencies 1 %					0.151
	Sub Total-1					15.270
	Labour as per statement XIX					3.550
	Transport as per statement XIX					0.242
	Sub Total					18.820
	Estt and supervision charges at 15 %					2.823
	Sub Total					21.643
	ESI @ 3.25% (Labour)					0.1154
	EPF 13% (Labour)					0.4615
	GST on labour & transport, ESI & EPF @ 18%					0.7863
	Sub Total					23.006
	Road - cut charges **	1	Km	10	Km	10.00
	TOTAL (Rate for 1 Km.)					33.01
		Or say Rs.33.01 lakhs				

Note *:** 1) The road cut charges adopted in the above sample estimate is based on the Chennai EDC rates for estimate purpose only. 2) Hence the rates may be adopted as prevailing in the concerned area and considering the type of the road.

Estimate for laying of 1 km. route length of 4 * 240 sq mm cable by open cut method.

Sl. No.	Description	Quantity	Units	Rate in rupees	PER	Amount in Rs. Lakhs
1	4 * 240 sq mm UG cable	1	km	8.7817	Km.	8.78
2	LT trough	1340	nos	0.00066	Nos.	0.88
3	LT straight joint box (HS type)	2	nos	0.01495	Nos.	0.03
	PILLAR BOX MS 4 way with HRC fuse	2	nos	0.50193	Nos.	1.00
	Sub Total					10.700
	contingencies 1 %					0.107
	Sub Total					10.807
	Labour as per statement XX					2.451
	Transport as per statement XX					0.083
	Sub Total					13.258
	Estt and supervision charges at 15 %					1.989
	Sub Total					15.247
	ESI @ 3.25% (Labour)					0.0797
	EPF 13% (Labour)					0.3187
	GST on labour & transport, ESI & EPF @ 18%					0.5278
	Sub Total					16.173
	Road - cut charges **	1	Km	4	Km	4.00
	Rate for 1 km					20.17
		Or say Rs.20.17 lakhs				

Note *:** 1) The road cut charges adopted in the above sample estimate is based on the Chennai EDC rates for estimate purpose only. 2) Hence the rates may be adopted as prevailing in the concerned area and considering the type of the road.

Estimate for laying of 1 km. route length of 4 * 120 sq mm cable by open cut method.

Sl. No.	Description	Quantity	Units	Rate in Lakhs	Per	Amount in Rs. Lakhs
1	4 * 120 sq mm UG cable	1	km	4.57979	Km	4.58
2	LT trough	1340	nos	0.00066	Nos	0.88
3	LT straight joint box (HS type)	2	nos	0.0077	Nos	0.02
4	PILLAR BOX MS 4 way with HRC fuse	2	nos	0.50193	Nos.	1.00
	Sub Total					6.48
	contingencies 1 %					0.06
	Sub Total					6.55
	Labour as per statement XX					2.451
	Transport as per statement XX					0.083
	Sub Total					9.00
	Estt and supervision charges at 15 %					1.35
	Sub Total					10.350
	ESI @ 3.25% (Labour)					0.0797
	EPF 13% (Labour)					0.3187
	GST on labour & transport, ESI & EPF @ 18%					0.5278
	Sub Total					11.276
	Road - cut charges **	1	Km	4	Km	4.00
	Rate for 1 km					15.28
		Or say Rs.15.28 lakhs				

Note *:** 1) The road cut charges adopted in the above sample estimate is based on the Chennai EDC rates for estimate purpose only. 2) Hence the rates may be adopted as prevailing in the concerned area and considering the type of the road.

DETAILED ESTIMATE FOR 11KV BAY EXTENSION FOR INDOOR SS
 (For erection of one no feeder panel)

Rs. In lakhs

Sl.No	DESCRIPTION	UNIT	QTY	RATE	TOTAL
1	11KV VCB Indoor Breaker 1250A,25KA	Nos.	1	3.812	3.812
2	Bus - Adapter (Fabrication of Box with powder coating and copper busbar for linking the existing breaker bus with new type breaker bus)	Nos	1	1.659	1.659
3	Materials and Labour charges for provision of maintenance free earthing (As per CMD proceedings 30 dt.06.04.2015) without MS Flat	Nos	3	0.090	0.270
4	MS Flat for Earthing	LS			3.000
5	Control cables	LS	0.500	0.500	
6	Sub total-1				9.241
7	Contingencies 1 %				0.092
8	Cost of materials and equipments				9.333
9	Labour and transport 15%				1.400
10	Sub Total - 2				10.733
11	Establishment and Supervision Charges @15%				1.610
	Sub Total - 3				12.343
	ESI @ 3.25% (Labour) (3.25% of (14% of Sl.No.9))				0.006
	EPF 13% (Labour) (13% of (14% of Sl.No.9))				0.025
	GST on labour & transport, ESI & EPF @ 18%				0.258
	Total				12.633

Say Rs. 12.63 Lakhs

Note: The rate may be substituted for erection of Transformer/Bus Coupler Panel
 1 Rate of 11 KV Transformer LV VCB Panel = 4.425 Lakhs

2 Rate of 11 KV Bus Coupler VCB Panel ** = 3.962 Lakhs

3 Rate of 11 KV Feeder Panel = 3.812 Lakhs

.... In the case of erection of bus coupler panel 2 Nos. of bus adapter panel & cost may be

** In the case of erection of bus coupler panels, 2 nos. of bus earthing panels & cost may be included.

DETAILED ESTIMATE FOR 33 KV BAY EXTENSION FOR INDOOR SS
(For erection of one no feeder panel)

Sl.No	DESCRIPTION	UNIT	QTY	RATE	Rs. In lakhs
1	33 KV VCB Indoor Breaker 1250A, 25KA	Nos.	1	10.661	10.661
2	Bus - Adapter(Fabrication of Box with powder coating and copper busbar for linking the existing breaker bus with new type breaker bus)	Nos	1	1.954	1.954
3	Materials and Labour charges for provision of maintenance free earthing(As per CMD proceedings 30 dt 06.04.2015) without MS Flat	Nos	3	0.090	0.270
4	MS Flat for Earthing		LS		3.000
5	Control cables		0	0.500	0.500
6	Sub total-1				16.385
7	Contingencies 1 %				0.164
8	Cost of materials and equipments				16.549
9	Labour and transport 15%				2.482
	Sub total-2				19.031
	Establishment and Supervision Charges @15%				2.855
	Sub total-3				21.886
	ESI @ 3.25% (Labour) (3.25% of (14% of Sl.No.9))				0.011
	EPF 13% (Labour) (13% of (14% of Sl.No.9))				0.045
	GST on labour & transport, ESI & EPF @ 18%				0.457
	Total				22.400

Say Rs. 22.40 Lakhs

Note: The rate may be substituted for erection of Transformer/Bus Coupler Panel

1 Rate of 33 KV Transformer HV VCB Panel = 11.959 Lakhs

1 Rate of 33 KV Transformer LV VCB Panel = 12.903 Lakhs

2 Rate of 33 KV Bus Coupler VCB Panel ** = 14.656 Lakhs

3 Rate of 33 KV Feeder Panel = 10.661 Lakhs

**** In the case of erection of bus coupler panel, 2 Nos. of bus adaptor panel & cost may be included.**

Estimate for the establishment of 33/11 KV Indoor SS with 2x16 MVA Power Transformer

SL. NO	DESCRIPTION	QTY	` RUPEES IN LAKHS			
			RATE	PER	AMOUNT	
I	CIVIL WORKS (**)					
1	Land cost (actuals)					
2	Control Room including electrification		198.00	LS	198.00	
3	Station yard with foundation & cable duct (as applicable)		20.00	LS	5.00	
4	Water system inclusive of Bore well, Motor, Pipeline etc and sewerage system		3.00	LS	3.00	
5	Compound wall/Fencing and gate		10.00	LS	10.00	
6	Land Levelling of site and revetment (Retaining wall) if applicable		10.00	LS	10.00	
7	Lead Road		5.00	LS	5.00	
8	RCC culvert (if applicable)		5.00	LS	5.00	
9	Construction of Fire Protection wall		3.00	LS	3.00	
10	Aluminium Partition & cash collection centre		20.00	LS	20.00	
11	Yard levelling		4.00	LS	4.00	
12	Substation Earthing		4.00	LS	4.00	
13	Dismantling of old building (if applicable)		5.00	LS	5.00	
Total for civil works					272.00	
II	ELECTRICAL WORKS					
1	33 KV VCB Indoor (Transformer HV)	2	Nos	11.950	E	23.90
2	33 KV VCB Indoor (Feeder)	2	Nos	10.660	E	21.32
3	33 KV VCB Indoor (Bus coupler)	1	No	14.650	E	14.65
4	33KV Bus Adapter	1	No	1.950	E	1.95
5	11 KV VCB Indoor (Transformer LV)	2	Nos	4.425	E	8.85
6	11 KV VCB Indoor (Feeder)	8	Nos	3.812	E	30.50
7	11 KV VCB Indoor (Bus coupler)	1	No	3.962	E	3.96
8	11 KV Bus Adapter	1	No	1.660	E	1.66
9	Control cable in various sizes		LS	LS		5.00
10	100 KVA, 11 KV/433V Distribution Transformer with structure	1	set	4.356	E	2.82
11	110 V, 300 AH Battery Set	1	Set	4.484	Set	4.48
12	110 V, 60 A Battery charger	2	Nos	2.743	E	5.49
13	110 V AC Panel	1	No	0.817	E	0.82

SL. NO	DESCRIPTION	QTY		` RUPEES IN LAKHS		
				RATE	PER	AMOUNT
14	110 V DC Panel	1	No	0.970	E	0.97
15	Annunciator panel	1		0.857		0.86
16	Earthing, Painting and yard lighting	LS		LS		8.00
17	Firefighting equipment and sundries	1 set		LS		3.00
18	VHF communication	1 set		LS		2.40
19	P&T phone	1	No	0.100	E	0.10
20	SCADA	LS		LS		20.00
21	Scientific Instruments	LS		LS		5.00
22	T & P materials and Furniture	LS		LS		4.00
23	33 KV XLPE cable with accessories with termination kit	LS		LS		10.00
24	11 KV XLPE cable with accessories with termination kit	LS		LS		10.00
25	Electrification (Ground floor & 1st floor)	LS		LS		10.00
26	Sub-Total 1 for Electrical materials					199.72
27	Contingencies @ 1%					1.997
28	Total for materials (26+27)					201.715
29	Labour & Transport @ 15% (15% of 28)					30.257
30	16 MVA, 33/11 KV power transformer with OLTC (Indoor)	2	Nos.	95.36	E	190.723
31	Plinth, Labour & Transport for trs including GST, EPF &ESI	2	Nos.	13.000	Per Tr	26.000
32	Earthing	2	Nos.	0.500	Per Tr	1.000
33	11 kV capacitor bank 2.4 MVAR	1	Set	22.744	Set	22.744
34	Sub total 2 (S.No. 28 to 33)					472.440
35	Estt & supervision charges @ 15 % (15% of 34)					70.866
36	Sub total 3 (34+35)					543.31
37	ESI on labour portion @3.25% (3.25% of 29 (labour 14%)					0.138
38	EPF on labour portion @13% (13% of 29 (labour 14%)					0.551
39	GST on labour & transport,ESI &EPF @ 18% (18% of S No 29+37+38)					5.57
	Total for Electrical works					549.56
	Total for Civil works					272.00
	Total Gross & Nett					821.56

SL. NO	DESCRIPTION	QTY	` RUPEES IN LAKHS		
			RATE	PER	AMOUNT

Note : 1) **I- Rates as per actuals

unmanned GIS SS with 2x16 MVA Power Transformers

SL.NO	DESCRIPTION	QTY		RUPEES IN LAKHS		
				RATE	PER	AMOUNT
I	CIVIL WORKS (**)					
1	Land cost (as per actuals)					—
2	Control Room including electrification with first floor			420.00	LS	397.00
3	Yard levelling & cable duct			17.00	LS	17.00
4	Water system inclusive of Bore well, Motor, Pipeline etc and sewerage system			3.00	LS	3.00
5	Compound wall/Fencing and gate			15.00	LS	15.00
6	Earthing			4.00	LS	4.00
	Dismantling of old building (if applicable)			5.00	LS	5.00
	Total for civil works					441.00
II	ELECTRICAL WORKS					
1	33 KV GIS Indoor (Transformer HV) bay	2	Nos.	31.178	E	62.356
2	33 KV GIS Indoor (for incoming feeder) bay	2	Nos.	37.920	E	75.840
3	33 KV GIS Indoor (Bus coupler with Adopter) bay	1	No.	41.885	E	41.885
4	11 KV GIS Indoor (Transformer LV) bay	2	Nos.	29.806	E	59.612
5	11 KV GIS Indoor (for 7 nos. Feeder + 2 nos. spare) bay	9	Nos.	31.693	E	285.233
6	11 KV GIS Indoor (Bus coupler with Adopter) bay	1	No.	37.928	E	37.928
7	Control cable				LS	5.000
8	Remote operatable Relay & RTU				LS	25.000
9	Fire fighting equipment & Fire alarm system	1	Set		LS	45.000
10	Surveillance camera & security arrangement				LS	9.800
11	Air conditioning				LS	18.850
12	Fibre optic/SIM communication				LS	6.240
13	100 KVA, 11 KV/433 V Distribution Transformer with structure	1	Set	4.356	Set	4.356
14	110 V Battery set (1 no.) with 2 Chargers (4.484+(2X2.743)				Set	9.970
15	110 V AC Panel	1	No	0.817	E	0.82
16	110 V DC Panel	1	No	0.970	E	0.97
17	Annunciator panel	1		0.857		0.86
18	Earthing, Painting & Yard lighting	1	Set	8.000	Set	8.000
19	VHF Communication	1	Set		LS	2.400
20	P & T phone	1	No.		E	0.100

SL.NO	DESCRIPTION	QTY	` RUPEES IN LAKHS			
			RATE	PER	AMOUNT	
21	SCADA		LS		20.000	
22	Scientific instruments		LS		5.000	
23	T & P materials and Furniture		LS		4.000	
24	33 KV, 1x630 sqmm XLPE cable with accessories with termination kit		LS		10.000	
25	11 KV, 1x630 sqmm XLPE cable with accessories with termination kit		LS		10.000	
26	Sub total - 1 - Cost of materials				749.213	
27	Contingencies @ 1%				7.492	
28	Total for Materials (26+27)				756.706	
29	Labour & Transport @ 15% (15% of 28)				113.506	
30	16 MVA, 33/11 KV power transformer with OLTC (Indoor)	2	Nos.	95.36	E	190.723
31	Plinth, Labour & Transport for trs including GST and ESI	2	Nos.	13.000	Per Tr	26.000
32	Earthing	2	Nos.	0.500	Per Tr	1.000
33	11 KV capacitor bank 2.4 MVAR	1	Set	22.744	Set	22.744
34	Construction of fire protection wall		LS		3.000	
35	Sub total 2 (S.No. 28 to 34)				1113.679	
36	Estt & supervision charges @ 15 % (15% of 35)				167.052	
37	Sub total 3 (35+36)				1280.731	
38	ESI on labour portion @3.25% (3.25% of 29 (labour 14%)				3.443	
39	EPF on labour portion @13% (13% of 29 (labour 14%)				13.772	
40	GST on labour & transport,ESI &EPF @ 18% (18% of S.No.29+38+39)				23.53	
	Total for Electrical works				1321.48	
	Total for Civil works				441.00	
	Total Gross & Nett				1762.48	

Note : 1) **I- Rates as per actuals

DETAILED ESTIMATE FOR ESTABLISHMENT OF 33/11 KV OUTDOOR SS WITH 2x8 MVA POWER TRANSFORMERS WITH 4 NOS. 11 KV FEEDERS

Part I: Cost of new asset

Rs. In Lakhs

SL.NO	DESCRIPTION	QTY	Unit	RATE	PER	AMOUNT	TOTAL
I	CIVIL WORKS						
1	Land Cost (actuals)						
2	Control Room including electrification			50.00	LS	50.00	
3	Station yard with foundation & cable duct (as			10.00	LS	10.00	
4	Water system inclusive of Bore well, Motor, Pipeline			3.00	LS	3.00	
5	Compound wall/Fencing and gate			10.00	LS	10.00	
6	Yard filling			10.00	LS	10.00	
7	Lead road			5.00	LS	5.00	
8	RCC Culvert (if applicable)				LS	5.00	
9	Construction of Fire Protection wall			3.00	LS	3.00	
6	Substation Earthing			2.00	LS	2.00	
	Dismantling of old building (if applicable)			5.00	LS	5.00	
Total for civil works						103.000	103.00
II	Electrical Works						
1	33 KV Double break Centre rotating AB switch with PT insulators	4	Nos	0.383	E	1.534	
2	33 KV SF6/VCB Breaker	1	No	2.529	E	2.529	
3	33 KV CTs	3	Nos	0.231	E	0.694	
4	33 KV PTs	3	Nos	0.238	E	0.714	
5	33 KV LAS stn. Type	6	Nos	0.041	E	0.248	
6	11 KV Breaker (2 LV+ 4 fdrs)	1	Set	15.172	E	15.172	
7	11 KV CTS	3	Nos	0.211	E	0.634	
8	11 KV double break centre rotating AB Switch with PT insulator	11	Nos	0.355	E	3.907	
9	11 KV Bus PT	3	Nos	0.283	S	0.850	
10	11 KV LAS stn. Type	6	Nos	0.019	E	0.112	
11	11 KV LAS distn. Type	12	Nos	0.003	E	0.034	
10	Plinth for breaker	6	Nos.	2.0	E	14.000	
12	Earthing, painting and Yard lighting			8.000	LS	7.500	
13	Control cable			7.000	LS	5.000	
14	110 V Battery with 2 charger	1	set	10.881	set	10.881	

SL.NO	DESCRIPTION	QTY	Unit	RATE	PER	AMOUNT	TOTAL
15	100 kVA, 11 kV/433 V Stn. Tr.	1	No	2.609	set	2.609	
16	Fire fighting equipments	1		3.000	LS	3.000	
17	P&T Phone	1		0.100	LS	0.100	
18	Scientific instruments	1		5.000	LS	5.000	
19	T&P Furniture materials	1		4.00	LS	4.000	
20	C&R panel			20.00		15.000	
21	110 V AC Panel	1	No	0.817	E	0.817	
22	110 V DC Panel	1	No	0.970	E	0.970	
23	Sub total - 1					95.304	
24	Contingencies @ 1%					0.953	
25	Total for materials					96.257	
26	Labour & transport @ 15%					14.439	
27	8 MVA 33/11 kV Pr.Tr. with OLTC	2	Nos.	45.997	E	91.994	
28	Plinth, Labour & Transport for trs including GST, EPF &ESI	2	Nos.	13.000	Per Tr	26.000	
29	Earthing	2	Loc	0.500		1.000	
30	33 KV Structure (including material, labour &transport)	1	set	12.671	set	12.671	
31	11 KV Structure (including material, labour &transport)	1	set	10.890	set	10.890	
32	11 KV Link line with 7/4.09 ACSR (including material, labour &transport)	1.7	kms.	7.507	km	12.762	
33	11 KV capacitor bank 2.4 MVAR (including material, labour &transport)	1	Set	21.710	set	21.710	
34	33 KV line with Dog conductor (including material, labour &transport)	1.2	kms.	10.450	Loc	12.540	
35	Sub total - 2 (Sl.No.25 to 34)					300.263	
36	Estt & Sup. Charges 15% (15% of Sl.No.35)					45.039	
37	Sub total 3 (35+36)					345.30	
38	ESI on labour portion @3.25% (3.25% of 26 (labour 14%)					0.066	
39	EPF on labour portion @13% (13% of 26 (labour 14%)					0.263	
40	GST on labour & transport,ESI &EPF @ 18% (18% of S.No.26+38+39)					2.66	
	Total for Electrical works					348.29	
	Total for Civil works						103.00
	Total Gross & Nett						451.29

**DETAILED ESTIMATE FOR ENHANCEMENT OF EXISTING POWER TRANSFORMER CAPACITY
FROM 1x8 MVA to 2x8 MVA AT 33/11 KV OUTDOOR SS WITH 2 NOS. 11 KV FEEDERS**

RS. in Lakhs

S.NO	DESCRIPTION	QTY	Unit	RATE	PER	TOTAL
1	33 KV AB switch	1	No	0.383	E	0.383
2	11 KV VCB (1 LV + 2 fdrs)	1	Set	4.121	E	4.121
3	11 KV AB switch	6	Nos	0.355	E	2.130
4	11 KV CTs	9	Nos	0.211	E	1.901
5	33 KV LAs (Station type)	3	Nos.	0.041	E	0.124
6	11 KV LAS (Station type)	3	Nos	0.019	E	0.056
7	11 KV LAS (Distn. type)	6	Nos	0.004	E	0.024
8	Plinth for breaker	2	Nos.	2.0	E	4.000
9	Control cable				LS	5.000
10	C&R Panel			8.00		8.000
11	33 KV & 11 KV structure modifications			10.00	LS	10.000
12	Subtotal 1					35.739
13	Contingencies 1%					0.357
14	Cost of Material					36.096
15	Labour & transport @ 15%					5.414
16	Sub total 2					41.511
17	8 MVA, 33/11 KV Power Transformer with OLTC	1	No	60.827	E	60.827
18	Plinth, Labour & Transport for trs including GST, EPF &ESI	1	Nos.	13.000	Per Tr	13.000
19	Earthing	1	Loc	0.500	Per Tr	0.500
20	Fire Protection wall	1	Loc	3.00	E	3.000
21	Sub total 3					118.837
22	Estt and Supervision charges 15%(15% of 21)					17.826
23	Sub total 4					136.663
24	ESI on labour portion @ 3.25%(14% of Sl.No.15)					0.025
25	EPF on labour portion @ 13%(14% of Sl.No.15)					0.099
26	GST on labour & transport, EPF & ESI @ 18%					1.00
27	Total for works (Gross) & (Nett)					137.78

**DETAILED ESTIMATE FOR ENHANCEMENT OF EXISTING POWER TRANSFORMER CAPACITY
FROM 1x8 MVA to 1x16 MVA AT 33/11 kV INDOOR SS**

RS. in Lakhs

S.NO	DESCRIPTION	QTY	Unit	RATE	PER	TOTAL
1	16 MVA, 33/11 KV power transformer with OLTC (Indoor)	1	Nos.	95.36	E	95.362
2	33 KV and 11 KV, 1X630 sqmm XLPE cable from Power Transformer to LV breaker (2X3X50 mts), outdoor/Indoor termination kits, cable accessories and V trough etc			15.000	LS	15.000
3	Plinth modification			2.000	LS	2.000
4	Earthing, painting				LS	1.000
5	Fire Protection wall	1	Loc	3.00	E	3.000
6	Subtotal 1					116.362
7	Contingencies 1%					1.164
7	Cost of Material					117.525
8	Labour & Transport (15% of Sl.No.6)					17.454
9	Sub total 2					134.980
10	Estt and Supervision charges 15%					20.247
11	Sub Total - 3					155.23
12	ESI on labour portion @3.25% (3.25% of 8 (labour 14%)					0.079
13	EPF on labour portion @13% (13% of 8 (labour 14%)					0.318
14	GST on labour & transport,ESI &EPF @ 18% (18% of S.No.8+12+13)					3.213
15	Total for works (Gross) & (Nett)					158.837

DETAILED ESTIMATE FOR 11KV BAY EXTENSION FOR OUTDOOR SS

(For erection of one no feeder panel)

Rs. In lakhs

SI.No	DESCRIPTION	UNIT	QTY	RATE	TOTAL
1	11 KV double break centre rotating AB Switch with PT insulator	Nos.	2	0.355	0.710
2	11 KV OD VCB Breaker	Nos	1	1.374	1.374
3	11 KV (1200-600-300/1-1A) outdoor CT	Nos	3	0.211	0.634
4	11 KV LAS	Nos	3	0.019	0.056
5	Relay & Control panel for LV breaker	Nos	1	3.083	3.083
6	Earthing,Structure			2.365	2.365
7	Control Cables			0.500	0.500
8	Bus bar arrangement			0.500	0.500
9	Foundation materials			0.400	0.400
10	Sub total-1				9.621
11	Contingencies 1 %				0.096
12	Cost of materials and equipments				9.718
13	Labour and transport 15%				1.458
	Sub total 2				11.175
18	Establishment and Supervision Charges @15%				1.676
17	Sub total-3				12.852
14	ESI @ 3.25% (Labour)				0.01
15	EPF 13% (Labour)				0.03
16	GST on labour & transport, ESI & EPF @ 18%				0.268
	Total				13.153

Say Rs. 13.15 Lakhs

DETAILED ESTIMATE FOR 22KV BAY EXTENSION FOR OUTDOOR SS
(For erection of one no feeder)

Rs. In lakhs

Sl.No	DESCRIPTION	UNIT	QTY	RATE	TOTAL
1	22 KV AB switch	Nos.	2	0.177	0.355
2	22 KV OD VCB Breaker	Nos	1	2.529	2.529
3	22 KV outdoor CT	Nos	3	0.231	0.694
4	22 KV LAS	Nos	3	0.034	0.102
5	Relay & Control panel for LV breaker	Nos	1	3.083	3.083
6	Earthing,Structure			4.730	4.730
7	Control Cables			0.500	0.500
8	Bus bar arrangement			0.500	0.500
9	Foundation materials			0.400	0.400
10	Sub total				12.893
11	Contingencies 1 %				0.129
12	Cost of materials and equipments				13.021
13	Labour and transport 15%				1.953
	Sub total 2				14.975
18	Establishment and Supervision Charges @15%				2.246
	Sub total 3				17.221
14	ESI @ 3.25% (Labour)				0.01
15	EPF 13% (Labour)				0.04
16	GST on labour & transport, ESI & EPF @ 18%				0.360
	Total				17.625

Say Rs. 17.62 Lakhs

DETAILED ESTIMATE FOR 33KV BAY EXTENSION FOR OUTDOOR SS
(For erection of one no feeder)

SI.No	DESCRIPTION	UNIT	QTY	RATE	Rs. In lakhs
1	33 KV Double break Centre rotating AB switch with PT insulators	Nos.	2	0.383	0.767
2	33 KV OD VCB Breaker	Nos	1	2.529	2.529
3	33 KV (1200-600-300/1-1A) outdoor CT	Nos	3	0.231	0.694
4	33 KV LAS	Nos	3	0.041	0.124
5	Relay & Control panel for LV breaker	Nos	1	3.083	3.083
6	Earthing,Structure			8.000	8.000
7	Control Cables			0.500	0.500
8	Bus bar arrangement			0.500	0.500
9	Foundation materials			0.400	0.400
10	Sub total-1				16.597
11	Contingencies 1 %				0.166
12	Cost of materials and equipments				16.763
13	Labour and transport 15%				2.514
14	Sub total-2				19.277
15	Establishment and Supervision Charges @15%				2.892
16	Sub total-3				22.169
17	ESI @ 3.25% (Labour)				0.01
18	EPF 13% (Labour)				0.05
19	GST on labour & transport, ESI & EPF @ 18%				0.463
	Total				22.689

Say Rs. 22.69 Lakhs

A.1. EXTENSION OF 1 KM. OF 33 KV LINE WITH ACSR 6/4.72 MM AND 7/1.57 MM DOG CONDUCTOR AT 45 M SPAN ON 9.0 M PSC POLES 400 KG WORKING LOAD

Quantity	Description	Rate	Per	Amount
23	9.0 M PSC pole 400 kg WL	4,075	E	93725
23	Base Plates	261	E	6003
23	Back Clamps	104	E	2392
19	1525 mm (5'-0") V cross arms	1378	E	26182
19	HT Top insulator fittings	189	E	3591
57	33 KV pin insulators with pin (468+240)	708	E	40356
4	Tapping channel cross arm for 33 KV	3214	E	12856
12	33 KV Polymer composite strain disc insulator (including metal parts)	192	Set	2304
1	D.P.channel cross arm 10' centre	6,937	E	6937
1	Cross bracing set 10' centre	8,816	Set	8816
8	Stay set complete incl. GI wire (5kg), stay plate & stay clamp (pair) (413+5*78+261+242)	1306	Set	10448
8	33 KV Guy insulators	27	E	216
3.06	Dog conductor ACSR 6/4.72 mm & 7/1.57 mm	116,251	Km	355728
23	Concreting	1022	Loc	23506
23	Earthing (Coil)	1290	Loc	29670
23	Bolts, Nuts and Binding wire etc.	888	loc	20424
Cost of materials				643154
Contingencies 1%				6432
Sub total 1				649586
Labour Rate as per (I)				182110
Transport Rate (9939+5845)				15784
Sub total 2				847480
Estt. & Supervision charges 15% for SUB TOTAL 2				127122
ESI @ 3.25% (Labour)				5919
EPF 13% (Labour)				23674
GST on labour & transport, ESI & EPF @ 18%				40948
Total				1045142
Or Say Rs.				<u>1045140</u>
NB CONTINGENCIES & STORAGE				

**For Deposit Contributory Works (DCW), Contingencies may be worked out @ 5% &
Storage worked out 3% may be included**

**B.1. EXTENSION OF 1 KM. OF 22 KV LINE WITH RACCOON 7/4.09 MM ACSR AT 60 M SPAN
ON 9.0 M PSC POLES 400 KG WORKING LOAD**

Quantity	Description	Rate	Per	Amount
18	9.0 M PSC pole 400 kg WL	4,075	E	73350
18	Base Plates	261	E	4698
18	Back Clamps	104	E	1872
16	1373 MM (4'-6") V Cross Arm	1241	E	19856
16	HT Top insulator fittings	189	E	3024
48	22 KV pin insulators with pin (129+160)	289	E	13872
2	Tapping channel cross arm	913	E	1826
6	22 KV Polymer composite strain disc insulator (including metal parts)	325	Set	1950
1	D.P. cross arm 10' centre	6,937	E	6937
1	Cross bracing set 10' centre	8,816	Set	8816
8	Stay set complete incl. GI wire (5kg), stay plate & stay clamp (pair) (413+5*78+261+242)	1306	Set	10448
8	Guy insulators	27	E	216
3.06	Raccoon ACSR Conductor 7/4.09 mm	71,830	Km	219800
18	Concreting	1022	Loc	18396
18	Earthing (Coil)	1290	Loc	23220
18	Bolts, Nuts and Binding wire etc.	888	loc	15984
	Cost of materials			424265
	Contingencies 1%			4243
	Sub total 1			428507
	Labour Rate as per (I)			182110
	Transport Rate (7779+3697)			11476
	Sub total 2			622093
	Estt. & Supervision charges 15% for sub total 2			93314
	ESI @ 3.25% (Labour)			5919
	EPF 13% (Labour)			23674
	GST on labour & transport, ESI & EPF @ 18%			40172
	Total			785173
	Or Say Rs.			785170
NB CONTINGENCIES & STORAGE				

**For Deposit Contributory Works (DCW), Contingencies may be worked out @ 5% &
Storage worked out 3% may be included**

B.2. EXTENSION OF 1 KM. OF 22 KV LINE WITH 7/4.09 MM ACSR AT 60 M SPAN ON 10.9 M RSJ POLES

Quantity	Description	Rate	Per	Amount
18	10.9 M (36') RSJ pole	14,401	E	259218
18	Base Plates	261	E	4698
18	Back Clamps	104	E	1872
16	1373 MM (4'-6") Cross Arm	1241	E	19856
16	HT Top insulator fittings	189	E	3024
48	22 KV pin insulators with pin (129+160)	289	E	13872
2	Tapping channel cross arm	913	E	1826
6	22 KV Polymer composite strain disc insulator (including metal parts)	325	Set	1950
1	D.P. cross arm 10' centre	6,937	E	6937
1	Cross bracing set 10' centre	8,816	Set	8816
8	Stay set complete incl. GI wire (5kg), stay plate & stay clamp (pair) (413+5*78+261+242)	1306	Set	10448
8	Guy insulators	27	E	216
3.06	Raccoon ACSR Conductor 7/4.09 mm	71,830	Km	219800
18	Concreting	1022	Loc	18396
18	Earthing (Coil)	1290	Loc	23220
18	Bolts, Nuts and Binding wire etc.	888	loc	15984
Cost of materials				610133
Contingencies 1%				6101
Sub total 1				616234
Labour Rate as per (I)				182110
Transport Rate (9315+3697)				13012
Sub total 2				811356
Estt. & Supervision charges 15%				121703
ESI @ 3.25% (Labour)				5919
EPF 13% (Labour)				23674
GST on labour & transport, ESI & EPF @ 18%				40449
Total				1003101
Or Say Rs.				1003100
NB CONTINGENCIES & STORAGE				

**For Deposit Contributory Works (DCW), Contingencies may be worked out @ 5% &
Storage worked out 3% may be included**

C.1. EXTENSION OF 1 KM. OF 11 KV LINE WITH 7/4.09 MM ACSR AT 60 M SPAN ON 9.0 M PSC POLES, 300 KG. WORKING LOAD

Quantity	Description	Rate	Per	Amount
18	9.0 M PSC pole 300 kg WL	3,451	E	62118
18	Base Plates	261	E	4698
18	Back Clamps	104	E	1872
16	1068 MM (3'-6") Cross Arm	702	E	11232
16	HT Top insulator fittings	189	E	3024
48	11 KV pin insulators with pin (58+76)	134	E	6432
2	Tapping channel cross arm	913	E	1826
6	11 KV strain sets (316+203)	519	Set	3114
1	D.P. cross arm 10' centre	6,937	E	6937
1	Cross bracing set 10' centre	8,816	Set	8816
6	Stay set complete incl. GI wire (5kg), stay plate & stay clamp (pair) (413+5*78+261+242)	1306	Set	7836
6	Guy insulators	26	E	156
3.06	7/4.09 mm ACSR (Raccoon)	71,830	Km	219800
18	Concreting	1022	Loc	18396
18	Earthing (Coil)	1290	Loc	23220
18	Bolts, Nuts and Binding wire etc.	888	loc	15984
Cost of materials				395461
Contingencies 1%				3955
Sub total 1				399415
Labour Rate as per (1)				182110
Transport Rate (7047+3697)				10744
Sub total 2				592269
Estt. & Supervision charges 15%				88840
ESI @ 3.25% (Labour)				5919
EPF 13% (Labour)				23674
GST on labour & transport, ESI & EPF @ 18%				40040
Total				750743
Or Say Rs.				750740
NB CONTINGENCIES & STORAGE				

**For Deposit Contributory Works (DCW), Contingencies may be worked out @ 5% &
Storage worked out 3% may be included**

C.2. EXTENSION OF 1 KM. OF 11 KV LINE WITH 7/4.09 MM ACSR AT 60 M SPAN ON 9.00 M (30') RSJ POLES

Quantity	Description	Rate	Per	Amount
18	9.0 M (30') RSJ pole	12,001	E	216018
18	Base Plates	261	E	4698
18	Back Clamps	104	E	1872
16	1068 MM (3'-6")V Cross Arm	702	E	11232
16	HT Top insulator fittings	189	E	3024
48	11 KV pin insulators with pin (58+76)	134	E	6432
2	Tapping channel cross arm	913	E	1826
6	11 KV strain sets (316+203)	519	Set	3114
1	D.P. cross arm 10' centre	6,937	E	6937
1	Cross bracing set 10' centre	8,816	Set	8816
6	Stay set complete incl. GI wire (5kg), stay plate & stay clamp (pair) (413+5*78+261+242)	1306	Set	7836
6	Guy insulators	26	E	156
3.06	Raccoon ACSR Conductor 7/4.09 mm	71,830	Km	219800
18	Concreting	1022	Loc	18396
18	Earthing (Coil)	1290	Loc	23220
18	Bolts, Nuts and Binding wire etc.	888	loc	15984
	Cost of materials			549361
	Contingencies 1%			5494
	Sub total 1			554854
	Labour Rate as per I			182110
	Transport Rate (9315+3697)			13012
	Sub total 2			749976
	Estt. & Supervision charges 15%			112496
	ESI @ 3.25% (Labour)			5919
	EPF 13% (Labour)			23674
	GST on labour & transport, ESI & EPF @ 18%			40449
	Total			862473
	Or Say Rs.			862470
NB CONTINGENCIES & STORAGE				

**For Deposit Contributory Works (DCW), Contingencies may be worked out @ 5% &
Storage worked out 3% may be included**

D.1. EXTENSION OF 1 KM. OF LT 3 PHASE 4 WIRE LINE AT 45 M SPAN ON 8.0 M PSC (200 kg) POLES WITH 7/3.35 MM ACSR FOR PHASE AND NEUTRAL

Quantity	Description	Rate	Per	Amount
23	8.0 M (200 Kg) PSC pole	2,330	E	53590
23	Base Plates	261	E	6003
25	Back Clamps	104	E	2600
23	LT 3 phase cross arms (Channel)	471	E	10833
69	LT pin insulator with pin (20+37)	57	E	3933
8	Earthing device	670	Set	5360
25	Aluminium knobs	21	E	525
6	LT shackle with hardware (19+55)	74	Set	444
8	Stay set complete incl. GI wire (5kg), stay plate & stay clamp (pair) (413+5*78+261+242)	1306	Set	10448
8	Guy insulators	26	E	208
4.08	7/3.35 mm ACSR	38,681	Km	157818
8	Concreting	1022	Loc	8176
6	Earthing (Coil)	1290	Loc	7740
50	3 phase Line spacer/ line separator	280	Loc	14000
	Cost of materials			281678
	Contingencies 1%			2817
	Sub total 1			284495
	Labour Rate as per II			190730
	Transport Rate (5637+3169)			8806
	Sub total 2			484031
	Estt. & Supervision charges 15%			72605
	ESI @ 3.25% (Labour)			6199
	EPF 13% (Labour)			24795
	GST on labour & transport, ESI & EPF @ 18%			41495
	Total			556636
	Or Say Rs.			556640
NB CONTINGENCIES & STORAGE				
For Deposit Contributory Works (DCW), Contingencies may be worked out @ 5% & Storage worked out 3% may be included				

**D.2. EXTENSION OF 1 KM. OF LT 3 PHASE 4 WIRE LINE AT 45 M SPAN ON 8.0 M (200 kg)
PSC POLES, WITH 7/2.59 MM ACSR FOR PHASE AND NEUTRAL**

Quantity	Description	Rate	Per	Amount
23	8.0 M (200 Kg) PSC pole	2,330	E	53590
23	Base Plates	261	E	6003
25	Back Clamps	104	E	2600
23	LT 3 phase cross arms (Channel)	471	E	10833
69	LT pin insulator with pin (20+37)	57	E	3933
8	Earthing device	670	E	5360
25	Aluminium knobs	21	Set	525
6	LT shackle with hardware (19+55)	74	E	444
8	Stay set complete incl. GI wire (5kg), stay plate & stay clamp (pair) (413+5*78+261+242)	1306	Set	10448
8	Guy insulators	26	Set	208
4.08	7/2.59 mm ACSR	26,423	E	107806
8	Concreting	1022	Loc	8176
6	Earthing (Coil)	1290	Loc	7740
50	3phase Line spacer/ line separator	280	Loc	14000
	Cost of materials			231666
	Contingencies 1%			2317
	Sub total 1			233982
	Labour Rate as per (II)			190730
	Transport Rate (5637+1894)			8806
	Sub total 2			433518
	Estt. & Supervision charges 15%			65028
	ESI @ 3.25% (Labour)			6199
	EPF 13% (Labour)			24795
	GST on labour & transport, ESI & EPF @ 18%			41495
	Total			498546
	Or Say Rs.			498550
NB CONTINGENCIES & STORAGE				
For Deposit Contributory Works (DCW), Contingencies may be worked out @ 5% & Storage worked out 3% may be included				

**D.3. EXTENSION OF 1 KM. OF LT 1 PHASE 2 WIRE LINE AT 45 M SPAN ON 8.0M (200 kg)
PSC POLES, WITH 7/2.59 MM ACSR FOR PHASE AND NEUTRAL**

Quantity	Description	Rate	Per	Amount
23	8.0 M (200 Kg) PSC pole	2,330	E	53590
23	Base Plates	261	E	6003
25	Back Clamps	104	E	2600
23	LT sinlge phase cross arms (angle)	204	E	4692
25	LT pin insulator with pin (20+37)	57	E	1425
8	Earthing device	670	E	5360
25	Aluminium knobs	21	Set	525
6	LT shackle with hardware (19+55)	74	E	444
8	Stay set complete incl. GI wire (5kg), stay plate & stay clamp (pair) (413+5*78+261+242)	1306	Set	10448
8	Guy insulators	26	Set	208
2.04	7/2.59 mm ACSR	26,423	E	53903
8	Concreting	1022	Loc	8176
6	Earthing (Coil)	1290	Loc	7740
50	1 phase Line spacer/ line seperator	245	Loc	12250
Cost of materials				167364
Contingencies 1%				1674
Sub total 1				169038
Labour Rate as per (II)				190730
Transport Rate (6676+947)				7623
Sub total 2				367391
Estt. & Supervision charges 15%				55109
ESI @ 3.25% (Labour)				6199
EPF 13% (Labour)				24795
GST on labour & transport, ESI & EPF @ 18%				41282
Total				422499
Or Say Rs.				422500
NB CONTINGENCIES & STORAGE				
For Deposit Contributary Works (DCW), Contingencies may be worked out @ 5% & Storage worked out 3% may be included				

ABSTRACT OF COST OF ERECTION OF DISTRIBUTION TRANSFORMERS									
SL.No.	Details of Distribution Transformers	Total cost of materials			Labour Charges	Transport Charges	Estt. & Supr. Charges 15%	Total	Total Rounded off in Rs.
		Cost of materials	Contingencies	Total Cost					
1	2	3	4	5	6	7	8	9	10
E1	11 KV 433V/100 KVA (3 Star Rated)	230615	2306	232921	19820	2306	38257	293304	306370
E1(A)	11 KV 433V/100 KVA (Copper Winding) Energy Efficient Level 2	341802	3418	345220	19820	3418	55269	423727	436990
E2	11 KV 433V/250 KVA	557166	5572	562738	19820	5572	88219	676349	690000
E2(A)	11 KV 433V/250 KVA (Copper Winding) Energy Efficient Level 2	546584	5466	552050	19820	5466	86600	663936	677570
E3	11 KV 433V/500 KVA	766937	7669	774607	19820	7593	120303	922323	927520
E3(A)	11 KV 433V/500 KVA (Copper Winding) Energy Efficient Level 2	870619	8706	879325	19820	8706	136178	1044029	1058240
F1(A)	22 KV 433V/100 KVA (Copper Winding) Energy Efficient Level 2	382729	3827	386556	19820	3827	61531	471734	485070
F2(A)	22 KV 433V/200 KVA (Copper Winding) Energy Efficient Level 2	516859	5169	522028	19820	5169	82052	629069	642650
F3(A)	22 KV 433V/500 KVA (Copper Winding) Energy Efficient Level 2	776513	7765	784278	19820	7688	121768	933555	938660
F3	22 KV 433V/500 KVA	1015344	10153	1025497	19820	10153	158321	1213792	1228270

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E.1.(A) Cost of Erection of 1 No. 100 KVA, 11KV/433V (Copper Winding) Energy Efficient Level 2 Distribution Transformer on Structure with 9.0 M PSC Pole 400 kg working load				
Quantity	Description	Rate	Per	Amount
2	9.0 M PSC pole 400 kg WL	4,075	E	8150
2	Base Plates	261	E	522
1	Transformer structure materials including of structure clamps (13588+3718)	17306	Set	17306
1	11 KV AB switch with PT insulator	16038	Set	16038
1	11 KV HG fuse set (with 6 Nos. pin & pin insulator) 2038+804((76+58)*6=804)	2842	Set	2842
3	11 KV LAs	399	E	1197
1	Distrn.Transformer 100 KVA, 11 KV/433V (Copper Winding) Energy Efficient Level 2	260936	E	260936
1	Structure Earthing	6141	E	6141
4	Stay set complete incl. GI wire (5kg), stay plate & stay clamp (pair) (413+5*78+261+242)	1306	Set	5224
4	Guy insulators	26	E	104
1	Jumpering materials (25 sq mm single core PVC cable 25 mts, 240 sqmm lug 30 nos). (22*25)+(22*30)	1210	Set	1210
1	Concreting per structure	2044	Loc	2044
3	L.T. LAs	286	E	858
2	L.T. open type fuse units with 6 Nos. LT pin & insulators (1052+342 [6(20+37)]=1394)	1394	Set	2788
1	LT fixed capacitor 2x9 KVAR unit	14666	Set	14666
2	Bolts, Nuts and Binding wire etc.	888	LS	1776
Cost of materials				341802
Contingencies 1%				3418
Sub total 1				345220
Labour Rate as per (III)				23290
Transport 1%				3418
Sub total 2				371928
Estt. & Supervision charges 15%				55789
ESI @ 3.25% (Labour)				757
EPF 13% (Labour)				3028
GST on labour & transport, ESI & EPF @ 18%				5489
Total				436991
Or Say Rs.				436990
NB CONTINGENCIES & STORAGE				
For Deposit Contributory Works (DCW), Contingencies may be worked out @ 5% & Storage worked out 3% may be included				

E.1. COST OF ERECTION OF ONE NUMBER 100 KVA, 11KV/433V (3 STAR RATED) DISTRIBUTION TRANSFORMER ON STRUCTURE WITH 9.0 M PSC POLE 400 KG WL

Quantity	Description	Rate	Per	Amount
2	9.0 M PSC pole 400 kg WL	4,075	E	8150
2	Base Plates	261	E	522
1	Transformer structure materials including of structure clamps (13588+3718)	17306	Set	17306
1	11 KV AB switch with PT insulator	16038	Set	16038
1	11 KV HG fuse set (with 6 Nos. pin & pin insulator) 2038+804((76+58)*6=804)	2842	Set	2842
3	11 KV LAs	399	Set	1197
1	Distrn. Transformer 100 KVA, 11 KV/433V (3 Star Rated)	149749	E	149749
1	Structure Earthing	6141	E	6141
4	Stay set complete incl. GI wire (5kg), stay plate & stay clamp (pair) (413+5*78+261+242)	1306	Set	5224
4	Guy insulators	26	E	104
1	Jumpering materials (25 sq mm single core PVC cable 25 mts, 240 sqmm lug 30 nos). (22*25)+(22*30)	1210	Set	1210
1	Concreting per structure	2044	Loc	2044
3	L.T. LAs	286	E	858
2	L.T. open type fuse units with 6 Nos. LT pin & insulators (1052+342 [6(20+37)]=1394)	1394	Set	2788
1	LT fixed capacitor 2x9 KVAR unit	14666	Set	14666
2	Bolts, Nuts and Binding wire etc.	888	LS	1776
Cost of materials				230615
Contingencies 1%				2306
Sub total 1				232921
Labour Rate as per (III)				23290
Transport 1%				2306
Sub total 2				258517
Estt. & Supervision charges 15%				38778
ESI @ 3.25% (Labour)				757
EPF 13% (Labour)				3028
GST on labour & transport, ESI & EPF @ 18%				5289
Total				306368
Or Say Rs.				306370

NB CONTINGENCIES & STORAGE

For Deposit Contributory Works (DCW), Contingencies may be worked out @ 5% & Storage worked out 3% may be included

E.2. COST OF ERECTION OF ONE NUMBER 250 KVA, 11KV / 433 V DISTRIBUTION TRANSFORMER ON STRUCTURE WITH 9.0 M PSC POLE 400 KG WL				
Quantity	Description	Rate	Per	Amount
	Cost of materials as per Item E.1			230615
1	Less cost of 1 No. 100KVA/11 KV/433V (3 Star Rated) D.T.	149749	E	149749
				80866
1	ADD cost of 1 No.250 KVA/11 KV/433V	476300	E	476300
	Cost of materials			557166
	Contingencies 1%			5572
	Sub total 1			562738
	Labour Rate as per (III)			23290
	Transport 1%			5572
	Sub total 2			591599
	Estt. & Supervision charges 15%			88740
	ESI @ 3.25% (Labour)			757
	EPF 13% (Labour)			3028
	GST on labour & transport, ESI & EPF @ 18%			5876
	Total			690000
	Or Say Rs.			690000

NB CONTINGENCIES & STORAGE

For Deposit Contributory Works (DCW), Contingencies may be worked out @ 5% & Storage worked out 3% may be included

**E.3. COST OF ERECTION OF ONE NUMBER 500 KVA, 11KV / 433 V DISTRIBUTION
TRANSFORMER ON STRUCTURE WITH 9.0 M PSC POLE 400 KG WL**

	Cost of materials as per Item E.1			230615
1	Less cost of 1 No. 100KVA/11 KV/433V (3 Star Rated) D.T.	149749	E	149749
				80866
1	ADD cost of 1 No.500 KVA/11 KV/433V	678478	E	678478
	Cost of materials			759344
	Contingencies 1%			7593
	Sub total 1			766,937
	Labour as per (III)			23290
	Transport 1%			7593
	Sub total 2			797821
	Estt. & Supervision charges 15%			119673
	ESI @ 3.25% (Labour)			757
	EPF 13% (Labour)			3028
	GST on labour & transport, ESI & EPF @ 18%			6240
	Total			927519
	Or Say Rs.			927520
NB CONTINGENCIES & STORAGE				
For Deposit Contributory Works (DCW), Contingencies may be worked out @ 5% & Storage worked out 3% may be included				

**E.2. (A)COST OF ERECTION OF ONE NUMBER 250 KVA, 11KV / 433 V (Copper Winding)
Energy Efficient Level 2 DISTRIBUTION TRANSFORMER ON STRUCTURE WITH 9.0 M
PSC POLE 400 KG WL**

Quantity	Description	Rate	Per	Amount
	Cost of materials as per Item E.1(A)			341802
1	Less cost of 1 No. 100KVA/11 KV/433V DT (Copper Winding) Energy Efficient Level 2	260,936	E	260936
				80866
1	ADD cost of 1 No.250 KVA/11 KV/433V (Copper winding) Energy Efficient Level 2	465718	E	465718
	Cost of Materials			546,584
	Contingencies 1%			5466
	Sub total 1			552,050
	Labour Rate as per (III)			23290
	Transport 1%			5466
	Sub total 2			580806
	Estt. & Supervision charges 15%			87121
	ESI @ 3.25% (Labour)			757
	EPF 13% (Labour)			3028
	GST on labour & transport, ESI & EPF @ 18%			5857
	Total			677568
	Or Say Rs.			677570
NB CONTINGENCIES & STORAGE				
For Deposit Contributory Works (DCW), Contingencies may be worked out @ 5% & Storage worked out 3% may be included				

**E.3. (A) COST OF ERECTION OF ONE NUMBER 500 KVA, 11KV / 433 V (Copper Winding)
Energy Efficient Level 2 DISTRIBUTION TRANSFORMER ON STRUCTURE WITH 9.14M
G.201 SPECIAL RCC POLE**

	Cost of materials as per Item E.1(A)			341802
1	Less cost of 1 No. 100KVA/11 KV/433V DT (Copper Winding) Energy Efficient Level 2	260,936	E	260936
				80866
1	ADD cost of 1 No.500 KVA/11 KV/433V (Copper winding) Energy Efficient Level 2	789753	E	789753
	Cost of Materials			870,619
	Contingencies 1%			8706
	Sub total 1			879,325
	Labour as per Statement A (III)			23290
	Transport 1%			8706
	Sub total 2			911321
	Estt. & Supervision charges 15%			136698
	ESI @ 3.25% (Labour)			757
	EPF 13% (Labour)			3028
	GST on labour & transport, ESI & EPF @ 18%			6441
	Total			1058245
	Or Say Rs.			1058240

**For Deposit Contributory Works (DCW), Contingencies may be worked out @ 5% &
Storage worked out 3% may be included**

**F.1.(A) COST OF ERECTION OF ONE NUMBER 100 KVA, 22 KV/433V (Copper Winding)
Energy Efficient Level 2 DISTRIBUTION TRANSFORMER ON STRUCTURE WITH 9.0 M
PSC POLE 400 KG WL.**

Quantity	Description	Rate	Per	Amount
2	9.0 M PSC pole 400 kg WL	4,075	E	8150
2	Base Plates	261	E	522
1	Transformer structure materials including of structure clamps (13588+3718)	17306	Set	17306
1	22 KV AB switch with PT insulator	17386	Set	17386
1	22 KV HG fuse set with 6 Nos.pin & pin insulators (2086+1734 ((160+129)*6)	3820	Set	3820
3	22 KV LAs	589	E	1767
1	Distrn.Transformer 100 KVA, 22 KV/433V (Copper Winding) Eneray Efficient Level 2	298963	E	298963
1	Structure Earthing	6141	E	6141
4	Stay set complete incl. GI wire (5kg), stay plate & stay clamp (pair) (413+5*78+261+242)	1306	Set	5224
4	Guy insulators	27	E	108
1	Jumpering materials (25 sq mm single core PVC cable 25 mts, 240 sqmm lug 30 nos). (22*25)+(22*30)	1210	Set	1210
1	Concreting per structure	2044	Loc	2044
3	L.T. LAs	286	E	858
2	L.T. open type fuse units with 6 Nos. LT pin & insulators (1052+342 [6(20+37)]=1394)	1394	Set	2788
1	LT fixed capacitor 2x9 KVAR unit	14666	Set	14666
2	Bolts, Nuts and Binding wire etc.	888	LS	1776
Cost of materials				382729
Contingencies 1%				3827
Sub total 1				386556
Labour Rate as per (III)				23290
Transport 1%				3827
Sub total 2				413674
Estt. & Supervision charges 15%				62051
ESI @ 3.25% (Labour)				757
EPF 13% (Labour)				3028
GST on labour & transport, ESI & EPF @ 18%				5562
Total				485072
Or Say Rs.				485070
NB CONTINGENCIES & STORAGE				
For Deposit Contributory Works (DCW), Contingencies may be worked out @ 5% & Storage worked out 3% may be included				

**F.2.(A) COST OF ERECTION OF ONE NUMBER 200 KVA, 22 KV/433V (Copper Winding)
Energy Efficient Level 2 DISTRIBUTION TRANSFORMER ON STRUCTURE WITH 9.0 M
PSC POLE 400 KG WL.**

	Cost of materials as per Item F.1(A)			382729
1	Less cost of 1 No. 100KVA/22 KV/433V (Copper Winding) Energy Efficient Level 2 D.T.	298,963	E	298963
				83766
1	ADD cost of 1 No.200 KVA/22 KV/433V (Copper Winding) Energy Efficient Level 2 D.T.	433,093	E	433093
	Cost of Materials			516,859
	Contingencies 1%			5169
	Sub total 1			522,028
	Labour as per Statement A (III)			23290
	Transport 1%			5169
	Sub total 2			550486
	Estt. & Supervision charges 15%			82573
	ESI @ 3.25% (Labour)			757
	EPF 13% (Labour)			3028
	GST on labour & transport, ESI & EPF @ 18%			5804
	Total			642648
	Or Say Rs.			642650

NB CONTINGENCIES & STORAGE

For Deposit Contributory Works (DCW), Contingencies may be worked out @ 5% & Storage worked out 3% may be included

**F.3.(A) COST OF ERECTION OF ONE NUMBER 500 KVA, 22 KV/433V (Copper Winding)
Energy Efficient Level 2 DISTRIBUTION TRANSFORMER ON STRUCTURE WITH 9.0 M
PSC POLE 400 KG WL.**

	Cost of materials as per Item F.1(A)			382729
1	Less cost of 1 No. 100KVA/22 KV/433V (Copper Winding) Energy Efficient Level 2 D.T.	298963	E	298963
				83766
1	ADD cost of 1 No.500 KVA/22 KV/433V (Copper Winding) Energy Efficient Level 2 D.T.	685059	E	685059
Cost of Materials				768,825
Contingencies 1%				7688
Sub total 1				776,513
Labour as per Statement A (III)				23290
Transport 1%				7688
Sub total 2				807492
Estt. & Supervision charges 15%				121124
ESI @ 3.25% (Labour)				757
EPF 13% (Labour)				3028
GST on labour & transport, ESI & EPF @ 18%				6257
Total				938657
Or Say Rs.				938660

NB CONTINGENCIES & STORAGE

**For Deposit Contributory Works (DCW), Contingencies may be worked out @ 5% &
Storage worked out 3% may be included**

**F.3. DO WITH 500 KVA TRANSFORMER 22 KV/433 V DISTRIBUTION TRANSFORMER
ON STRUCTURE WITH 9.0 M PSC POLE 400 KG WL.**

1	Cost of materials as per Item F.1(A) Less cost of 1 No. 100KVA/22 KV/433V (Copper Winding) Energy Efficient Level 2 D.T.	298963	E	382729 83766
1	ADD cost of 1 No.500 KVA/22 KV/433V DT	931578	E	931578
	Cost of Materials			1,015,344
	Contingencies 1%			10153
	Sub total 1			1,025,497
	Labour as per Statement A (III)			23290
	Transport 1%			10153
	Sub total 2			1058941
	Esst. & Supervision charges 15%			158841
	ESI @ 3.25% (Labour)			757
	EPF 13% (Labour)			3028
	GST on labour & transport, ESI & EPF @ 18%			6701
	Total			1228268
	Or Say Rs.			1228270

NB CONTINGENCIES & STORAGE

For Deposit Contributory Works (DCW), Contingencies may be worked out @ 5% &
Storage worked out 3% may be included

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G.1. COST OF CONVERSION FOR 22 KV LINE PER KM.

Sl.No.	Description of materials	Rate in Rs.	Per	ACSR 7/3.35 mm to		ACSR 7/2.59 mm to	
				with insertion of poles		on the same supports	
				Quantity	Amount	Quantity	Amount
1	9.0 M PSC pole 400 kg WL	4,075	E	6	24450		
2	Base Plate	261	E	6	1566		
3	Back clamp	104	E	6	624		
4	1373 mm (4'-6") cross arm	1241	E	6	7446		
5	HT Top insulator fittings	189	E	6	1134		
6	22 KV pin insulators with pin (129+160)	289	E	18	5202		
7	Coil Earthing etc.	1290	Loc	6	7740		
8	Bolt, Nuts, Binding wires etc.	888	Loc	6	5328		
9	7/4.09 mm ACSR	71,830	Km	3.06	219800		
10	7/2.59 mm ACSR	26,423	Km				
11	7/3.35 mm ACSR	38,681	Km			3.06	118364
	Cost of materials				273290		118364
	Contingencies 1%				2733		1184
	Total cost of materials				276023		119547
	Labour (STATEMENT- A- VIIib & VIIia)				89225		24242
	Transport Charges (STATEMENT- A- VIIib & VIIia)				3651		3651
	Sub total 2				368899		147440
	Estt.& Supervision charges 15%				55335		22116
	ESI @ 3.25% (Labour)				2900		788
	EPF 13% (Labour)				11599		3151
	GST on labour & transport, ESI & EPF @ 18%				19328		5730
	Total				458060		179226
	Less Credit (50% value)						
	(b) ACSR 7/2.59 mm	13,212	Km			3	39635
	(c) ACSR 7/3.35 mm	19,341	Km	3	58022		
	Total				58022		39635
	Nett.				400039		139591
	Say				400040		139590

G.2. COST OF CONVERSION FOR 11 KV LINE PER KM.

Sl.No.	Description of materials	Rate in Rs.	Per	ACSR 7/3.35 mm to		ACSR 7/2.59 mm to		
			7/4.09 mm with insertion of poles		7/4.09 mm with insertion of poles			
			Quantity	Amount	Quantity	Amount		
1	9.0 M PSC pole 300 kg WL	3,451	E	6	20706	7	24157	
2	Base Plate	261	E	6	1566	7	1827	
3	Back clamp	104	E	6	624	7	728	
4	1068 mm (3'-6") cross arm	702	E	6	4212	7	4914	
5	HT top insulator fittings	189	E	6	1134	7	1323	
6	11 KV pin insulator with pin (76+58)	134	E	18	2412	21	2814	
7	Earthing coil, etc.	1290	Loc	6	7740	7	9030	
8	Bolt, Nuts, Binding wires etc.	888	Loc	6	5328	7	6216	
9	7/4.09 mm ACSR	71,830	Km	3.06	219800	3.06	219800	
10	7/3.35 mm ACSR	38,681	Km		0			
11	7/2.59 mm ACSR	26,423	Km				0	
	Cost of materials				263522		270809	
	Contingencies 1%				2635		2708	
	Total cost of materials				266157		273517	
	Labour (VIIIf & VIIIf)				89225		89225	
	Transport Charges (VIIIf & VIIIf)				3651		3651	
	Sub total 2				359033		366393	
	Estt.& Supervision charges 15%				53855		54959	
	ESI @ 3.25% (Labour)				2900		2900	
	EPF 13% (Labour)				11599		11599	
	GST on labour & transport, ESI & EPF @ 18%				19328		19328	
	Total				446715		455178	
	Less Credit (50% value)							
	(a) ACSR 7/2.59 mm	13,000	Km			3	39000	
	(b) ACSR 7/3.35 mm	13,212	Km	3	39635			
	Total				39635		39000	
	Nett.				407080		416178	
	Say				407080		416180	

G.3. COST OF CONVERSION OF LT SINGLE PHASE LINE TO LT 3 PHASE 4 WIRE/5 WIRE FOR 1KM ON THE SAME SUPPORT

Sl.No.	Description of materials	Rate in Rs.	Per	2 wire to 4 wire required		3 wire to 5 wire required	
				P.7/3.35 mm N.7/2.59 mm		P.7/2.59 mm & N 7/2.59 mm	
				Quantity	Amount	Quantity	Amount
1	LT 3 phase cross arm(Angle)	469	E	23	10787	23	10787
2	LT shackle with hardware (19+55)	74	E	6	444	6	444
3	LT pin insulator with pin(20+37)	57	E	46	2622	46	2622
4	Bolts, Nuts, Binding wire etc.	888	Loc	23	20424	23	20424
5	7/3.35 mm ACSR	38,681	Km	2.04	78909	4.08	157818
	Cost of materials				113186		192095
	Contingencies 1%				1132		1921
	Total cost of materials				114318		194016
	Labour charges(STATEMENT- A- X)				48210		61482
	Transport charges(STATEMENT- A- X)				4868		4868
	Sub total 2				167396		260366
	Estt.& Supervision charges 15%				25109		39055
	ESI @ 3.25% (Labour)				1567		1998
	EPF 13% (Labour)				6267		7993
	GST on labour & transport, ESI & EPF @				10964		13741
	Total				211304		323154
	Less Credit (50% value)						
	(a) 1 phase cross arm (Angle)	114	Km	23	2611	23	2611
	(b) 7/2.59 mm ACSR	13212				2.04	26951
	Total				2611		2611
	Nett.				208693		320543
					208690		320540
	note. Three phase four wire for Rs.53080 ie. For single wire $53080/4 = 13270$ for 5 wire $53080+13270 = 66350$						

G.4. COST OF CONVERSION OF CONDUCTOR FOR 1 KM OF LT 3 PHASE 4 WIRE LINE

Sl.No.	Description of materials	Rate in Rs.	Per	ACSR 7/2.59 mm to		ACSR 7/2.59 mm to	
				7/3.35 mm	7/3.35 mm	(without insertion of poles)	on the same supports
			Quantity	Amount	Quantity	Amount	
1	7.5 M PSC Pole	2006	E	8	16048		
2	Base Plate	261	E	8	2088		
3	Back clamp	92	E	8	736		
4	LT 3 phase cross arm (Angle)	469	E	8	3752		
5	LT pin insulator with pin(20+37)	57	E	24	1368		
6	Aluminium knobs	21	E	8	168		
7	Coil Earthing , Bolts & Nuts & Binding wire etc. (1290+888)	2178	Loc	8	17424		
8	7/3.35 mm ACSR	38,681	Km	4.08	157818	4.08	157818
	Cost of materials				199402		157818
	Contingencies 1%				1994		1578
Total cost of materials					201397		159397
	Labour charges (STATEMENT- A- IXa & IXb)				112025		33323
	Transport charges (STATEMENT- A- IXa & IXb)				4868		4868
	Sub total 2				318290		197588
	Estt.& Supervision charges 15%				47743		29638
	ESI @ 3.25% (Labour)				3641		1083
	EPF 13% (Labour)				14563		4332
	GST on labour & transport, ESI & EPF @ 18%				24317		7849
	Total				408554		240490
	Less Credit (50% value)						
	(b) ACSR 7/2.59 mm	13212	Km	4	52846	4	52846
	Total				52846		52846
	Nett.				355708		187644
	Say				355710		187640

ACSR 7/3.35 mm to 7/4.09 mm on the same supports	
Quantity	Amount
3.06	219800
	0
	219800
	2198
221998	
	24242
	3651
249891	
	37484
	788
	3151
	5730
297044	
	0
3	39635
	39635
	257409
257410	

PORT	
quired	
	P.7/3.35 mm
	N.7/2.59 mm
Quantity	Amount
23	10787
6	444
46	2622
23	20424
2.04	78909
	113186
	1132
	114318
	61482
	4868
	180668
	27100
	1998
	7993
	13741
	231500
23	2611
	2611
	228890
	228890

H.1. COST OF ONE NO. INDUSTRIAL SERVICE CONNECTION UPTO 15 HP USING G.I.PIPE

Quantity	Description	Rate	Per	Amount
1.5	G.I. Wire 7/20 SWG	75.9	Kg	114
5	G.I. Pipe 40 MM	586	M	2930
90	PVC SC cable 6 Sq.mm	8.8	M	792
30	PVC SC cable 2.65 Sq.mm	7.55	M	227
3	Aerial fuse Unit 32 A	132	E	396
1	Aerial Board (200 x 200 x 12 mm)	75	E	75
1	Meter Board (457x610 x 12 mm)	734	E	734
3	SPIC cutout with fuse unit 32 Amps	45	E	135
1	Three Phase LTCT Operated Smart meter for consumer	9,123	E	9123
1	Coil earthing, Bolts, Nuts, Binding wire etc. (1290+888)	2178	LS	2178
Cost of materials				16703
Contingencies 1%				167
Total cost of materials				16870
Labour (STATEMENT-A -XII)				720
Transport 1%				169
Sub total 2				17759
Estt. & Supervision charges 15%				2664
Sub total 3				20423
ESI @ 3.25% (Labour)				23
EPF 13% (Labour)				94
GST on labour & transport, ESI & EPF @ 18%				181
Total				20721
Or Say Rs.				20720

NB CONTINGENCIES & STORAGE

For Deposit Contributory Works (DCW), Contingencies may be worked out @ 5% & Storage worked out 3% may be included

H.2. COST OF ONE NO. INDUSTRIAL SERVICE CONNECTION UPTO 15 HP USING PVC PIPE

Quantity	Description	Rate	Per	Amount
	Cost of materials as per Item H.1.			16703
5	Less cost of 40 MM GI pipe	586	M	2930
				13773
5	ADD cost of 40 MM PVC pipe	67	M	335
	Cost of Materials			14108
	Contingencies 1%			141
	Sub total 1			14249
	Labour (STATEMENT-A -XII)			720
	Transport 1%			142
	Sub total 2			15112
	Estt. & Supervision charges 15%			2267
	Sub total 3			17379
	ESI @ 3.25% (Labour)			23
	EPF 13% (Labour)			94
	GST on labour & transport, ESI & EPF @ 18%			176
	Total			17672
	Or Say Rs.			17670

NB CONTINGENCIES & STORAGE

For Deposit Contributory Works (DCW), Contingencies may be worked out @ 5% & Storage worked out 3% may be included

**H.3. COST OF ONE NO. INDUSTRIAL SERVICE CONNECTION ABOVE 15 HP
AND UPTO 50 HP USING G.I.PIPE**

Quantity	Description	Rate	Per	Amount
1.5	G.I. Wire 7/20 SWG	75.90	Kg	114
5	G.I. Pipe 50 MM	597	M	2985
90	PVC SC cable 50 Sq.mm	40.70	M	3663
30	PVC SC cable 25 Sq.mm	22.00	M	660
3	Aerial fuse Unit 100 A	642	E	1926
1	Aerial Board (200 x 200 x 12 mm)	75	E	75
1	Meter Board 24"x18" (457x610 x 12 mm)	734	E	734
3	SPIC cutout with fuse unit 100 Amps	389	E	1167
1	Three Phase LTCT Operated Smart meter for consumer	9,123	E	9123
1	Coil earthing, Bolts, Nuts, Binding wire etc.(1290+888)	2178	LS	2178
Cost of materials				22625
Contingencies 1%				226
Total cost of materials				22851
Labour (STATEMENT-A -XII)				720
Transport 1%				229
Sub total 2				23800
Estt. & Supervision charges 15%				3570
ESI @ 3.25% (Labour)				23
EPF 13% (Labour)				94
GST on labour & transport, ESI & EPF @ 18%				192
Total				27678
Or Say Rs.				27680

NB CONTINGENCIES & STORAGE

For Deposit Contributory Works (DCW), Contingencies may be worked out @ 5% & Storage worked out 3% may be included

**H.4. COST OF ONE NO. INDUSTRIAL SERVICE CONNECTION ABOVE 15 HP
UPTO 50 HP USING PVC PIPE**

Quantity	Description	Rate	Per	Amount
5	Cost of materials as per Item H.3.			22625
5	Less cost of 50 MM GI pipe	597	M	2985
				19640
	ADD cost of 50 MM PVC pipe	108	M	540
	Cost of Materials			20180
	Contingencies 1%			202
	Sub total 1			20382
	Labour (STATEMENT-A -XII)			720
	Transport 1%			204
	Sub total 2			21305
	Estt. & Supervision charges 15%			3196
	ESI @ 3.25% (Labour)			23
	EPF 13% (Labour)			94
	GST on labour & transport, ESI & EPF @ 18%			187
	Total			24806
	Or Say Rs.			24810

NB CONTINGENCIES & STORAGE

For Deposit Contributory Works (DCW), Contingencies may be worked out @ 5% & Storage worked out 3% may be included

H.5. COST OF ONE NO. AGRICULTURAL SERVICE CONNECTION WITH G.I.
PIPE

Quantity	Description	Rate	Per	Amount
5	G.I.Pipe 40 MM	586	M	2930
21	PVC SC cable 6 Sq.mm	8.8	M	184.8
7	PVC SC cable 2.65 Sq.mm	7.55	M	52.85
3	Aerial fuse Unit 32 A	195	E	585
1	Aerial board (200 x 200 x 12 mm)	75	E	75
1	‘B’ Type Box	1274	E	1274
1	Meter Board (457x610 x 12 mm)	734	E	734
3	SPIC cutout with fuse unit 32 Amps	45	E	135
1	Three Phase LTCT Operated Smart meter for consumer	9,123	E	9123
1	Coil earthing, Bolts, Nuts, Binding wire etc.(1290+888) Cost of materials	1980	LS	1980 17074
	Contingencies 1%			171
	Total cost of materials			17244
	Labour (STATEMENT-A -XIII			390
	Transport 1%			172
	Sub total 2			17807
	Estt. & Supervision charges 15%			2671
	ESI @ 3.25% (Labour)			13
	EPF 13% (Labour)			51
	GST on labour & transport, ESI & EPF @ 18%			113
	Total			20654
Or Say Rs.				20650

H.6. COST OF ONE NO. AGRICULTURAL SERVICE CONNECTION WITH PVC

PTPF

	Cost of materials as per Item H.5.			17074
5	Less cost of 40 MM GI pipe	586	E	2930 14144
5	ADD cost of 40 MM PVC pipe	67	E	335
	Sub total - 1			14479
	Contingencies 1%			145
	Sub total - 2			14623
	Labour (STATEMENT-A -XIII)			390
	Transport 1%			146
	Sub total - 3			15160
	Estt. & Supervision charges 15%			2274
	ESI @ 3.25% (Labour)			13
	EPF 13% (Labour)			51
	GST on labour & transport, ESI & EPF @ 18%			108
	Total			17605
	Or Say Rs.			17600

NB CONTINGENCIES & STORAGE

For Deposit Contributory Works (DCW), Contingencies may be worked out @ 5% & Storage worked out 3% may be included

**H.7. COST OF ONE NO. DOMESTIC AND COMMERCIAL SERVICE CONNECTION
WITH SINGLE PHASE STATIC METER**

Quantity	Description	Rate	Per	Amount
1	Single phase whole current smart meter 5-20/30 A	3509	E	3509
1	SPIC Cutout 32 Amps	45	E	45
	Cost of materials			3554
	Contingencies 1%			36
	Sub-total-1			3590
	Labour (STATEMENT-A -XIV)			350
	Transport 1%			36
	Sub-total-2			3975
	Estt. & Supervision charges 15%			596
	Sub-total-3			4572
	ESI @ 3.25% (Labour)			11
	EPF 13% (Labour)			46
	GST on labour & transport, ESI & EPF @ 18%			80
	Total			4708
Or Say Rs.				4710

H.8. COST OF ONE NO. STREET LIGHT FIXTURE COMPLETE SET

Quantity	Description	Rate	Per	Amount
1	Single phase 1.22 M 40W Flourescent Tube light fitting without bulb	903	E	903
1	Street light fixture pipe	352	E	352
2	Street light fixture clamps	316	Pair	632
1	1.22M 40W Fluorescent tube light	40	E	40
	Sub-total-1			1927
Contingencies 1%				19
	Sub-total-2			1946
Labour (STATEMENT-A -XI)				310
Transport 1%				19
	Sub-total-3			2276
Estt. & Supervision charges 15%				341
ESI @ 3.25% (Labour)				10
EPF 13% (Labour)				40
GST on labour & transport, ESI & EPF @ 18%				68
Total				2736
Or Say Rs.				2740

NB CONTINGENCIES & STORAGE

For Deposit Contributory Works (DCW), Contingencies may be worked out @ 5% & Storage worked out 3% may be included

H.9. COST OF ONE NO. STREET LIGHT CONTROL WITH SINGLE PHASE whole current smart meter 5-20/30 A

Quantity	Description	Rate	Per	Amount
5	G.I.Pipe 20 MM	83	M	415
14	PVC SC cable 2.65 Sq.mm	7.55	M	106
1	Aerial fuse unit 16 A 415 V	51	E	51
1	'C' Type Box with clamp	674	E	674
1	Meter Board (457x305x12 mm)	599	E	599
1	Single phase whole current smart meter 5-20/3	3509	E	3509
1	Coil earthing, etc.	1290	LS	1290
1	Bolts, Nuts, Binding wire etc.	888	loc	888
	Sub-total-1			7532
	Contingencies 1%			75
	Sub-total-2			7607
	Labour (STATEMENT-A -XI)			310
	Transport 1%			76
	Sub-total-3			7993
	Estt. & Supervision charges 15%			1199
	ESI @ 3.25% (Labour)			10
	EPF 13% (Labour)			40
	GST on labour & transport, ESI & EPF @ 18%			79
	Total			9321
Or Say Rs.				9320

EXTENSION OF 2 WIRE LINE FOR A SPAN OF 60 METERS AND ERECTION OF 1 NO ADDITIONAL STREET LIGHT WHERE THE STREET LIGHT AND SWITCHING ARRANGEMENTS ARE AVAILABLE.

SL NO	DESCRIPTION OF WORK	Rs.
1	Cost of erection of one number street light per pole span when fittings (Tube light) are supplied by Local Body	13200
2	Cost of erection of one number street light per pole span when fittings (Tube light) are supplied by TANGEDCO	14850
3	Cost of erection of one number street light per pole span when fittings (Sodium Vapour Lamp) are supplied by TANGEDCO	19800

As per (Per) CMD TANGEDCO Pro.No.299 Dated.25th July 2013.

NB CONTINGENCIES & STORAGE

For Deposit Contributory Works (DCW), Contingencies may be worked out @ 5% & Storage worked out 3% may be included

CONSUMER CONTRIBUTION							
H-10 COST OF ONE NO. DOMESTIC SERVICE CONNECTION (SINGLE PHASE USING GI PIPE)							
SL NO.	DESCRIPTION	RATE Rs.	PER	NON-VARIABLE		VARIABLE	
				QUANTITY	AMOUNT Rs.	QUANTITY	AMOUNT Rs.
1	G.I Pipe 20mm	83	M	5	415		
2	PVC SC Cable 2.65 Sq.mm	7.55	M	14	106	10	76
3	G.I.Wire 7/20 SWG	75.9	Kg	0.5	38	0.3	23
4	Earthing Terminal	61	E	1	61		
5	Clips, U-Clamp etc.,	67	LS	1	67	1	67
	Cost of materials				687		165
	Contingencies 1%				7		2
	Total cost of materials				694		167
	Labour as per Statement XIV				62		15
	Transport 1%				7		2
	Sub-total				763		184
	Estt. & Supervision charges 15%				114		28
	ESI @ 3.25% (Labour)				2		0
	EPF 13% (Labour)				8		2
	GST on labour & transport, ESI & EPF @ 18%				14		3
	Total				902		217
total cost of consumer contribution (902+217)=1119				or say Rs.1119			

NB CONTINGENCIES & STORAGE

For Deposit Contributory Works (DCW), Contingencies may be worked out @ 5% & Storage worked out 3% may be included

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**I.1. COST OF ONE NO.11 KV DISTRIBUTION TRANSFORMER STRUCTURE
(STRUCTURE ONLY WITHOUT DT)**

Quantity	Item	Rate	Per	Amount
2	9.0 M PSC pole 400 kg WL	4,075	Nos.	8150
2	Base Plate	261	Nos.	522
1	Transformer structure materials including of structure clamps (13588+3718)	17306	Set	17306
1	11 KV AB Switch with PT insulators	16,038	Set	16038
1	11 KV HG Fuse set (with 6 Nos.pin & pin insulator) (2038+804((76+58)*6)=804)	2842	Set	2842
3	11 KV LAs	399	Set	1197
4	Stay set complete incl. GI wire (5kg), stay plate & stay clamp (pair) (413+5*78+261+242)=1306	1306	Sets	5224
1	Guy Insulator	27	No	27
1	Jumpering materials (25 sq mm single core PVC cable 25 mts, 240 sqmm lug 30 nos). (22*25)+(22*30)	1210	Set	1210
1	Structure earthing arrangement	6141	Set	6141
1	Structures concreting	2044	set	2044
2	Bolts ,Nuts and Binding wire etc	888	each	1776
Cost of materials				62477
Contingencies 1%				625
Total cost of materials				63102
Labour (STATEMENT-A-III)				23290
Transport 1%				631
Sub total - 1				87023
Estt. & Supervision charges 15%				13053
Sub total - 2				100076
ESI @ 3.25% (Labour)				757
EPF 13% (Labour)				3028
GST on labour & transport, ESI & EPF @ 18%				4987
Total				108848
Or Say Rs.				108850
NB CONTINGENCIES & STORAGE				
For Deposit Contributory Works (DCW), Contingencies may be worked out @ 5% & Storage worked out 3% may be included				

I.2. TAPPING STRUCTURE WITH AB SWITCH				
Quantity	Item	Rate	Per	Amount
2	9.0 M PSC pole 400 kg WL	4,075	Nos.	8150
2	Base Plate	261	Nos.	522
1	11 KV AB Switch with PT Insulator	16,038	Nos.	16038
1	Double channel cross arm	6,937	No.	6937
1	Cross bracing set	8,816	No.	8816
2	Stay set complete incl. GI wire (5kg), stay plate & stay clamp (pair) (413+5*78+261+242)=1306	1306	Sets	2612
1	Guy Insulator	27	No	27
1	Structure concreting	2,044	Set	2044
1	Structure earthing arrangement	6,141	Loc	6141
2	Bolts ,Nuts and Binding wire etc	888	each	1776
Cost of materials				53063
Contingencies 1%				531
Total cost of materials				53594
Labour (STATEMENT-A XVII)				8780
Transport 1%				536
Sub total 1				62910
Estt. & Supervision charges 15%				9436
Sub total 2				72346
ESI @ 3.25% (Labour)				285
EPF 13% (Labour)				1141
GST on labour & transport, ESI & EPF @ 18%				1934
Total				75706
Or Say Rs.				<u>75710</u>
NB CONTINGENCIES & STORAGE				
For Deposit Contributory Works (DCW), Contingencies may be worked out @ 5% & Storage worked out 3% may be included				

I.3. CROSS BRACING STRUCTURE				
Quantity	Item	Rate	Per	Amount
2	9.0 M PSC pole 400 kg WL	4,075	Nos.	8150
2	Base Plate	261	Nos.	522
1	Cross bracing set	8,816	No.	8816
2	Stay set complete incl. GI wire (5kg), stay plate & stay clamp (pair) $(413+5*78+261+242)=1306$	1306	Sets	2612
1	Guy Insulator	27	No	27
1	Structure concreting	2,044	Set	2044
1	Structure earthing arrangement	6,141	Loc	6141
2	Bolts ,Nuts and Binding wire etc.	888	each	1776
Cost of materials				30088
Contingencies 1%				301
Total cost of materials				30389
Labour (STATEMENT-A. XVI)				8340
Transport 1%				304
Sub total 1				39033
Estt. & Supervision charges 15%				5855
Sub total 2				44888
ESI @ 3.25% (Labour)				271
EPF 13% (Labour)				1084
GST on labour & transport, ESI & EPF @ 18%				1800
Total				48043
Or Say Rs.				48040
NB CONTINGENCIES & STORAGE				
For Deposit Contributory Works (DCW), Contingencies may be worked out @ 5% & Storage worked out 3% may be included				

I.4. RAILWAY CROSSING STRUCTURE				
Quantity	Item	Rate	Per	Amount
2	42' RSJ pole (12.8m) (250mm X 125 mm)	21085	Nos.	42170
2	Special X arms (10m) (125x65 channel) Weight/m = 10.7 kg 10 m x 10.7 Kgs x 2 Nos. RSJ Poles = 214 Kgs.	61.36	Kg	13131
12	11 KV Strain Disc +Metal parts (316+203)	519	Nos.	6228
2	Guarding Cross arm	857	No.	1714
2	Stay set complete incl. GI wire (5kg), stay plate & stay clamp (pair) $(413+5*78+261+242)=1306$	1306	Sets	2612
2	Guy Insulators	27	Nos.	54
30	GI Solid Wire 8 SWG for lacing (300 m)	69.33	kg.	2080
27	GI No.6 SWG (for bearer wire 180 m)	70.11	kg	1893
1	Structure Concreting	2,044	Loc	2044
1	Structure earthing	6,141	Loc	6141
2	Bolts ,Nuts and Binding wire etc.	888	each	1776
Cost of materials				79843
Contingencies 1%				798
Total cost of materials				80641
Labour (Statement-A XV)				7820
Transport 1%				806
ESI @ 3.25% (Labour)				254
EPF 13% (Labour)				1017
GST on labour & transport, ESI & EPF @ 18%				1781
Sub total 2				92320
Estt. & Supervision charges 15%				13848
Total				106168
Or Say Rs.				106170

NB CONTINGENCIES & STORAGE

For Deposit Contributory Works (DCW), Contingencies may be worked out @ 5% & Storage worked out 3% may be included

**I.1.A COST OF ONE NO.22 KV DISTRIBUTION TRANSFORMER STRUCTURE
(STRUCTURE ONLY WITHOUT DT)**

Quantity	Item	Rate	Per	Amount
2	9.0 M PSC pole 400 kg WL	4,075	Nos.	8150
2	Base Plate	261	Nos.	522
1	Transformer structure materials including of structure clamps (13588+3718)	17306	Set	17306
1	22 KV AB switch with PT insulator	17386	Set	17386
1	22 KV HG fuse set with 6 Nos.pin & pin insulators (2086+1734 ((160+129)*6)	3820	Set	3820
3	22 KV LAs	589	Set	1767
4	Stay set complete incl. GI wire (5kg), stay plate & stay clamp (pair) $(413+5*78+261+242)=1306$	1306	Sets	5224
1	Guy Insulator	27	No	27
1	Jumpering materials (25 sq mm single core PVC cable 25 mts, 240 sqmm lug 30 nos). $(22*25)+(22*30)$	1210	Set	1210
1	Structure earthing arrangement	6141	Set	6141
1	Structures concreting	2,044	Set	2044
2	Bolts ,Nuts and Binding wire etc	888	each	1776
Cost of materials				65373
Contingencies 1%				654
Total cost of materials				66027
Labour (STATEMENT-A-III)				23290
Transport 1%				660
Sub total - 1				89977
Estt. & Supervision charges 15%				13497
Sub total - 2				103474
ESI @ 3.25% (Labour)				757
EPF 13% (Labour)				3028
GST on labour & transport, ESI & EPF @ 18%				4992
Total				112250
				112250

NB CONTINGENCIES & STORAGE

For Deposit Contributory Works (DCW), Contingencies may be worked out @ 5% & Storage worked out 3% may be included

Regulation Constants for LT OH lines using ACSR conductors of various sizes at 50 Cycles per Second per 100 KVA per KM

I. All Aluminium Conductor(AAC), Alluminium Conductor Steel Reinforced (ACSR)and copper conductors for LT voltage

Sl.No.	Size of conductor and materials		Phase to Phase voltage	Equivalent copper area Sq.mm	Equivalent spacing in Metre	Resistance at 40 C Ohms/KM	Reactance Ohms/Km	Regulation constant in percentage for power factor of							
	MM	Inch						0.8 lag	0.9 lag	1.0					
T1	AAC														
	1	7/2.96		7/0.077	415V	13.0	0.483	1.472	0.3396	80.50					
	2	7/2.44		7/0.096	415V	20.0	0.483	0.950	0.3230	55.40					
	3	7/2.59		7/0.110	415V	25.0	0.483	0.726	0.3140	44.60					
	4	7/3.40		7/0.134	415V	40.0	0.483	0.489	0.3020	33.20					
	ACSR														
	1	7/2.11		7/0.083	415V	12.9	0.483	1.486	0.3530	74.51					
	2	7/2.59	7/0.802	415V	19.4	0.483	0.985	0.3400	52.77	55.05					
	3	7/3.00	7/0.118	415V	25.8	0.483	0.734	0.3350	41.93	42.92					
	4	7/3.35	7/0.132	415V	32.3	0.483	0.587	0.3320	35.58	35.80					
	5	7/3.66	7/0.144	415V	38.7	0.483	0.493	0.3300	31.52	31.26					
	COPPER														
		No.8 SWG	415V		0.483	1.438	0.3560	85.50	90.50	89.70					
		No.6 SWG	415V		0.483	0.995	0.3440	62.50	65.40	62.30					
		No.4 SWG	415V		0.483	0.684	0.3330	46.60	47.60	42.70					
		No.2 SWG	415V		0.483	0.483	0.3210	36.20	35.80	30.20					

Note: Reactance of ACSR conductors at 1,000 A/Sq. inch has been taken from alignment chart given in "Electrical Characteristics of OH lines" by S.Butterworth One H.P. may be taken as one KVA at 0.8 Power Factor

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Regulation constants for HT OH Lines using various conductors at 50 C/S per 100 KVA per KM

1. 11 KV Lines

Sl.No.	Size of Conductors	Commercial Name	Resistance at 40 C Ohms/Km	Reactance Ohms/Km	POWER FACTOR										
					0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	1.00
1	7/2.11 mm ACSR 13 mm ²	Squirrel	1.4860	0.3900	0.0893	0.0945	0.0995	0.1044	0.1090	0.1135	0.1176	0.1214	0.1246	0.1267	0.1228
2	7/2.36 mm ACSR 16 mm ²	Gopher	1.1850	0.3865	0.0766	0.0806	0.0806	0.0880	0.0914	0.0947	0.0975	0.1101	0.1021	0.1030	0.0979
3	7/2.59 mm ACSR 20 mm²	Weasel	0.9850	0.3820	0.0680	0.0712	0.0712	0.0769	0.0796	0.0820	0.0841	0.0858	0.0871	0.0872	0.0814
4	7/3.00 mm ACSR 25 mm ²	Ferret	0.7340	0.3760	0.0572	0.0594	0.0594	0.0631	0.0647	0.0661	0.0672	0.0679	0.0682	0.0673	0.0607
5	7/3.35 mm ACSR 30 mm²	Rabbit	0.5870	0.3700	0.0507	0.0523	0.0523	0.0548	0.0558	0.0565	0.0572	0.0574	0.0570	0.0556	0.0485
6	7/3.66 mm ACSR 40 mm ²	Mink	0.4930	0.3650	0.0465	0.0476	0.0476	0.0494	0.0499	0.0504	0.0507	0.0505	0.0499	0.0481	0.0407
7	7/4.09 mm ACSR										0.04471				
8	3/0.104 Inch Copper		1.1740	0.3870	0.0762	0.0793	0.0793	0.0874	0.0908	0.0940	0.0968	0.0993	0.1013	0.1022	0.0970
9	7/0.074 Inch Copper		1.0000	0.3830	0.0687	0.0719	0.0719	0.0778	0.0805	0.0830	0.0851	0.0869	0.0882	0.0884	0.0826
10	7/0.080 Inch Copper		0.8580	0.3780	0.0625	0.0651	0.0651	0.0699	0.0720	0.0739	0.0755	0.0767	0.0775	0.0771	0.0709
11	19/0.052 Inch Copper		0.7430	0.3710	0.0573	0.0594	0.0594	0.0632	0.0649	0.0664	0.0675	0.0684	0.0684	0.0687	0.0614
12	19/0.064 Inch Copper		0.4960	0.3580	0.0461	0.0473	0.0473	0.0492	0.0498	0.0504	0.0506	0.0504	0.0498	0.0482	0.0410

Regulation constants for LT OH Lines using various conductors at 50 C/S per 100 KVA per KM

1. 22 KV Lines

Sl.No.	Size of Conductors	Commercial Name	Resistance at 40 C Ohms/Km	Reactance Ohms/Km	POWER FACTOR										
					0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	1.00
1	7/2.11 mm ACSR 13 mm ²	Squirrel	1.486	0.400	0.0225	0.0238	0.0250	0.0260	0.0274	0.0285	0.0295	0.0304	0.0312	0.0317	0.0307
2	7/2.36 mm ACSR 16 mm ²	Gopher	1.185	0.396	0.0193	0.0203	0.0212	0.0219	0.0230	0.0238	0.0245	0.0251	0.0256	0.0258	0.0245
3	7/2.59 mm ACSR 20 mm²	Weasel	0.985	0.392	0.0172	0.0180	0.0187	0.0194	0.0200	0.0206	0.0211	0.0216	0.0219	0.0219	0.0203
4	7/3.00 mm ACSR 25 mm ²	Ferret	0.734	0.386	0.0145	0.0150	0.0155	0.0159	0.0163	0.0167	0.0169	0.0171	0.0171	0.0169	0.0152
5	7/3.35 mm ACSR 30 mm²	Rabbit	0.587	0.383	0.0129	0.0133	0.0136	0.0139	0.0141	0.0143	0.0145	0.0145	0.0144	0.0140	0.0121
6	7/3.66 mm ACSR 40 mm ²	Mink	0.493	0.380	0.0119	0.0122	0.0124	0.0126	0.0127	0.0128	0.0129	0.0128	0.0126	0.0121	0.0102
7	3/0.104 Inch Copper		1.174	0.396	0.0192	0.0202	0.0211	0.0220	0.0228	0.0236	0.0243	0.0249	0.0254	0.0256	0.0243
8	7/0.074 Inch Copper		1.000	0.392	0.0173	0.0181	0.0189	0.0196	0.0202	0.0207	0.0214	0.0218	0.0221	0.0222	0.0207
9	7/0.080 Inch Copper		0.853	0.387	0.0158	0.0164	0.0170	0.0176	0.0181	0.0186	0.0190	0.0193	0.0194	0.0193	0.0177
10	19/0.052 Inch Copper		0.743	0.380	0.0145	0.0150	0.0155	0.0159	0.0164	0.0167	0.0170	0.0172	0.0173	0.0170	0.0154
11	19/0.064 Inch Copper		0.496	0.367	0.0117	0.0120	0.0122	0.0124	0.0126	0.0127	0.0127	0.0127	0.0125	0.0121	0.0102

3. 33 KV LINES

Sl.No.	Size of conductor		Phase to	Equivalent	Equivalent	Resistance	Reactance	Regulation constant in		
	and materials		Phase	copper area	spacing in	at 40 C	Ohms/Km	percentage for power factor of		
	MM	Inch	voltage	Sq.mm	Metre	Ohms/KM		0.8 lag	0.9 lag	1.0
1	7/2.36	7/0.093	33 KV	16	1.371	1.185	0.4130	0.0110	0.0114	0.0109
2	7/2.59	7/0.102	33 KV	20	1.371	0.985	0.4085	0.0095	0.0098	0.0091
3	7/3.00	7/0.118	33 KV	25	1.371	0.734	0.4030	0.0076	0.0077	0.0067
4	7/3.35							0.0067		
5	7/3.66	7/0.144	33 KV	40	1.371	0.493	0.3980	0.0058	0.0057	0.0045
6	7/4.09							0.0051		
7	6/4.72+ 7/1.57							0.00421		

Note: Reactance of ACSR conductors at 1,000 A/Sq. inch has been taken from alignment chart given in "Electrical Characteristics of OH lines" by S.Butterworth

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4. 66 KV LINES

Sl. No.	Size of ACSR conductors in mm (inch)	Equivalent copper area in Sq.mm	Resistance at 40 C in Sq.mm	Reactance in Ohms/Km		Percentage Regulation at lagging Power Factor									
				Equivalent spacing of conductors in meters(ft)			Equivalent spacing of conductors in Metres (ft)								
				2.439 (8)			2.743 (9)			3.048 (10)					
				2.44	2.74	3.048	Power Factor			Power Factor			Power Factor		
				(8)	(9)	(10)	0.8	0.9	1.0	0.8	0.9	1.0	0.8	0.9	1.0
1	7/3.66 (7/.144)	40	0.493	0.43	0.45	0.00150	0.00145	0.00113	0.00151	0.00146	0.00113	0.00152	0.00147	0.00147	0.00113
2	7/4.09 (7/.161)	48	0.395	0.43	0.44	0.00132	0.00125	0.00091	0.00133	0.00125	0.00091	0.00134	0.00126	0.00126	0.00091
3	6/4.72 + 7/1.57(6/.186+7/.062)	65	0.296	0.42	0.43	0.00112	0.00103	0.00068	0.00113	0.00104	0.00068	0.00114	0.00104	0.00104	0.00068
4	6/5.28+7/1.76 (6/.208+7/.0693)	80	0.236	0.41	0.42	0.00100	0.00090	0.00054	0.00101	0.00090	0.00054	0.00101	0.00091	0.00091	0.00054
5	37/2.36 (37/.0693)	80	0.24	0.37	0.39	0.00096	0.00087	0.00055	0.00097	0.00088	0.00055	0.00097	0.00088	0.00088	0.00055
6	37/2.59 (37/.102)	95	0.199	0.37	0.380	0.00087	0.00079	0.00046	0.00088	0.00079	0.00046	0.00089	0.00079	0.00079	0.00046
7	37/2.79 (37/.110)	110	0.172	0.36	0.38	0.00082	0.00072	0.00040	0.00082	0.00072	0.00040	0.00083	0.00073	0.00083	0.00040
8	37/3.00 (37/.118)	113	0.149	0.36	0.37	0.00077	0.00067	0.00034	0.00078	0.00087	0.00034	0.00079	0.00068	0.00079	0.00034

Not Reactance of ACSR conductors at 155 amps per sq.mm (1,000 amps.per sq.inch) has been taken from Alignment chart given in

"Electrical Characteristics of OH lines" by S.Butterworth.

5. 110 KV LINES

Sl. No.	Size of ACSR conductors in mm (inch)	Equivalent copper area in Sq.mm	Resistance at 40 C in Sq.mm	Reactance in Ohms/Km		Percentage Regulation at lagging Power Factor									
				Equivalent spacing of conductors in meters(ft)			Equivalent spacing of conductors in Metres (ft)								
				3.963 (13)			4.572 (15)			4.877 (16)					
				3.96 (13)	4.57 (15)	4.877 (16)	Power Factor			Power Factor			Power Factor		
				0.8	0.9	1.0	0.8	0.9	1.0	0.8	0.9	1.0	0.8	0.9	1.0
1	6/4.72+7/1.57 (6/.186+7/.062)	65	0.296	0.44	0.45	0.457	0.00042	0.00038	0.00025	0.00042	0.00038	0.00025	0.00042	0.00038	0.00025
2	6/5.28+7/0.62 (6/.208+7/.0693)	80	0.236	0.44	0.45	0.449	0.00037	0.00033	0.00020	0.00038	0.00034	0.00020	0.00038	0.00034	0.00020
3	37/2.36 (37/.093)	80	0.240	0.4	0.41	0.417	0.00036	0.00032	0.00020	0.00036	0.00033	0.00020	0.00037	0.00033	0.00020

	(37/2.59)														
4	37/2.59 (37/.102) (37/.102)	95	0.199	0.4	0.41	0.411	0.00033	0.00029	0.00017	0.00034	0.00030	0.00017	0.00034	0.00030	0.00017
5	37/2.79 (37/.110) (37/.110)	110	0.172	0.39	0.4	0.405	0.00031	0.00027	0.00014	0.00031	0.00027	0.00014	0.00031	0.00027	0.00014
6	37/3.00 (37/.118) (37/.118)	130	0.149	0.39	0.4	0.399	0.00029	0.00025	0.00012	0.00030	0.00025	0.00012	0.00030	0.00026	0.00012

Current Carrying Capacity of Conductors

1. 11 KV LINES

14	7/4.50	7/0.177						229	285
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2. 33 KV LINES

Sl.No.	Commercial Name	Size MM/Inch	Conductor Inch	Equivalent Sq.mm	Constant for 0.8 PF LAG		Current Carrying Capacity in Amps	
					Per 100KV/KM	Per 100KVA/MLTS	AT 30	At 50
		O.H.CONDUCTOR						
1	Gopher	7/2.36mm	7/0.093	16	(0.0176)	88	109	
2	Weasel	7/2.59mm	7/0.102	25	0.011	(0.0152)	100	123
3	Ferret	7/3.00mm	7/0.118	25	0.0095	(0.01216)	125	155
4	Rabbit	7/3.35mm					148	183
5	Mink	7/3.66mm	7/0.144	40	0.0076	(0.00928)	167	208
6	Raccoon	7/4.09mm					229	
7	Dog	6/4.72+7/1.57		0.1			254	
6		3/0.104 inch			0.0058	(0.0070)		
7		7/0.080 inch			(0.004375)	0.131		
8		7/0.074 inch			(0.0081875)	0.0148		
9		19/0.052 inch			(0.00925)	0.0119	125	155
10		19/0.064 inch			(0.0074375)	0.0086	167	208
11		19/0.072 inch			(0.00475)	0.0076		
12	Leopard	6/0.208+7/0.0693"		0.125				

3. 11 KV UG CABLE

Sl.No.	Copper	Equivalent Alu.cable	Constant for 0.8 PF LAG		Resistance (Ω / Km.)	Current Carrying Capacity (in Ground) (Amps)
			Per 100KVA/1000 Yds.	Per 100 KVA/Km		
1	0.0225 Sq.inch	3x25 Sq.mm	0.0960	0.096x1.1 = 0.1056		104
2	0.04 Sq.inch	3x50 Sq.mm	0.0550	0.055x1.1 = 0.0605		145
3	0.06 Sq.inch	3x70 Sq.mm	0.0373	0.0373x1.1 = 0.04103		182
4	0.10 Sq.inch	3x120 Sq.mm	0.0235	0.0235x1.1 = 0.02585	0.253	241
5	0.25 Sq.inch	3x300 Sq.mm	0.0110	0.011x1.1 = 0.0121	0.149	381

4. 33 KV UG CABLE

Sl.No.	Aluminium Cable	Constant for 0.8 PF LAG Per 100 KVA/Km	Resistance (Ω / Km.)	Current Carrying Capacity (in Ground) (Amps)
1	3 x 400 sq.mm	0.000018	0.105	385
2	1 x 630 sq.mm	0.0000105	0.065	540

5. LT CABLE

Sl.No.	LT Cable	Current Carrying Capacity (in Ground) (Amps)
1	4 X 240 Sq.mm	326
2	4 x 120 sq.mm	223
3	4 x 25 sq.mm	112
4	2 x 16 sq.mm	88

DETAILED ESTIMATE for Erection of 25KVA/11KV HVDS with Single Pole Mounted Structure (BOARD SIDE) with switch

Sl.No.	DESCRIPTION	RATE	QTY	PER	AMOUNT
1	9 mtr long RCC pole (Square Section)	5842.00	1	E	5842.00
2	Base plate	261.00	1	E	261.00
3	Single Pole Transformer centre set suitable for 25 KVA Transformer (including transformer clamp)	5724.00	1	Set	5724.00
4	11 KV HVDS Single pole vertical type AB switch (GOS) with composite polymer insulator	16972.00	1	Set	16972.00
5	11 KV HG fuse Set with solid core insulator for (GOS) single pole structure - Vertical type	5892.00	1	Set	5892.00
6	11 KV Composite Pin insulators (including pin)	148.00	3	Nos	444.00
7	11 KV Polymer Composite disc Insulators (including metal parts)	140.00	3	Nos	420.00
8	HT TI Fitting	189.00	1	No	189.00
9	4.5 V X arm	1241.00	1	No	1241.00
10	Tapping Channel X arm	913.00	1	No	913.00
11	Back clamp	109.00	3	Nos	327.00
12	Stay set complete incl. GI wire (5kg), stay plate & stay clamp (pair) (413+5*78+261+242)	1306.00	1	Set	1306.00
13	HT Guy insulator	27.00	1	No	27.00
14	25 KVA,11 KV /433Volts Energy Efficient Level 2 Distribution Transformer	112665.00	1	No	112665.00
15	Earthing materials pipe type earthing	4000.00	2	Loc	8000.00
16	Concreting material for 9 mtr long RCC pole (Square Section)			Loc	0.00
a)	a) Base plate Concreting 1:4:8,500x650x150MM	109.00	0	Each	0.00
b)	b) Pole Concreting 1:2:4,500x500x1700MM	1022.00	1	Each	1022.00

c)	c) Coping Concreting 1:2:4, (as per actuals)	500.00	1	Each	500.00
18	11 KV Lightning Arrester, Metal oxide	399.00	3	Set	1197.00
19	LT LAS	286.00	3	Set	858.00
20	a) LT Protection Kit	4002.00	0	Kit	0.00
21	b)LT Wiring kit (double circuit)	6900.00	0	Kit	0.00
22	L.T. open type fuse units	1052.00	1	set	1052.00
23	Writing of name board and Caution/Danger Board	460.00	1	No	460.00
24	Anti-Climbing Device (12mtrs/1Kg GI Barbed Wire Lumpsom	85.00	15	Kg	1275.00
25	M.S Bolt , Nut and Binding wire	888.00	1	LS	888.00
26	COST OF MATERIALS				167475.00
27	Contigencies 1 %				1674.75
28	Sub total-1				169149.75
29	Labour (STATEMENT-XX)				28896.00
29a	Transport (STATEMENT-XX)				2080.00
30	Sub total-2				200125.75
31	Estt& Supervision 15 %				30018.86
	Sub total-3				230144.61
32	ESI @ 3.25% (Actual labour)				131.48
33	EPF 13%				525.91
34	GST on labour & transport, ESI & EPF @ 18%				5694.01
35	Total				236496.01
	TOTAL				236496.01
	Or Say				236500.00

DETAILED ESTIMATE for Erection of 25KVA/22KV HVDS with Single Pole Mounted Structure (BOARD SIDE) with switch

Sl.No.	DESCRIPTION	RATE	QTY	PER	AMOUNT
1	9 mtr long RCC pole (Square Section)	5842.00	1	E	5842.00
2	Base plate	261.00	1	E	261.00
3	Single Pole Transformer centre set suitable for 25 KVA Transformer (including transformer clamp)	7621.00	1	Set	7621.00
4	22KV HVDS Vertically mounted AB Switch with composite polymer insulator and 22 KV HG Fuse set with solid core type composite polymer insulator with all switch accessories	35400.00	1	Set	35400.00
6	22 KV Composite Pin insulators (including pin)	432.00	3	Nos	1296.00
7	22 KV Polymer Composite disc Insulators (including metal parts)	325.00	3	Nos	975.00
8	HT TI Fitting	189.00	1	No	189.00
9	4.5 V X arm	1241.00	1	No	1241.00
10	Tapping Channel X arm	913.00	1	No	913.00
11	Back clamp	109.00	3	Nos	327.00
12	Stay set complete incl. GI wire (5kg), stay plate & stay clamp (nair) (413+5*78+261+242)	1306.00	1	Set	1306.00
13	HT Guy insulator	27.00	1	No	27.00
14	25 KVA,22 KV /433Volts Distribution Transformer	217037.00	1	No	217037.00
15	Earthing materials pipe type earthing	4000.00	2	Loc	8000.00
16	Concreting material for 9 mtr long RCC pole (Square Section)			Loc	0.00
a)	a) Base plate Concreting 1:4:8.500x650x150MM	109.00	0	Each	0.00
b)	b) Pole Concreting 1:2:4.500x500x1700MM	1022.00	1	Each	1022.00
c)	c) Coping Concreting 1:2:4, (as per actuals)	500.00	1	Each	500.00
18	22 KV Lightning Arrester, Metal oxide	589.00	3	Set	1767.00
19	LT LAS	286.00	3	Set	858.00
20	a) LT Protection Kit	4002.00	0	Kit	0.00
21	b)LT Wiring kit (double circuit)	6900.00	0	Kit	0.00

Sl.No.	DESCRIPTION	RATE	QTY	PER	AMOUNT
22	L.T. open type fuse units	1052.00	1	set	1052.00
23	Writing of name board and Caution/Danger Board	460.00	1	No	460.00
24	Anti-Climbing Device (12mtrs/1Kg) GI Barbed Wire Lumpsum	85.00	15	Kg	1275.00
25	M.S Bolt , Nut and Binding wire	888.00	1	LS	888.00
26	COST OF MATERIALS				288257.00
27	Contigencies 1 %				2882.57
28	Sub total-1				291139.57
29	Labour (STATEMENT-XX)				28896.00
	Transport (STATEMENT-XX)				2080.00
30	Sub total-2				320035.57
31	Estt& Supervision 15 %				48005.34
	Sub total-3				368040.91
32	ESI @ 3.25% (Actual labour)				131.48
33	EPF 13%				525.91
34	GST on labour & transport, ESI & EPF @ 18%				5694.01
35	Total				374392.30
	TOTAL				374392.30
	Or Say				374390.00

COST OF LABOUR				
STATEMENT-A				
Sl.No.	Name of Work	Quantity	Rate Per each	Labour charge
I	FOR ERECTION OF 1 KM OF HT LINE			
1	Surveying	LS		352
2	Tree cutting	LS		416
3	Transport of poles from stores to site (per pole)	15	1784	26760
4	Transport of line materials from stores to site for 1 km.	15	650	9750
5	Excavation of pole pit	15	719	10785
6	Erection of base plate	15	100	1500
7	Erection of poles	15	760	11400
8	Concreting of poles	15	1853	27795
9	Earthing per pole	5	227	1135
10	Fixing of insulators and cross arms	11	378	4158
11	Fixing of Strain disc insulator	4	115	460
12	Paving and stringing of conductors for 1 KM	3	3848	11544
13	Fixing of special cross arms and cut point jumpers	4	322	1288
14	Excavation of Stay pit and erection of Stay set complete	6	1300	7800
15	Stay Concreting per pole	6	970	5820
16	Colour washing/Painting and numbering	15	447	6705
17	Erection of cross bracing	Per DP		396
18	Erection of DP Cross Arm	Per DP		362
19	Provision of guarding	LS		1650
	Cost of unskilled labour			130076
	ADD 40% towards cost of skilled labour			52030
	Total			182106
	Or say		Rs.	182110
II	FOR ERECTION OF 1 KM OF LT LINE			
1	Surveying	LS		346
2	Tree cutting	LS		450
3	Transport of poles from stores to site (per pole)	17	2261	38437
4	Transport of line materials from stores to site	17	650	11050
5	Excavation of pole pit	17	674	11458
6	Erection of base plate	17	50	850
7	Erection of poles	17	937	15929
8	Concreting of poles	6	1512	9072
9	Earthing per pole	6	155	930
10	Fixing of insulators and cross arms per pole	11	417	4587
11	Fixing of LT shackle with Metal Parts	6	58	348
12	Fixing of Aluminium Knob	17	30	510
13	Paving and stringing of conductors for 1 km. route length	4	3967	15868
14	Excavation, Erection of Stay pit and Stay concreting	6	2345	14070
15	Fixing of LT line spacer	32	80	2560
16	Fixing of "Pa" Jumpers	10	35	350
17	Colour washing/Painting and numbering per pole	17	457	7769
	Provision of guarding	LS	1650	1650
	Cost of unskilled labour			136234
	ADD 40% towards cost of skilled labour			54494
	Total			190728
	Or say		Rs.	190730

III	For distribution transformer structure with 10' centre including erection of distribution transformer	
	Cost of unskilled labour	16639
	ADD 40% towards cost of skilled labour	6656
	Total	23295
	Or say	Rs. 23290
IV	For erection of transformer structure only (excluding erection of transformer)	
		Labour charge
	Cost of unskilled labour	13937
	ADD 40% towards cost of skilled labour	5575
	Total	19512
	Or say	Rs. 19510
V	For erection of transformer only	
		Labour charge
	Cost of unskilled labour	1318
	ADD 40% towards cost of skilled labour	527
	Total	1845
	Or say	Rs. 1850
VI	For erection of switch gear and LAs	
		Labour charge
	Unskilled labour for erection of AB switches	1078
	Unskilled labour for erection of H.G Fuse Set	450
	Unskilled labour for erection of HT & LT LAs	381
	Unskilled labour for jumpering etc.,	550
	Unskilled labour for erection of LT open type fuse unit	925
	Cost of unskilled labour	3384
	ADD 40% towards cost of skilled labour	1354
	Total	4738
	Or say	Rs. 4740
VII	For enhancement of 11 KV or 22 KV distn.transformers	
	Unskilled labour for erection of distn.transformers	1318
	Unskilled labour for jumpering etc.	550
	Sub-total unskilled labour for erection	1868
	ADD 50% towards dismantling works	934
	Total unskilled labour dismantling and erection	2802
	ADD 40% towards skilled labour	1121
		3923
	ADD Transport of distribution transformer (To and Fro)	715
	Total for labour, dismantling and transport	4638
	Or say	Rs. 4640

VIII For conversion of 11 KV & 22 KV lines for a distance of 1 KM				
		Qty	Rate	abour charge
(a)	For conversion without insertion of pole Unskilled labour for paving and stringing of conductors ADD 50% towards dismantling charges Total ADD 40% towards skilled labour Total labour charges ADD transport charges from stores Total	3	3848	11544 5772 17316 6926 24242 3651 27893
	Or say		Rs. 27890	
(b)	For conversion with insertion of poles Unskilled labour for erection/insertion of poles with stay (Including earthing,concreting) Charges for restringing of conductor ADD 50%conductor dismantling charges ADD 40% for skilled labour ADD transport charges from stores Total	6 3	7736 3848	46416 11544 5772 63732 25493 3651 92876
	Or say		Rs. 92880	
IX	For conversion of LT 3 phase/4 wire line for a distance of 1 Km			
		Qty	Rate	abour charge
(a)	For conversion without pole insertion Unskilled labour for paving and stringing ADD 50% for dismantling Total labour for erection and dismantling ADD 40% towards skilled labour ADD transport charges from stores Total labour for erection and dismantling & transport of mateirals	4	3967	15868 7934 23802 9521 33323 4868 38191
	Or say		Rs. 38190	
(b)	For conversion with pole insertion Unskilled labour for erection/insertion of poles Unskilled labour conductor restringing ADD 50% for dismantling ADD 40% for skilled labour ADD transport charges for stores Total labour charges	8 4	7027 3967	56216 15868 7934 80018 32007 112025 4868 116893
	Or say		Rs. 116890	

X	For conversion of LT Single phase line to Three phase line for distance of 1 KM			
		Qty	Rate	Labour charge
	Labour for fixing LT insulators and cross arms Labour for paving and stringing of conductor	17 4	417 3967	7089 15868 22957
	ADD 50% for dismantling Total unskilled labour ADD 40% for skilled labour			11479 34436 13774 48210
	ADD transport charges from stores Total charges			4868 53078
	Or say		Rs.	53080
XI	For street light fixing			
				Labour charge
	Cost of unskilled labour ADD 40% towards cost of skilled labour Total			218 87 305
	Or say		Rs.	310
XII	For Industrial service connection			
				Labour charge
	Cost of unskilled labour ADD 40% towards cost of skilled labour Total			517 207 724
	Or say		Rs.	720
XIII	For Agricultural service connection			
				Labour charge
	Cost of unskilled labour ADD 40% towards cost of skilled labour Total			275 110 385
	Or say		Rs.	390
XIV	For Hut/Domestic/Commercial services			
				Labour charge
	Cost of unskilled labour ADD 40% towards cost of skilled labour Total			249 100 349
	Or say		Rs.	350
XV	For erection of Railway crossing structure			
				Labour charge
	Cost of unskilled labour ADD 40% towards cost of skilled labour Total			5990 2396 8386
	Or say		Rs.	8390
XVI	For erection of Cross Bracing structure			
				Labour charge
	Cost of unskilled labour ADD 40% towards cost of skilled labour Total			5956 2382 8338
	Or say		Rs.	8340

XVII	For erection of tapping structure with AB switch				
	Cost of unskilled labour ADD 40% towards cost of skilled labour Total				Labour charge
					6271
					2508
					8779
	Or say				Rs. 8780
XVIII	FOR LAYING OF 11 KV UG CABLE UPTO 1 KM.				
Sl.No.	Name of Work	Quantity	Unit	Rate Per each	Labour charge
1	Excavation of cable trench 0.6 mtrs width and 1.2 mtrs depth including cost of providing sign boards, danger lights, indication arrangements wherever necessary all lead, lift, labour and tools and plants etc., Complete.				
	Concrete Road - 10%	100	RM	320.00	32000.00
	Thar Road - 20%	200	RM	200.00	40000.00
	Normal Road, Earth - 70%	700	RM	120.00	84000.00
2	Laying of 300 Sq.mm XLPE cable	1000	RM	30.00	30000.00
3	Covering HT cable by cement "V" trough after covering the cable with good loose earth including loading, unloading and transport from stores to site and letter painting of feeding details & Cable size on the trough	1680	Each	21.00	35280.00
4	Laying of PVC/Spun pipe	180	mtr	20.00	3600.00
5	Erection of Joint Kit	6	Each	1100.00	6600.00
6	Erection of Indoor termination kits	1	Each	1100.00	1100.00
7	Outdoor termination kits	1	Each	1100.00	1100.00
8	Refilling with excavated earth layers well consolidated as per std specification including all materials, lead, lift etc., complete.	1000	RM	20.00	20000.00
	Cost of unskilled labour				253680.00
	ADD 40% towards cost of skilled labour				101472.00
	Sub-total 1				355152.00
9	Transporting of 11 KV HT cable from departmental stores to work spot by engaging private vehicle including recoiling, coiling and loading and unloading at both sides				
	3x300 Sq.mm XLPE / 3x120 Sq.mm XLPE (1 drum:200m)	6	each drum	2400.00	14400.00
10	Transporting of V trough and other materials viz., joint kits and termination kits	2	trip	2400.00	4800.00
11	Transport back any balance cable, empty drums and other materials if any by engaging private vehicle including recoiling, coiling and loading and unloading at both sides from workspot to departmental stores (minimum 2 empty drums)	3	trip	1650.00	4950.00
	Sub-total 2				24150.00
	Grand total (Sub-total 1+2)				379302.00
	Or say	Rs.	379300		

XIX	FOR LAYING OF LT UG CABLE UPTO 1KM.				
Sl.No.	Name of Work	Quantity	Unit	Rate Per each	Labour charge Rate in Rs.
1	Excavation of cable trench 45 cm width and 75 cm depth including cost of providing sign boards, danger lights, indication arrangements wherever necessary all lead, lift, labour and tools and plants etc., Complete.				
	Concrete Road - 10%	100	RM	240.00	24000.00
	Thar Road - 20%	200	RM	150.00	30000.00
	Normal Road, Earth - 70%	700	RM	90.00	63000.00
2	Laying of 240 Sq.mm XLPE cable	1000	RM	18.00	18000.00
3	Covering HT cable by cement "V" trough after covering the cable with good loose earth including loading, unloading and transport from stores to site and letter painting of feeding details & Cable size on the trough	1340	Each	15.00	20100.00
5	Erection of Joint Kit	2	Each	500.00	1000.00
6	Erection of HRC 4 way/6way/8way Pillar box	2	Each	4500.00	9000.00
8	Refilling with excavated earth layers well consolidated as per std specification including all materials, lead, lift etc., complete.	1000	RM	10.00	10000.00
	Cost of unskilled labour				175100.00
	ADD 40% towards cost of skilled labour				70040.00
	Sub-total 1				245140.00
9	Transporting of LT cable from departmental stores to work spot by engaging private vehicle including recoiling, coiling and loading and unloading at both sides				
	4x240 Sq.mm XLPE / 4x120 Sq.mm XLPE	3	each drum	1650.00	4950.00
10	Transporting of V trough, Pillar box etc	1	trip	1650.00	1650.00
11	Transport back any balance cable, empty drums and other materials if any by engaging private vehicle including recoiling, coiling and loading and unloading at both sides from workspot to departmental stores (minimum 2 empty drums)	1	trip	1650.00	1650.00
	Sub-total 2				8250.00
	Grand total (Sub-total 1+2)				253390.00
	Or say	Rs.	253390		

XX	ERCTION OF SINGLE POLE MOUNTED HVDS STRUCTURE				
Sl. No.	Name of Work	Quantity	Unit	Rate Per each	Labour charge Rate in Rs.
1	Erection of single pole structure (square section) including transporation,Excavation in pole pit 3'x3'x6' using JCB or manual				
2	Ground Leveling and Bush cleaning	1	loc	500	500.00
3	Excavation of pole pit size 3'x3'x6'	1	loc	500	500.00
4	Loading of 9m RCC Pole (Square section)	1	loc	150	150.00
5	Unloading of 9m RCC Pole (Square section)	1	loc	150	150.00
6	Loading & unloading of line materials	1	Tonn	250	250.00
7	Erection of 9mm RCC pole including base plate	1	Each	600	600.00
8	Excavation of stay pit size 2'x 2'x 6' & Erection of stay set including stay plate & Stay concreting	1	loc	2270	2270.00
	Erection of Single pole TC set suitable for 25 KA DT.	1	Loc	1500	1500.00
	Erection of SPM GOS switch polymer type	1	Loc	1500	1500.00
	Erection of HG Fuse unit solid core type	1	Loc	450	450.00
	Erection of Anti Climbing device	1	Loc	100	100.00
	HT jumpering	1	Loc	650	650.00
	Mass concreting of pole with 1:4:8 mix half broken metal jelly, cement and river sand including coping (Size / Height of pole) (As per Civil Rate) (Only Erection)	1	Loc	1022	1022.00
	Erection of HT LAS (1 set consists of 3 Nos.)	1	Set	210	210.00
	Erection of LT LAS (1 set consists of 3 Nos.)	1	Set	120	120.00
	Earthing of Structure complete set with 2 Nos. earth pit excavation , pit size 2'x2'x2' filled with mixture of sand, charcoal and common salt in equal proportion to a depth of 1.25' and 1' jelly to a depth of 9", earth ocnnection to be provided with GI wire, plates and bolts and Nuts.	2	Nos.	2250	4500.00
	Painting of Transformer Structure including cost of paint, brush etc. (1. One coat of red oxide paint in all iron materials, 2. Colour washing of 2 Nos. Strucure poles, 3. Painting of Transformers and all iron items with aluminium paint)	1	Loc	2500	2500.00
	Erection of Transformer	1	No.	1318	1318.00
	Loading & Unloading of Transformer	1	Loc	350	350.00
	Erection of LT open type arrangement/protection kit including running LT bus and jumpering complete	1	Structure	500	500.00
	Erection of HT TI Fittings, 4.5 V Cross arm, Tapping Channel Cross arm etc	1	Loc	1500	1500.00
	Cost of Unskilled Labours				20640.00
	ADD 40% towards cost of skilled labour				8256.00
	Sub total for Labours				28896.00
	Transporting of 9m RCC pole upto 5 kms.	1	loc	400	400.00
	Transporting of line materials from Stores to work spot	1	Tonn	250	250.00
	Transporting of Distribution Transformers upto 30 Km.	1	Tonn	1430	1430.00
	Sub total for Transport				2080.00
	Grand Total (Labour and Transport)				30976.00

			or Say Rs.	30651.00
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STATEMENT-B

RUNNING COST OF VEHICLE	: Rs. 64.51 /KM
AVERAGE CAPACITY OF LORRY	5.00 MT
RATE / MT / KM	: Rs. 12.90
DISTANCE FROM STORE TO WORKSPOT & BACK (ASSUMED)	: 50 KMS
COST OF TRANSPORTATION PER 50 KM/MT	: Rs. 645.00

(A) TRANSPORTATION OF POLES (In Rupees)

SI No.	SIZE OF POLES IN METER	TYPE OF POLE	WEIGHT per pole IN M.T.	SPAN LENGTH IN METRES							
				120Mt	105Mt	90Mt	85Mt	75Mt	67Mt	60Mt	NO OF POLES
				10	11	12	13	15	16	18	Nos.
1	7.50	RCC	0.450	2903	3193	3483	3773	4354	4644	5225	
2	8.00	RCC	0.407	2625	2888	3150	3413	3938	4200	4725	
3	9.14 Spl	RCC	0.618	3986	4385	4783	5182	5979	6378	7175	
4a	9.00	300 kg PSC	0.607	3915	4307	4698	5090	5873	6264	7047	
4b	9.00	400 kg PSC	0.670	4322	4754	5186	5618	6482	6914	7779	
5	8.00	140 Kg PSC	0.329	2122	2334	2546	2759	3183	3395	3820	
6	8.00	200 Kg PSC	0.380	2451	2696	2941	3186	3677	3922	4412	

HT Lines

SI No.	SIZE OF POLES IN METER	TYPE OF POLE	WEIGHT per pole IN MT	SPAN LENGTH IN METERS					
				85 Mt	75 Mt	67 Mt	60 Mt	50 Mt	45 Mt
				13	15	16	18	21	23
				Nos	Nos	Nos	Nos	Nos	Nos
1	7.50	RCC	0.450	3773	4354	4644	5225	6095	6676
2	8.00	RCC	0.407	3413	3938	4200	4725	5513	6038
3	9.14 Spl	RCC	0.618	5182	5979	6378	7175	8371	9168
4	9.00	300 kg PSC	0.607	5090	5873	6264	7047	8222	9005
5	9.00	400 kg PSC	0.670	5618	6482	6914	7779	9075	9939
6	8.00	140 Kg PSC	0.329	2759	3183	3395	3820	4456	4881
7	8.00	200 Kg PSC	0.380	3186	3677	3922	4412	5147	5637

LT Lines

8	7.50	200 kg PSC	0.322	2077	2285	2492	2700	3115	3323
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(B) TRANSPORTATION OF LINE MATERIALS (In Rupees)

HT Lines

SI No.	SIZE OF CONDUCTOR ACSR/AAAC	WEIGHT per pole in Kg.	SPAN LENGTH IN METRES						
			120 Mt	105 Mt	90 Mt	85 Mt	75 Mt	67 Mt	60 Mt
			10 Nos	11 Nos	12 Nos	13 Nos	15 Nos	16 Nos	18 Nos
1	AAAC 7/2.5 mm	94.000	606	667	728	788	909	970	1091
2	AAAC 7/3.15 mm	149.200	962	1059	1155	1251	1444	1540	1732
3	ACSR 7/2.11 mm	84.700	546	601	656	710	819	874	983
4	ACSR 7/2.59 mm	127.700	824	906	988	1071	1235	1318	1483
5	ACSR 7/3.35 mm	213.600	1378	1515	1653	1791	2067	2204	2480
6	ACSR 7/4.09 mm	318.400	2054	2259	2464	2670	3081	3286	3697
7	ACSR 6/4.72+7/1.57 (DOG)	394.000	2541	2795	3050	3304	3812	4066	4574

SI No.	Size of Conductor	WEIGHT per pole in Kg.	SPAN LENGTH IN METRES						
			3 PHASE 5 WIRE		3 PHASE 4 WIRE				
			45 M	50 M	85 M	75 M	67 M	60 M	
			23	21	13	15	16	18	
1	AAAC 7/2.5 mm	94.000	1394	1273	0	788	909	970	1091
2	AAAC 7/3.15 mm	149.200	2213	2021	0	1251	1444	1540	1732
3	ACSR 7/2.11 mm	84.700	1257	1147		710	819	874	983
4	ACSR 7/2.59 mm	127.700	1894	1730		1071	1235	1318	1483
5	ACSR 7/3.35 mm	213.600	3169	2893		1791	2067	2204	2480

SI No.	SIZE OF CONDUCTOR ACSR	WEIGHT PER POLE IN Kg	SPAN IN METRES		No. of poles	
			SINGLE PHASE			
			3 WIRE	2 WIRE		
			67 M	45 M		
			No. of poles		No. of poles	
			16	23		
1	7/2.11 mm	41.070	424	609		

2	7/2.59 mm	63.85	659		947	
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45Mt
23
Nos.
6676
6038
9168
9005
9939
4881
5637

45 Mt
23
Nos
1394
2213
1257
1894
3169
4723
5845
45 M
23
1394
2213
1257
1894
3169



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ERCTION COST OF EHT LINE PER KILOMETRE

Sl.No	Description	230KV DC line DC Tower (Zebra)	230KV SC line SC Tower (Zebra)	110KV DC line DC Tower (Panther)	110KV SC line SC Tower (Panther)
		DC line DC Tower (ZEBRA)	SC line SC Tower (ZEBRA)	DC line DC Tower PANTHER	SC line SC Tower PANTHE R
1	2	3	4	9	10
I(a)	Tower	2E+06	1E+06	1E+06	7E+05
(b)	Tower Accessories	84401.6	53856	60520	51000
II(a)	Conductor	1595580	797790	962220	481110
(b)	Conductor Accessories	71520	35760	24360	18440
III(a)	Earth Wire	37066	37066	23456.5	23456.5
(b)	Earth Wire Accessories	3200	1600	2300	2400
IV	Insulators & HardWares	223151	131687	15741	8382
	Sub-Total	4014119	2232799	2198358	1237589
	storage 3%	120423.6	66984	65950.73	37127.7
	Estt. &Supervision charges	602117.8	334920	329753.6	185638
		4736660	2634703	2594062	1460354
	contigencies 5%	236833	131735	129703.1	73017.7
	Total (1)	4973493	2766438	2723765	1533372
V	Foundation mataerials	222631.5	146314	246911.5	154821
VI	Erection	773258.4	455268	581764.8	216750
		995889.9	601582	828676.3	371571
	Tree/crop compensation	150000	150000	150000	150000
		1145890	751582	978676.3	521571

service tax 4.12%	47211 1193101	30965 #####	40321 1018998	21489 543060
LWF 0.3%	3579 1196680	2348 #####	3057 1022055	1629 544689
Work tax 2%	23933.60 1220613	##### #####	20441.10 1042496	##### 555583
Estt. &Supervision charges	183092 1403705	##### #####	156374.4 1198870	83337.4 638920
cotiqencies 5%	70185.27 Total (2)	##### #####	59943.51 1258814	##### 670866
Grand total 1&2	6447384	#####	3982579	2204238
or Say Rs. In Lakhs	64.45	37.30	39.80	22.00

