

उत्तर प्रदेश पावर कारपोरेशन लिमिटेड



कास्ट शेडयूल
2018-19

ग्रामीण विद्युतीकरण एवं द्वितीय प्रणाली नियोजन संगठन
8 वाँ तल, शक्ति भवन विस्तार,
लखनऊ



**Rural Electrification & Secondary
System Planning Organization
U.P.P.C.L. Shakti Bhawan Extn.
14- Ashok Marg, Lucknow.**

No. २०१२-RESSPO/D&S/CS(2018-19)

Dated: २५-०७-२०१८

OFFICE MEMORANDUM

In super cession of all previous orders for the construction of 33 KV and LT lines, 11/0.4 KV sub-stations up to 400 KVA and 33 KV Lines, 33 KV/11 KV New Sub-station and increasing capacity of 33/11 KV Sub-stations, HVDS system, the Cost Schedules have been revised as per the enclosed schedules.

- 1 The rates of centralized materials are as per revised stock issue rates finalized by Material Management Organization for the year 2018-19 w.e.f. 01.04.2018 as intimated vide letter No. 140 मुंअं(सांअं)/उंअंपांकांलिं/S.I.R/2018-19 dt. 29.06.2018.
- 2 The rates of de-centralized materials are based on the average of rate received from different Discoms.
- 3 The cartage and erection charges have been calculated on estimated average basis and added to the cost of work. The cartage and erection charges may vary from area to area and the actual figure may be worked out at zonal level for adoption.
- 4 The total cost given on these schedules is inclusive of 3% contingency, 1.5% T&P and 31.5% establishment audit & accounts charges. GST will be applicable as wherever applicable.
- 5 The schedules shall be used for formulation of schemes/projects only. Estimates should be prepared on actual basis as per the requirement of Discoms.
- 6 In case of difference between Cost Schedule & Cost Data Book, consumers will be charged as per Cost Data Book, while for other purpose estimation will be done as per Cost Schedule.

(H.MUNSHI)

Chief Engineer (PFA)

२५/७/१८

.....2/-

No. 2092 /CE/RESSPO/D&S/CS (2018-19) dt.: 25-07-18

Copy along with a set of cost schedules forwarded to the following:-

1. M.D. Vidyut Vitran Nigam Ltd., Purvanchal-Varanasi/Paschimanchal-Meerut /Madhyanchal-Lucknow / Dakhinanchal-Agra / KESCO-Kanpur.
2. All CE Distribution Zones/LESA, UPPCL with the remarks that Cost Schedule may be distributed to the Circles/Divisions at their end.

Encl: As above.


(H. MUNSHI)
Chief Engineer (PFA)
am/50x

No. 2092 /CE/RESSPO/D&S/CS (2018-19) dt. 25-07-18

Copy along with a set of cost schedules forwarded to the following:-

1. Staff Officer to Chairman, UPPCL, Lucknow.
2. CE (MM) / C.E.(Commercial)/ C.E. (CMUD), UPPCL, Lucknow.
3. GM (Audit and Accounts)/ (Budget and Cost), UPPCL, Lucknow.
4. Executive Engineer with copy of CD, with the remark that the copy of Cost Schedule may be put on UPPCL Website.

Encl: As above.


(H. MUNSHI)
Chief Engineer (PFA)
am/50x

INDEX

PART-A	Description	Page No
	Cost Schedule for Distribution Lines	
1	Abstract of Cost Schedule for 11 KV and LT Lines	1-2
2	Cost analysis of one Km. of 11 KV lines (Main & Spur)	3
3	Cost analysis of Double Pole structure with PCC Poles for 11 KV Section Location for Main & Spur	4
4	Cost analysis of one Km. of Three phase and Single L.T. Lines.	5-6
5	Cost analysis of 11/.433 KV Sub-station up to 100 KVA	7-8
6	Abstract of various type of 11/0.4 KV Substation up to 400 KVA	9
7	Cost analysis of 11/.433 KV Sub-station up to 400 KVA	10-11
PART- B	Cost Schedule for various type of 33 KV Lines	
1	Abstract of Cost Schedule for 33 KV lines	12
2	Cost analysis of one Km. of 33 KV line with ACSR "Dog" and "Raccoon" conductor	13
3	Cost of single line support on ST pole of 11 M. inclusive of fitting	14
4	Cost of single support of 9.0 M. long PCC Pole including fittings	15
5	Extra cost of sectional double pole structure with 11 M. long steel tubular pole in case of line on STP	16
6	Extra cost for sectional double pole structure with 9 M. long PCC Pole in case of line on PCC Pole	17
Part -C	Cost Schedule for various type of 33/11 KV Sub-station	
1	Abstract of Cost Schedule for 33 /11 KV Sub-station	18
2	Cost analysis of 33/11 KV sub-station	19-21
3	Cost of civil works for conventional 33/11 KV Sub-station.	22
PART- D	Cost Schedule for increasing capacity of 33/11 KV Sub-station	
1	Abstract of Cost Schedule for increasing capacity of 33/11 KV Sub-stations	23
2	Cost analysis of increasing capacity of 33/11 KV Sub-station	24-25
3	Cost analysis of increasing capacity of 33/11 KV Sub-station	26-27
PART- E	Cost Schedule for HVDS System in the village	28-30

PART - A
ABSTRACT OF COST SCHEDULES FOR 11 KV & LT LINES

W.E.F 01.04.2018

PLAINS : 2018-19

Sl. No.	Particulars	Cost of material	Cartage charges(7%)	Erection charges (8%)	Total of Col. 3,4,&5	3% contingencies on Col. 6	1.5% T&P on Col. 6	Total of Col. 6+7+8	31.5% of Esttb. & AA Charges on Col. 9	Total of Col. 9&10	Total (Say)	References
1	2	3	4	5	6	7	8	9	10	11	12	13
A	LINES (Per Kilometer)											
1	11 KV Main line with Rabbit on PCC Pole	277240	19410	22180	318830	9565	4782	333177	104951	438128	438130	Annex-1
2	11 KV Spur Line with ACSR Weasel on PCC Pole	228770	16010	18300	263080	7892	3946	274918	86599	361517	361520	Annex-1
3	3 Phase L.T. Line with ACSR Weasel on PCC Poles for Rural Area	208800	14620	16700	240120	7204	3602	250926	79042	329968	329970	Annex-3
4	3 Phase L.T. Line with ACSR Rabbit on PCC Poles for Rural Area	257300	18010	20580	295890	8877	4438	309205	97400	406605	406610	Annex-3
5	3 Phase L.T Line with AAAC Weasel on PCC Pole for Rural Area	238800	16720	19100	274620	8239	4119	286978	90398	377376	377380	Annex-3
6	3 Phase Distribution Line with AAAC Rabbit on PCC Pole	335900	23510	26870	386280	11588	5794	403662	127154	530816	530820	Annex-3
7	1 Phase Distribution Line AAAC Weasel on PCC Pole	161700	11320	12940	185960	5579	2789	194328	61213	255541	255540	Annex-3

E.E.(TECH.)

1-

SE (RE)

Sl. No.	Particulars	Cost of material	Cartage charges (7%)	Erection charges (8%)	Total of Col. 3,4,&5	3% contingencies on Col. 6	1.5% T&P on Col. 6	Total of Col. 6+7+8	31.5% of Esttb. & AA Charges on Col. 9	Total of Col. 9&10	Total (Say)	References
1	2	3	4	5	6	7	8	9	10	11	12	13
B.	Sub Station (Village/Town)											
1	25 KVA 11/433 KV on Double Pole PCC Structure for:-											
	a) Village/Town	119190	8340	9540	137070	4112	2056	143238	45120	188358	188360	Annex-4
	b) Rural	101460	7100	8120	116680	3500	1750	121930	38408	160338	160340	
	63 KVA 11/433 KV on Double Poles PCC Structure:-		0	0								
2												
	a) Village/Town	174700	12230	13980	200910	6027	3014	209951	66135	276086	276090	Annex-4
	b) Rural	157330	11010	12590	180930	5428	2714	189072	59558	248630	248630	
	100 KVA 11/433 KV on Double Pole PCC Structure For:-		0	0								
3												
	a) Village/Town	210450	14730	16840	242020	7261	3630	252911	79667	332578	332580	Annex-4
	b) Rural	190900	13360	15270	219530	6586	3293	229409	72264	301673	301670	

E.E.(TECH.)

2-

SE (RE)

Cost Analysis of one Kilometer of 11 KV Lines (Main & Spur)

w.e.f. 01.04.2018

Plains: 2018-19

S.No	Particulars	Unit	Rate (Rs.)	11 KV Lines			
				Main line with ACSR Rabbit Conductor 17 support/km		Spur line with ACSR Weasel Conductor 17 support/km	
				Qty.	Amt(Rs.)	Qty.	Amt.(Rs.)
1	2	3	4	5	6	7	8
1	PCC Support 8.5 Meter long	Nos	2721	17	46257	17	46257
2	Stone Pad 300x300x75 mm	Nos	140	17	2380	17	2380
3	X-arm M.S. Angle 65x65x6mm V Type 11 KV	Nos	744	17	12648	17	12648
4	Cross arms holding clamps with bolts & nuts	Nos	304	17	5168	17	5168
5	11 KV pin insulator	Nos	196	51	9996	51	9996
6	11 KV pin with nut	Nos	72	51	3672	51	3672
7	F-bracket for fitting top insulator with bolts & nuts	Nos	265	17	4505	17	4505
8	Phase wire 50 sq.mm ACSR Rabbit	Kms	39669	3.09	122577	0	0
9	Phase wire 30 sq.mm ACSR Weasel	Kms	23984	0	0	3.09	74111
10	Aluminium binding wire (5mm dia)	Kg.	247	2	494	2	494
11	Aluminium Jointing sleeve for ACSR Rabbit	Nos	103	3	309	0	0
12	Aluminium Jointing sleeve for ACSR Weasel	Nos	103	0	0	3	309
13	Danger Plate with clamps & bolts	Nos	461	17	7837	17	7837
14	Painting number mark with paint	Nos	30	17	510	17	510
15	Barbed wire GI	Kg.	162	8	1296	8	1296
16	Extra for stays at angle Location(stay rod 16x1800mm,stay wire 5 kg,stay clamp,bolt &nut with grouting)	Nos	1961	2	3922	2	3922
17	Extra with stays at Road crossing(as per sl.no.16)	Nos	1961	1	1961	1	1961
18	Extra for sectional D/P support (Annexure -2)	Nos	24910	1	24910	1	24910
19	Concreting of support 0.268CM/Pole	Nos	856	17	14552	17	14552
20	Earthing of pole by MS earthing rod of 20x2500 mm. and 6 SWG earthing wire etc.	Nos	838	17	14246	17	14246
21	Total				277240		228774
22	Total (Say) Rs.				277240		228770

EE(TECH.)

3-

S.E.(RE)

**COST ANALYSIS OF DOUBLE POLE STRUCTURE WITH PCC POLES FOR
11 KV SECTION LOCATIONS FOR MAIN & SPUR LINES**

w.e.f. 01.04.2018

Sl.No.	Items	Unit	Rate (Rs)	Qty.	Amount (Rs.)
1	2	3	4	5	6
1	PCC Pole 8.5 M Long	Nos	2721	2	5442
2	Stone Pad 300x300x75mm	Nos	140	2	280
3	MS Channel cross arms 100x50x2240mm(Top Channel)	Nos	826	1	826
4	M.S. Angle Iron 65x65x6 mm, 2700 mm long bracing with 4 clamp	Set	2288	1	2288
5	Clamps with Nuts & Bolts for top channel	Nos	304	2	608
6	Barbed wire GI	Kg.	161	2	322
7	Danger board & clamps with bolts & nuts	Nos	461	1	461
8	Concreting of poles (0.268 Cu.m. each)	Nos	376	2	752
9	Earthing of pole by MS earthing rod of 20x2500 mm. and 6 SWG earthing wire etc.	Nos	838	2	1676
10	E Bracket with bolts & nuts	Nos	421	3	1263
11	11 KV Disc Insulator T&C type (45 KN)	Nos	287	6	1722
12	11 KV Disc fitting (45KN,T&C)	Nos	97	6	582
13	11 KV Pin Insulators	Nos	51	3	153
14	11 KV pin with nut	Nos	72	3	216
15	PG Clamps	Nos	257	6	1542
16	Stay complete (stay rod 16x1800mm, stay wire 5 kg, stay clamp, bolt & nut with grouting)	Nos	2027	6	12162
	Total	(A)-			30295
	Less (Cost of one PCC Pole with fitting)				
1	PCC Pole 8.5 M Long	Nos	2721	1	2721
2	Stone Pad 300x300x75mm	Nos	140	1	140
3	11 KV Steel X-arm "V" type	Nos	744	1	744
4	Cross arm holding clamps with bolts & nuts	Nos	304	1	304
5	11 KV Pin Insulators	Nos	51	3	153
6	11 KV pin with nut	Nos	72	3	216
7	F-bracket with bolts & nuts	Nos	265	1	265
8	Earthing of pole by MS earthing rod of 20x2500 mm. and 6 SWG earthing wire etc.	Nos	838	1	838
	Total	(B)			5381
	Extra cost of section D/P complete in place of single pole	Rs. (A-B)=			24914
				Say	24910

EE(TECH.)

4-

SE (RE)

COST ANALYSIS OF ONE KM OF THREE PHASE AND SINGLE PHASE L.T. LINES

w.e.f. 01.04.2018

Plains: 2018-19

Sl.No	Paarticular	Unit	Rate (Rs.)	3 Phase LT Line with ACSR Weasel /Rabbit Conductor on PCC Pole in Rural Area (20 support/Km)				3 Phase LT Line with AAAC Weasel/Rabbit Conductor on PCC Pole in Rural Area (20support/Km)				1 Phase LT Main Line with AAAC Weasel Conductor on PCC Pole in Rural Area (20 support/Km)	
				Weasel		Rabbit		Weasel		Rabbit		Qty.	Amt (RS)
				Qty.	Amt (RS)	Qty.	Amt (RS)	Qty.	Amt (RS)	Qty.	Amt (RS)		
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	PCC Support 8.5 Long	Nos	2721	20	54420	20	54420	20	54420	20	54420	20	54420
2	Stone Pad 300x300x75mm	Nos	140	20	2800	20	2800	20	2800	20	2800	20	2800
3	LT Clamp with nuts & bolts for PCC Pole with Neutral	Nos	304	80	24320	80	24320	80	24320	80	24320	40	12160
4	Earth wire clamps for PCC Pole	Nos	336	20	6720	20	6720	20	6720	20	6720	20	6720
5	LT Shackel Insulator 100x115 mm	Nos	36	80	2880	80	2880	80	2880	80	2880	40	1440
6	Bolts & nuts for shackle	Kg.	196	30	5880	30	5880	30	5880	30	5880	13.3	2607
7	LT Shackel strip with bolt & nut for LT section pole	Kg.	265	5	1325	5	1325	5	1325	5	1325	2	530
8	Loop Guard complete 3- phase	Nos	46	40	1840	40	1840	40	1840	40	1840	0	0
9	Loop Guard complete 1-phase	Nos	35	0	0	0	0	0	0	0	0	40	1400
10	Phase wire ACSR Weasel	Km	23984	3.09	74110.56	0	0	3.09	0	0	0	0	0
11	Phase wire ACSR Rabbit	Km	39669	0	0	3.09	122577.2	0	0	0	0		
12	Phase wire AAAC Weasel	Km	28381	0	0	0	0	3.09	87697	0	0	0	0
13	Phase wire AAAC Rabbit	Km	59826	0	0	0	0	0	0	3.09	184862	0	0

EE(TECH.)

5-

SE (RE)

Sl.No	Particular	Unit	Rate (Rs.)	3 Phase LT Line with ACSR Weasel /Rabbit Conductor on PCC Pole in Rural Area (20 support/Km)				3 Phase LT Line with AAAC Weasel/Rabbit Conductor on PCC Pole in Rural Area (20support/Km)				1 Phase LT Main Line with AAAC Weasel Conduct on PCC Pole in Rural Area (20 support/Km)	
				Weasel		Rabbit		Weasel		Rabbit		Qty.	Amt (RS)
				Qty.	Amt (RS)	Qty.	Amt (RS)	Qty.	Amt (RS)	Qty.	Amt (RS)		
1	2	3	4	5	6	7	8	9	10	11	12	13	14
14	Phase wire AAAC Weasel	Km	28381	0	0	0	0		0		0	1.03	29232
15	Netural cum earth wire GI wire 7.16mm or 16SWG	Kg.	122	157	19154	157	19154	157	19154	157	19154	157	19154
16	Aluminium binding wire 6mm	Kg.	247	3	741	3	741	5	1235	5	1235	2	494
17	Aluminium Jointing Sleeve for AAAC conductor Weasel/Rabbit	Kg.	132	0	0	0	0	2	264	2	264	4	528
18	Aluminium Jointing sleeve for ACSR Conductor Weasel/Rabbit	Kg.	132	3	396	3	396	0	0	0	0	0	0
19	Spacer LT PVC	Nos	90	36	3240	36	3240	36	3240	36	3240	36	3240
20	Extra for stays at angle Location(stay rod 16x1800mm,stay wire 5 kg,stay clamp,bolt &nut with grouting)	Nos	1961	3	5883	3	5883	9	17649	9	17649	9	17649
21	Earthing of pole by MS earthing rod of 20x2500 mm. and 6 SWG earthing wire etc.	Nos	838	3	2514	3	2514	5	4190	5	4190	5	4190
22	Concreting of poles (0.268 Cu.m. each)	Nos	856	3	2568	3	2568	6	5136	6	5136	6	5136
	Total				208791.6		257258.2		238750.3		335915.34		161700
	Total (Say)				208800		257300		238800		335900		161700

EE(TECH.)

6-

SE (RE)

COST ANALYSIS OF 11/0.433 KV Sub-station upto 100 KVA

w.e.f. 01.04.2018

Plains: 2018-19

Sl.No	Particular	Unit	Rate (Rs.)	25 KVA 11/0.433 on double pole PCC structure for				63 KVA 11/0.433 on double pole PCC structure for				100 KVA 11/0.433 on double pole PCC structure for			
				Village/Town		Rural		Village/Town		Rural		Village/Town		Rural	
				Qty.	Amt (RS)	Qty.	Amt. (Rs.)	Qty.	Amt (RS)	Qty.	Amt (RS)	Qty.	Amt (RS)	Qty.	Amt (RS)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	PCC Poles 8.5 M.Long	Nos	2721	2	5442	2	5442	2	5442	2	5442	2	5442	2	5442
2	MS Channel (Dropper) 100X50x2028 mm (for fuse set)	Nos	748	1	748	1	748	2	1496	2	1496	2	1496	2	1496
3	Stone pad 300x300x75M	Nos	140	2	280	2	280	2	280	2	280	2	280	2	280
4	Clamps for LT T- off with bolts & nuts	Nos	259	1	259	1	259	1	259	1	259	1	259	1	259
5	Holding clamps for top channel TPMO & fuse set etc. with bolts & nuts	Nos	259	10	2590	10	2590	12	3108	12	3108	12	3108	12	3108
6	MS angle 75x75x6x2028 mm with clamp & bolt and nut (T/F base)	Nos	1778	2	3556	2	3556	2	3556	2	3556	2	3556	2	3556
7	M.S. Top Channel (125x65x2240 mm.)	Nos	832	1	832	1	832	1	832	1	832	1	832	1	832
8	11 KV Disc Insulator T&C type 4500 Kg.	Nos	167	3	501	3	501	3	501	3	501	3	501	3	501
9	11 KV Disc fitting	Nos	97	3	291	3	291	3	291	3	291	3	291	3	291
10	MS Channel 125x65x1300mm(T-off)	Nos	478	1	478	1	478	1	478	1	478	1	478	1	478

E.E (TECH.)

7-

S.E.(RE)

Sl.No	Particular	Unit	Rate (Rs.)	25 KVA 11/0.433 on double pole PCC structure for				63 KVA 11/0.433 on double pole PCC structure for				100 KVA 11/0.433 on double pole PCC structure for			
				Village/Town		Rural		Village/Town		Rural		Village/Town		Rural	
				Qty.	Amt (RS)	Qty.	Amt. (Rs.)	Qty.	Amt (RS)	Qty.	Amt (RS)	Qty.	Amt (RS)	Qty.	Amt (RS)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
11	11 KV Pin insulator	Nos	51	3	153	3	153	3	153	3	153	3	153	3	153
12	11 KV Pin with nut	Nos	72	3	216	3	216	3	216	3	216	3	216	3	216
13	11/0.4 KV T/F 25 KVA	Nos	56780	1	56780	1	56780	0	0	0	0	0	0	0	0
14	11 /0.4KV T/F 63 KVA	Nos	104596	0	0	0	0	1	104596	1	104596	0	0	0	0
15	11/0.4 KV T/F 100 KVA	Nos	136710	0	0	0	0	0	0	0	0	1	136710	1	136710
16	11 KV TPMO	Nos	18292	1	18292	1	18292	1	18292	1	18292	1	18292	1	18292
17	11 KV Fuse Set	Nos	7028		0		0	1	7028	1	7028	1	7028	1	7028
18	LT incoming Panel with metering equipment & fixing arrangement (LS)	Nos	14641	1	14641	0	0	1	14641	0	0	1	14641	0	0
19	LT PVC cable 4x16 sq mm @ 160	M	257	20	5140	8	2056	0	0	0	0	0	0	0	0
20	LT PVC Cable 3.5x70/35 Sq.mm @ 220	M	227	0	0	0	0	20	4540	8	1816	0	0	0	0
21	LT PVC Cable 3.5x150/70 Sq.mm @ 326	M	409	0	0	0	0	0	0	0	0	20	8180	8	3272
22	Danger board Barbed wire including jumper	Nos	1547	1	1547	1	1547	1	1547	1	1547	1	1547	1	1547
23	Stay complete (stay rod 16x1800mm,stay wire 5 kg,stay clamp,bolt &nut with grouting)	Nos	2027	2	4054	2	4054	2	4054	2	4054	2	4054	2	4054
24	Concreting of poles (0.268 Cu.m. each)	Nos	856	2	1712	2	1712	2	1712	2	1712	2	1712	2	1712
25	Earthing of pole by MS earthing rod of 20x2500 mm. and 6 SWG earthing wire etc.	Nos	838	2	1676	2	1676	2	1676	2	1676	2	1676	2	1676
	Total				119188		101463		174698		157333		210452		190903
	Total (Say)				119190		101460		174700		157330		210450		190900

E.E (TECH.)

8-

S.E.(RE)

PART-A (1)

ABSTRACT OF various type of 11/0.4 KV Sub station upto 400 KVA

Plains 2018-19

W.E.F 01.04.2018

Rs. in Lacs

Sl. No.	Name of works	Cost of material	cost of civil works	cartage charges @ 3%	Erection charges @ 4%	Total of Col. 3,4,5&6	3% contingencies on Col. 7	1.5% T&P on Col. 7	Total of Col. 7+8+9	31.5% of Esttb. & AA Charges on Col. 10	Total of Col. 10 & 11	References
1	2	3	4	5	6	7	8	9	10	11	12	13
	11 KV New Sub stations:-											
1	1x250 KVA	5.41	0	0.16	0.22	5.79	0.17	0.09	6.05	1.91	7.96	Annexure-4(1)
2	1x400 KVA	7.73	0	0.23	0.31	8.27	0.25	0.12	8.64	2.72	11.36	Annexure-4(1)

Note: The cartage and erection charges have been taken @3% & 4% of the cost of material respectively . The actual charges may vary from site to site.


E.E.(TECH.)

9-


SE(RE)

COST ANALYSIS OF 11/.433 KV Sub-station upto 400 KVA

w.e.f. 01.04.2018

Plains: 2018-19

Sl.No	Particular	Unit	Rate (Rs.)	250 KVA 11/0.433 on double pole structure		400 KVA 11/0.433 on double pole structure	
				Qty.	Amt (RS)	Qty.	Amt (RS)
1	2	3	4	5	6	7	8
1	STP, 11 M.Long	Nos	15049	2	30098	2	30098
2	MS Channel (Dropper) 100X50x2028 mm	Nos	748	1	748	2	1496
3	Stone pad 300x300x75M	Nos	140	2	280	2	280
4	Clamps for LT, T- off with bolts & nuts	Nos	304	1	304	1	304
5	Holding clamps for top channel TPMO & fuse set etc. with bolts & nuts	Nos	304	12	3648	12	3648
6	MS Top channel (125x65x2240 mm)	Nos	823	1	823	1	823
7	11 KV Disc Insulator T&C type 4500 Kg.	Nos	287	3	861	3	861
8	11 KV Disc fitting	Nos	97	3	291	3	291
9	MS Channel 125x65x1300mm(T- off)	Nos	478	1	478	1	478
10	11 KV Pin insulator	Nos	51	3	153	3	153
11	11 KV Pin with nut	Nos	72	3	216	3	216
12	11/0.4 KV T/F 250 KVA	Nos	393067	1	393067	0	0
13	11 /0.4KV T/F 400 KVA	Nos	619236	0	0	1	619236
14	11 KV TPMO	Nos	18000	1	18000	1	18000
15	11 KV Fuse Set	Nos	7321		0	1	7321
16	LT incoming Panel with metering equipment & fixing arrangement (LS)	Nos	14641	1	14641	1	14641
17	Coper L-Piece 50x225x10mm (LS)	Nos	1100	4	4400	4	4400

E.E (TECH.)

10-

S.E (R.E.)

Sl.No	Particular	Unit	Rate (Rs.)	250 KVA 11/0.433 on double pole structure		400 KVA 11/0.433 on double pole structure	
				Qty.	Amt (RS)	Qty.	Amt (RS)
1	2	3	4	5	6	7	8
18	Coper L-Piece 62x225x12mm (LS)	Nos	1200	4	4800	4	4800
19	LT PVC cable Al 3.5x400 sq mm	M	974	15	14610	0	0
20	LT PVC cable Al 1x400 sq mm	M	273	0	0	30	8190
21	LT PVC cable Al 1x240 sq mm	M	197	0	0	15	2955
22	Al Leg long barrel, off size (LS)	Nos	50	24	1200	40	2000
23	4 core LT MCB with box (LS)	Nos	20000	1	20000	1	20000
24	Danger board barbed wire including jumper	Nos	1406	1	1406	1	1406
25	Stay complete (Stay rod 16x1800mm, stay wire 5 Kg., stay clamp, bolt & nut with grouting)	Nos	2800	2	5600	2	5600
26	Concreting of poles (0.880 Cu.m.each)	Nos	2800	2	5600	2	5600
27	Earthing of pole by MS earthing rod of 20x2500mm & 6SWG earthing wire etc.	Nos	768	2	1536	2	1536
28	Red oxide paint	Lt.	160	2	320	2	320
29	Aluminium paint	Lt.	200	2	400	2	400
30	Plinth for size 2x2x1.5M				0		0
	1) Cement	Bag	350	14	4900	14	4900
	2) Sand	Cu.mtr	1600	3	4800	3	4800
	3) Coarse sand	Cu.Mtr	2250	1.2	2700	1.2	2700
	4) Brick Ballast	Cu.mtr	1500	0.45	675	0.45	675
	5) Brick 1st class	Cu.mtr	8	6	48	6	48
	6) Stone Ballast	Cu.mtr	2250	0.4	900	0.4	900
	7) MS Channel 125x65mm	Kg.	41.7	48	2002	48	2002
	8) MS Twisted bar of size 20mm	Kg.	43.2	40	1728	40	1728
Total					541233		772806
Total (Say)					5.41		7.73

E.E (TECH.)

11-

S.E (R.E)

PART - B
ABSTRACT OF various type of 33 KV lines

Plains 2018-19

W.E.F 01.04.2018

Rs. in Lacs

Sl. No.	Name of works	Cost of material	cartage charges @5%	Erection charges @10%	Total of Col. 3,4,&5	3% contingencies on Col. 6	1.5% T&P on Col. 6	Total of Col. 6+7+8	31.5% of Esttb. & AA Charges on Col. 9	Total of Col. 9&10	Reference
1	2	3	4	5	6	7	8	9	10	11	12
	33 KV Lines (Per Kilometer)										
1	On 11 M long STP with ACSR Dog conductor	6.382	0.319	0.638	7.339	0.220	0.110	7.670	2.416	10.085	Annex.-5
2	On 9 M long PCC with ACSR Dog conductor	4.892	0.245	0.489	5.626	0.169	0.084	5.879	1.852	7.731	Annex.-5
3	On 11 M long STP with ACSR Racocon conductor	5.370	0.269	0.537	6.176	0.185	0.093	6.453	2.033	8.486	Annex.-5
4	On 9 M ong PCC with ACSR Racocon conductor	3.912	0.196	0.391	4.499	0.135	0.067	4.701	1.481	6.182	Annex.-5

Note: The cartage and erection charges have been taken @ 5% &10% of the cost of material respectively . The actual charges may vary from site to site.


E.E.(TECH.)

12-


SE(RE)

COST ANALYSIS OF ONE KILOMETER OF 33 KV LINE WITH ACSR 'DOG' and 'RACOON' Conductor

w.e.f. 01.04.2018

Plains: 2018-19

	Particular	Unit	Rate (Rs.)	ACSR Dog conductor				Rate (Rs)	ACSR Racocon conductor			
				On STP11 M		On PCC Pole 9 M.			On STP 11 M		On PCC Pole 9 M.	
				Qty.	Amount (RS)	Qty.	Amount (RS)		Qty.	Amount (RS)	Qty.	Amount (RS)
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Cost of single support											
	STP (Annex-6)	Nos	23850	14	333900	0	0	23850	14	333900	0	0
	PCC (Annex-7)	Nos	12650	0	0	16	202400	12650	0	0	16	202400
2	Extra cost of section and heavy angle points on double pole											
	STP (Annex-8)	Nos	43510	0.5	21755	0	0	43510	0.5	21755	0	0
	PCC (Annex-9)	Nos	36270	0	0	0.5	18135	36270	0	0	0.5	18135
3	Extra cost of stay at right angle	Nos	2027	2	4054	2	4054	2280	2	4560	2	4560
4	ACSR "Dog" conductor	Km	79004	3.09	244122	3.09	244122	0	0	0	0	0
5	ACSR :Racocon conductor	Km	57337	0	0	0	0	49132	3.09	151818	3.09	151818
6	GI Earthwith 7.16 mm or 16 SWG	Kg	123	127	15621	0	0	93	127	11811	0	0
7	Alluminium jointing sleeves	Nos	103	3	309	3	309	71	3	213	3	213
8	Earthing complete	Nos	838	14	11732	16	13408	572	14	8008	16	9152
9	Extra cost of Road/ communication lines / 11kv lines	Nos	11297	0.5	5649	0.5	5649	8250	0.5	4125	0.5	4125
10	Tree cutting compensation	kM	1098	1	1098	1	1098	825	1	825	1	825
	Total Rs.				638240		489175			537015		391228
	Say Rs. in Lakhs				6.38		4.89			5.37		3.91

E.E (TECH.)

S.E.(RE)

Cost of single line support on ST Pole of 11 Meter inclusive of fitting

Plains 2018-19
w.e.f. 1.4.2018

Sl.N o.	Particulars	Unit	Rate (Rs.)	Qty.	Amt.(Rs)
1	2	3	4	5	6
1	11 meter ST Pole - SP-55	No.	15049	1	15049
2	`V' type Cross arm 100x50x6 mm, M.S. Channel (7.9 Kg./M)	No.	992	1	992
3	Clamps for above with bolts and nuts	No.	304	1	304
4	F-bracket for 33 KV	No.	436	1	436
5	33 KV Pin Insulators	No.	488	3	1464
6	33 KV pin with nut	No.	209	3	627
7	Earth wire clamp with bolts & nuts	No.	336	1	336
8	Armour rod with ferules	Set	276	3	828
9	Stone pad (300x300x75 mm)	No.	140	1	140
10	Number plates with clamp and nut & bolt	No.	391	1	391
11	Danger board with clamp for 33 KV	No.	461	1	461
12	G.I.Barbed wire	Kg.	162	2	324
13	Bolts, Nuts & washers all sizes	Kg.	196	1	196
14	Alluminium paint	Ltr	319	1	319
15	Red oxide paint	Ltr	160	1	160
16	Alluminium binding wire 6 SWG	Kg.	250	0.5	125
17	Earthing of pole by MS earthing rod of 20x2500 mm. and 6 SWG earthing wire etc.	NO.	838	1	838
18	Concreting of supports (0.268cu.m/Pole)	No.	856	1	856
	Total				23846
	Total (say)				23850

EE (TECH.)

14-

SE (RE)

Annexure-7

Cost of single support on 9.0 M long PCC Pole including fittings

Plains 2018-19
w.e.f. 1.4.2018

S.No.	Particulars	Unit	Rate (Rs.)	Qty.	Amt.(Rs)
1	2	3	4	5	6
1	9.0 M. long PCC pole	No.	4671	1	4671
2	`V' type Cross arm 100x50x6 mm, M.S. Channel (7.9 Kg./M)	No.	992	1	992
3	Cross arm holding clamp with bolts & nuts	No.	304	1	304
4	F-bracket	No.	436	1	436
5	33 KV Pin Insulators	No.	488	3	1464
6	33 KV pin with nut	No.	209	3	627
7	Armour Rod with Ferrule	Set	276	3	828
8	Stone pad	No.	140	1	140
9	Number plates with clamp for pcc poles	No.	391	1	391
10	Danger board with clamp for 33 KV	No.	461	1	461
11	Barbed wire	Kg.	162	2	324
12	Bolts, Nuts & washers	Kg.	196	1	196
13	Alluminium binding wire	Kg.	250	0.5	125
14	Earthing of pole by MS earthing rod of 20x2500 mm. and 6 SWG earthing wire etc.	No.	838	1	838
15	Concreting of support (0.268 Cub.M/Pole)	No.	856	1	856
	Total				12653
	Say				12650

EE (TECH.)

15-

SE (RE)

**Extra cost of sectional double pole structure with 11 M long
Steel Tubular Pole in case of line on STP**

Plains 2018-19

w.e.f. 1.4.2018

Sl.N o.	Particulars	Unit	Rate (Rs.)	Qty.	Amt.(Rs)
1	2	3	4	5	6
1	STP-SP-55	No.	15049	2	30098
2	M.S. Angle Iron 65x65x6mm, 4300 mm long bracing with clamp	No.	3159	1	3159
3	Top channel 125x65mm 3200 mm (10.70 kg/M	No.	1592	1	1592
4	Stone pad	No.	140	2	280
5	Disc. insulators B&S type 7000 kg	No.	315	24	7560
6	Disc. fittings Dog/Racoon 7000 kg	No.	237	6	1422
7	33 KV Pin Insulators	No.	488	3	1464
8	33 KV Pin with nuts	No.	209	3	627
9	Earth wire clamp with bolts & nuts	No.	336	1	336
10	PG clamps	No.	257	12	3084
11	E-bracket for 33 KV	No.	421	3	1263
12	Number plates	No.	132	1	132
13	Danger board with clamp for 33 KV	No.	461	1	461
14	G.I. Barbed wire	Kg.	162	4	648
15	Alluminium Binding wire-6 SWG	Kg.	250	1	250
16	Alluminium paint	Ltr.	319	2	638
17	Bolts, nuts & washers	Kg.	196	3	588
18	Red oxide paints	Ltr.	160	2	320
19	Complete Stay (GI stay rod 20x1800mm, stay wire 7/8 SWG 10 Kg, stay clamp, bolt, nut & washer with concrete grouting	No.	1361	8	10888
20	Concreting of supports (0.268cu.m/Pole)	No.	856	2	1712
21	Earthing of pole by MS earthing rod of 20x2500 mm. and 6 SWG earthing wire etc.	No.	838	1	838
	Total cost				67360
	Less Cost of single supports as per annexure 6 :-				23850
	Extra cost of section double pole in place of single				43510
				Say	43510

EE (TECH.)

16-

SE (RE)

**Extra cost for sectional double pole structure with 9 meter long
PCC Pole in case of line on PCC Pole**

Plains 2018-19
w.e.f. 1.4.2018

Sl.N o.	Particulars	Unit	Rate (Rs.)	Qty.	Amt.(Rs)
1	2	3	4	5	6
1	9.0 M. long PCC pole	No.	4671	2	9342
2	MS Angle Iron 65x65x6mm bracing with 4 clamps	No.	3159	2	6318
3	Top channel 125x65x 3200 mm with clamp	No.	1592	1	1592
4	Stone pad	No.	140	2	280
5	11 KV Disc. insulators B&S type 7000 kg	No.	315	24	7560
6	Disc. fittings Dog/Raccoon 7000 kg	No.	237	6	1422
7	33 KV Pin Insulators	No.	488	3	1464
8	33 KV Pin with nuts	No.	209	3	627
9	Earth wire clamp with bolts & nuts	No.	336	1	336
10	PG clamps for Raccoon/Dog	No.	257	12	3084
11	F-bracket for 33 KV	No.	436	3	1308
12	Number plates with clamp for pcc poles	No.	132	1	132
13	Danger board with clamp for 33 KV	No.	461	1	461
14	Barbed wire	Kg.	162	4	648
15	Alluminium paint	Ltr.	319	1	319
16	Bolts, nuts & washers	Kg.	196	3	588
17	Complete Stay (GI stay rod 20x1800mm, stay wire 7/8 SWG 10 Kg, stay clamp, bolt, nut & washer with concerte grouting	No.	1361	8	10888
18	Concreting of supports (0.268 cu.m each)	No.	856	2	1712
19	Earthing of pole by MS earthing rod of 20x2500 mm. and 6 SWG earthing wire etc.	No.	838	1	838
Total cost					48919
Less cost for Single pole (Annexure-7)					12650
Extra cost for sectional double pole in place of single pole:					36269
Say					36270

EE (TECH.)

17-

SE (RE)

PART- C
ABSTRACT OF various type of 33/11 KV Sub station

Plains 2018-19
W.E.F 01.04.2018
Rs. in Lacs

Sl. No.	Name of works	Cost of material	cost of civil works	cartage charges @ 3%	Erection charges@ 4%	Total of Col. 3,4,5&6	3% contingencies on Col. 7	1.5% T&P on Col. 7	Total of Col. 7+8+9	31.5% of Esttb. & AA Charges on Col. 10	Total of Col. 10 & 11	References
1	2	3	4	5	6	7	8	9	10	11	12	13
	33 KV New Sub stations:-											
1	1x5 MVA	80.09	26.220	2.403	3.204	111.918	3.358	1.679	116.955	36.841	153.796	Annex. 10
2	2x5 MVA	134.40	26.220	4.032	5.376	170.027	5.101	2.550	177.678	55.969	233.647	Annex. 10
3	1x8 MVA	97.57	26.220	2.927	3.903	130.617	3.919	1.959	136.494	42.996	179.490	Annex. 10
4	2x8 MVA	169.35	26.220	5.080	6.774	207.423	6.223	3.111	216.757	68.279	285.036	Annex. 10
5	1x10 MVA	99.87	26.220	2.996	3.995	133.079	3.992	1.996	139.067	43.806	182.874	Annex. 10
6	2x10 MVA	173.95	26.220	5.218	6.958	212.345	6.370	3.185	221.901	69.899	291.800	Annex. 10

Note: The cartage and erection charges have been taken @3% & 4% of the cost of material respectively . The actual charges may vary from site to site.

E.E.(TECH.)

18-

SE(RE)

Cost analysis of 33/11 KV sub-station

W.E.F 01.04.2018

2018-19

Sl. No.	Particulars	Unit	Rate (Rs)	1x5 MVA		2x5 MVA		1x8 MVA		2x8 MVA		1x10 MVA		2x10 MVA	
				Qty.	Amount (Rs)	Qty	Amount (Rs)	Qty	Amt. (Rs)	Qty	Amt.(Rs)	Qty	Amt. (Rs)	Qty	Amount (Rs)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Terminal Gantry	Nos	181763	1	181763	1	181763	1	181763	1	181763	1	181763	1	181763
2	Main bus bar complete with structure	Nos	332537	1	332537	1	332537	1	332537	1	332537	1	332537	1	332537
3	33 KV Pin insulator	Nos	488	3	1464	3	1464	3	1464	3	1464	3	1464	3	1464
4	33 KV Pin	Nos	209	3	627	3	627	3	627	3	627	3	627	3	627
4(I)	33 KV line Isolator	Nos	35083	1	35083	1	35083	1	35083	1	35083	1	35083	1	35083
(II)	33 KV bus isolator	Nos	29619	1	29619	2	59238	1	29619	2	59238	1	29619	2	59238
(III)	Structure for above	Nos	21695	2	43390	3	65085	2	43390	3	65085	2	43390	3	65085
5(I)	33 KV post insulator	Nos	659	6	3954	6	3954	6	3954	6	3954	6	3954	6	3954
(II)	Structure for above	Nos	10426	2	20852	2	20852	2	20852	2	20852	2	20852	2	20852
6(I)	33 KV lightening arresters	Sets	3700	2	7400	3	11100	2	7400	3	11100	2	7400	3	11100
(II)	Structure for above	Nos	8689	2	17378	3	26067	2	17378	3	26067	2	17378	3	26067
7	Plinth & foundations for structure	Included in the cost of structure													
8	33 /11KV transformers														
	5 MVA	Nos	3515116	1	3515116	2	7030232	0	0	0	0	0	0	0	0
	8 MVA	Nos	5262620	0	0	0	0	1	5262620	2	10525240	0	0	0	0
	10 MVA	Nos	5492644	0	0	0	0	0	0	0	0	1	5492644	2	10985288
9	90 lbs rail pieces for transformer (44.64kg/M)	M	3495	6.92	24185	13.8	48371	6.92	24185	13.8	48371	6.92	24185	13.8	48371
10	Plinth of transformer	Nos	134697	1	134697	2	269394	1	134697	2	269394	1	134697	2	269394

EE (TECH.)

SE (RE)

Sl. No.	Particulars	Unit	Rate (Rs)	1x5 MVA		2x5 MVA		1x8 MVA		2x8 MVA		1x10 MVA		2x10 MVA	
				Qty.	Amount (Rs)	Qty	Amount (Rs)	Qty	Amt. (Rs)	Qty	Amt.(Rs)	Qty	Amt. (Rs)	Qty	Amount (Rs)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
11(a)	33 KV VCB with single T/F control pannel and CT 200/100/1A with structure (i) 33 KV VCB (ii)control panel I/C for 33KV single T/F (iii)CT 200/100/1-1A (iv)steel structure	Nos	324627	1	324627	0	0	1	324627	0	0	1	324627	0	0
11(b)	33 KV /VCB with double T/F control pannel and CT 200/100/1A with structure (i) 33 KV VCB (ii)control panel I/C for 33KV double T/F (iii)CT 200/100/1-1A (iv)steel structure	Nos	399320	0	0	1	399320	0	0	1	399320	0	0	1	399320
12	Plinth & foundation of VCB	Nos	25302	1	25302	2	50604	1	25302	2	50604	1	25302	2	50604
13	11 KV VCB														
(I)	600/300/5A,350MVA I/C	Nos	353384	1	353384	2	706768	1	353384	2	706768	1	353384	2	706768
(II)	Outgoing 200/100/5A	Nos	296127	4	1184508	6	1776762	4	1184508	6	1776762	4	1184508	6	1776762
(III)	Bus coupler 350MVA	Nos	242139	0	0	1	242139	0	0	1	242139	0	0	1	242139
14	11 KV 3 core cable				0		0		0		0		0		0
I)	300 mm sq. XLPE	M	1184	60	71040	120	142080	60	71040	120	142080	60	71040	120	142080
II)	120mm sq XLPE	M	1173	240	281520	360	422280	240	281520	360	422280	240	281520	360	422280
15	Laying of 11 KV cable including cost of sand & bricks	M	227	270	61290	420	95340	270	61290	420	95340	270	61290	420	95340
16	Making of 11 KV cable boxes mounted with switchgears and transformers	Nos	21259	6	127554	10	212590	6	127554	10	212590	6	127554	10	212590
17	11 KV cable jointing kit outdoor 120 sq.mm.	Nos	3864	4	15456	6	23184	4	15456	6	23184	4	15456	6	23184
18	24 volt battery and battery charger with cabinet	Nos	85330	1	85330	1	85330	1	85330	1	85330	1	85330	1	85330
19	Control Cable														
-1	4x2.5 mm sq	M	293	100	29300	200	58600	100	29300	200	58600	100	29300	200	58600
-2	2x2.5mm sq	M	166	100	16600	200	33200	100	16600	200	33200	100	16600	200	33200

EE (TECH.)

SE (RE)

Sl. No.	Particulars	Unit	Rate (Rs)	1x5 MVA		2x5 MVA		1x8 MVA		2x8 MVA		1x10 MVA		2x10 MVA	
				Qty.	Amount (Rs)	Qty	Amount (Rs)	Qty	Amt. (Rs)	Qty	Amt.(Rs)	Qty	Amt. (Rs)	Qty	Amount (Rs)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
					0		0		0		0		0		0
20	Earthing of substation				0		0		0		0		0		0
(a)	Outdoor equipment (earth mat)	Nos	509507	1	509507	1	509507	1	509507	1	509507	1	509507	1	509507
(b)	Indoor equipment	Nos	35504	1	35504	1.5	53256	1	35504	1.5	53256	1	35504	1.5	53256
21	Barbed wire fencing with gate etc (switchyard)	Nos	199118	1	199118	1	199118	1	199118	1	199118	1	199118	1	199118
22	Outdoor switchyard & Approach Road lighting	Nos	163833	1	163833	1	163833	1	163833	1	163833	1	163833	1	163833
23	63 KVA 11/0.4 KV T/F	Nos	104596	1	104596	1	104596	1	104596	1	104596	1	104596	1	104596
24	11KV TPMS switch with fixing clamps	Nos	18000	1	18000	1	18000	1	18000	1	18000	1	18000	1	18000
25	11 KV fuse set with fixing clamps	Nos	7321	1	7321	1	7321	1	7321	1	7321	1	7321	1	7321
26	Cost of accessories for mounting of 63 KVA T/F		32460	1	32460	1	32460	1	32460	1	32460	1	32460	1	32460
27	Painting of S/s structure		LS	-	9583	-	11180	-	9583	-	11180	-	9583	-	11180
28	Sundry stores		LS	-	5324	-	6655	-	5324	-	6655	-	5324	-	6655
	Total cost of material Rs.				8009222		13439890		9756726		16934898		9986750		17394946
	Say Rupees in Lacs				80.09		134.40		97.57		169.35		99.87		173.95

Note: 1- Provision of cost of Land 1.5 acre for substation has not been made. The same may be added as per actuals.

EE (TECH.)

21-

SE (RE)

Cost of civil works for Conventional 33/11 KV Sub-station as intimated by civil wing Shakti Bhawan Extn., Lucknow

Plains 2018-19

W.E.F 01.04.2018

Sl. No.	Type of building	Unit	Rate (Rs)	Conventional type S/s	
				Qty.	Amt. (Rs)
1	2	3	4	5	6
	Rural Area				
1	Switchgear Rooms	Nos	3355772.00	1	3355772.00
2	Road, culverts, Gate, fencing etc.	Nos	2181252.00	1	2181252.00
	Total				5537024.00
	Say (Rs. in Lacs)				55.37
3	Urban Area				
(I)	Double storey switch gear building, boundary wall etc.	Nos	11598996.00	1	11598996.00
(ii)	Single storey, switch gear room, boundary wall, collection, room etc.	Nos	8028686.00	1	8028686.00
(iii)	Double storey indoor 33/11KV s/s collection room, boudary wall etc.	Nos	18351545.00	1	18351545.00

Note:-The above rates are exclusive of Rehtretment/Black cotton treatment (15%) and white ant protection (5%). These rates do not include contingency, T&P as well as establishmnt and AA charges.



EE (TECH.)

22-



S.E. (RE)

PART- D

ABSTRACT OF COST OF INCREASING CAPACITY OF 33/11 KV SUB STATION

Plains 2018-19

W.E.F 01.04.2018

Rs. in Lacs

Sl. No.	Name of works	Cost of new material	cartage charges @ 3%	Erection charges @4%	Total of Col. 3, 4&5	3% contingencies on Col. 6	1.5% T&P on Col. 6	Total of Col. 6+7+8	31.5% of Esttb. & AA Charges on Col. 9	Total of Col. (9+10)	Cost of material received back (to be adjusted)	Reference
1	2	3	4	5	6	7	8	9	10	11	12	13
1	1x3 to 1x5 MVA	51.378	1.541	2.055	54.974	1.649	0.825	57.448	18.096	75.544	-22.022	Annex. 12
2	1x3 to 2x3 MVA	45.911	1.377	1.836	49.124	1.474	0.737	51.335	16.171	67.506	-3.370	Annex. 12
3	1x3 to (3+5) MVA	59.128	1.774	2.365	63.267	1.898	0.949	66.114	20.826	86.940	-3.370	Annex. 12
4	2x3 to (3+5) MVA	42.288	1.269	1.692	45.249	1.357	0.679	47.285	14.895	62.180	-22.270	Annex. 12
5	2x3 to 2x5 MVA	86.447	2.593	3.458	92.498	2.775	1.387	96.660	30.448	127.108	-44.292	Annex. 12
6	1x5 to (3+5) MVA	45.911	1.377	1.836	49.124	1.474	0.737	51.335	16.171	67.506	-3.370	Annex. 12
7	1x5 to 2x5 MVA	59.200	1.776	2.368	63.344	1.900	0.950	66.194	20.851	87.045	-3.246	Annex. 13
8	(3+5) to 2x5 MVA	44.340	1.330	1.774	47.444	1.423	0.712	49.579	15.617	65.196	-22.022	Annex. 13

Note: The cartage of erection charges has been taken as 3% and 4% of cost of material respectively. The actual charges may vary from site to site.

EE (TECH.)

23-

SE (RE)

Cost analysis of increasing capacity of 33/11 KV sub-station

W.E.F 01.04.2018

PLAINS : 2018-19

Sl. No.	Particulars	Unit	Rate (Rs)	1x3 MVA to 1x5 MVA		1x3 MVA to 2x3 MVA		1x3 MVA to (5+3) MVA		2x3 MVA to (3+5) MVA		2x3 MVA to 2x5 MVA		1x5 MVA to (3+5) MVA	
				Qty	Amt. (Rs)	Qty	Amt. (Rs)	Qty	Amt. (Rs)	Qty	Amt. (Rs)	Qty	Amt. (Rs)	Qty	Amt. (Rs)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1(i)	33 KV bus type isolator	Nos	43902	0	0	2	87804	2	87804	0	0	0	0	2	87804
(ii)	Structure for above	Nos	23865	0	0	2	47730	2	47730	0	0	0	0	2	47730
2(i)	33 KV post insulator set	Nos	659	0	0	-3	-1977	-3	-1977	-6	-3954	-6	-3954	-3	-1977
(ii)	Structure for above	Nos	10426	0	0	-1	-10426	-1	-10426	-2	-20852	-2	-20852	-1	-10426
3	Transformers bus bar complete with structure	Nos	165443	0	0	1	165443	1	165443	0	0	0	0	1	165443
4(i)	33 KV lightning arestor	Nos	4457	0	0	1	4457	1	4457	0	0	0	0	1	4457
(ii)	Structure for above	Nos	10426	0	0	1	10426	1	10426	0	0	0	0	1	10426
5	33/11 KV Transformers														
(i)	3 MVA	Nos	2202200	-1	-2202200	1	2202200	0	0	-1	-2202200	-2	-4404400	1	2202200
(ii)	5 MVA	Nos	3515116	1	3515116	0	0	1	3515116	1	3515116	2	7030232	0	0
6	90lbs rail pieces 44.64 kg/M	M	3425	0		6	20550	6	20550	0	0	0	0	6	20550
7	Plinth & foundation for transformers		134697	0	0	1	134697	1	134697	1	134697	2	269394	1	134697
8(i)	33 KV VCB with single T/F control pannel and CT 200/100/1A with structure (i) 33 KV VCB (ii) control panel I/C for 33KV single T/F (iii) CT 200/100/1-1A (iv) steel structure	Nos	324627	1	324627	-1	-324627	-1	-324627	0	0	0	0	-1	-324627
(ii)	33 KV VCB with double T/F control pannel and CT 200/100/1A with structure (i) 33 KV VCB (ii) control panel I/C for 33KV double T/F (iii) CT 200/100/1-1A (iv) steel structure	Nos	399320	0	0	1	399320	1	399320	1	399320	1	399320	1	399320
(iii)	Plinth & foundation for VCB	Nos	35302	1	35302	1	35302	1	35302	1	35302	1	35302	1	35302
9	11 KV VCB														
(i)	11KV VCB I/C CTR 400/200/5A, 350MVA, 630A	Nos	353384	1	353384	1	353384	1	353384	0	0	0	0	1	353384
(ii)	11 KV VCB O/G FDR CTR 200/100/5A, 250MVA	Nos	296127	2	592254	2	592254	2	592254	0	0	2	592254	2	592254

EE (TECH.)

SE (RE)

Sl. No.	Particulars	Unit	Rate (Rs)	1x3 MVA to 1x5 MVA		1x3 MVA to 2x3 MVA		1x3 MVA to (5+3) MVA		2x3 MVA to (3+5) MVA		2x3 MVA to 2x5 MVA		1x5 MVA to (3+5) MVA	
				Qty	Amt. (Rs)	Qty	Amt. (Rs)	Qty	Amt. (Rs)	Qty	Amt. (Rs)	Qty	Amt. (Rs)	Qty	Amt. (Rs)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
(iii)	Bus coupler	Nos	193000	0	0	1	193000	1	193000	0	0	0	0	1	193000
10	11KV 3 Core cable														
(i)	120 mm sq. XLPE	M	654	0	0	120	78480	120	78480	0	0	120	78480	120	78480
(ii)	185 mm sq. XLPE	M	891	120	106920	30	26730	0	0	0	0	0	0	30	26730
(iii)	300 mm sq. XLPE	M	1184	50	59200	0	0	30	35520	60	71040	60	71040	0	0
11	Laying of 11 KV cable including cost of sand & bricks	M	227	170	38590	150	34050	150	34050	60	13620	180	40860	150	34050
12	Making of 11 KV cable boxes mounted with switchgears and T/F (Kit)	Nos	24350	2	48700	4	97400	4	97400	2	48700	4	97400	4	97400
13	11 KV cable jointing with 120 sq.mm.	Nos	9664	0	0	2	19328	2	19328	0	0	2	19328	2	19328
14	Control cable				0										
(i)	4x2.5 mm sq	M	376	100	37600	100	37600	100	37600	0	0	0	0	100	37600
(ii)	2x2.5mm sq	M	239	100	23900	100	23900	100	23900	0	0	0	0	100	23900
15	Earthing of indoor equipments	Nos	31918	0	0	0.5	15959	0.5	15959	0	0	0	0	0.5	15959
16	Painting of S/s structure (LS)	Nos	8852	0	0	1	8852	1	8852	1	8852	1	8852	1	8852
17	Sundries (LS)	Nos	2196	1	2196	1	2196	1	2196	1	2196	1	2196	1	2196
18	Total Cost of new materials				5137789		4591062		5912768		4228843		8644658		4591062
	Total Cost of new materials (Rs.in Lacs)				51.38		45.91		59.13		42.29		86.45		45.91
	Total cost of material received back				-2202200		-337030		-337030		-2227006		-4429206		-337030
	Total cost of material received back (Rs.in Lacs)				-22.02		-3.37		-3.37		-22.27		-44.29		-3.37

EE (TECH.)

25-

SE (RE)

Cost analysis of increasing capacity of 33/11 KV Substation

PLAINS-2018-19

WEF 1.4.2018

Sl. No.	Particulars	Unit	Rates Rs.	1x5 MVA to 2x5 MVA		(3+5) MVA to 2x5 MVA	
				Qty	Amount	Qty	Amount
1	2	3	4	5	6	7	8
1(i)	33 KV bus isolator	Nos.	29619	1	29619	0	0
(ii)	Structure for above	Nos.	10426	1	10426	0	0
2(i)	33 KV Post insulator set	Nos.	659	3	1977	0	0
(ii)	Structure for above	Nos.	10426	1	10426	0	0
3	Transformer bus complete with structure	Nos.	165443	1	165443	0	0
4(i)	33 KV lightening arrestor	Set	4457	1	4457	0	0
(ii)	Structure for above	Nos.	10426	1	10426	0	0
5	33/11 KV Transformer						
(i)	3 MVA	Nos.	2202200	0	0	-1	-2202200
(ii)	5 MVA	Nos.	3515116	1	3515116	1	3515116
6	90 lbs rail pieces (44.64kg/M)	M.	3495	6	20970	0	0
7	Plinth & foundation of transformer	Nos.	134697	1	134697	0	0
8(i)	33 KV VCB with single T/F control pannel and CT 200/100/1A with structure (i) 33 KV VCB (ii) control panel I/C for 33KV single T/F (iii) CT 200/100/1-1A (iv) steel structure	Nos	324627	-1	-324627	0	0
(ii)	33 KV /VCB with double T/F control pannel and CT 200/100/1A with structure (i) 33 KV VCB (ii) control panel I/C for 33KV double T/F (iii) CT 200/100/1-1A (iv) steel structure	Nos	399320	1	399320	0	0
9	Plinth & foundation of VCB	Nos.	25302	1	25302	0	0
10	11 KV VCB						
(i)	Incoming CTR 400/200/5A 350 MVA	Nos.	353384	1	353384	0	0
(ii)	Outgoing CTR 200/100/5A 250 MVA	Nos.	296127	2	592254	2	592254
(iii)	Bus coupler	Nos.	242139	1	242139	0	0
11	11 KV 3 core cable						
(i)	120 mm sq XLPE	M.	1173	120	140760	120	140760
(ii)	300 mm sq XLPE	M.	1599	30	47970	30	47970

EE (TECH.)

26-

SE (RE)

Sl. No.	Particulars	Unit	Rates Rs.	1x5 MVA to 2x5 MVA		(3+5) MVA to 2x5 MVA	
				Qty	Amount	Qty	Amount
1	2	3	4	5	6	7	8
12	Laying of 11 KV cable including cost of bricks and sand	M.	227	150	34050	150	34050
13	Making of 11 KV cable boxes mounted with switchgears and transformers (Kit)	Nos.	21259	4	85036	4	85036
14	11 KV cable jointing kit 120 sq.mm	Nos.	3864	2	7728	2	7728
15	Control cable				0		0
(i)	4x2.5 mm sq	M.	376	100	37600	0	0
(ii)	2x2.5 mm sq.	M.	239	100	23900	0	0
16	Earthing of indoor equipments	Nos.	31918	0.5	15959	0	0
17	Painting of indoor equipments	LS	8852	1	8852	1	8852
18	Sundries	LS	2196	1	2196	1	2196
	Total cost of new materials				5920007		4433962
	Say (Rs. in Lacs)				59.20		44.34
	Cost of materials received back				-324627		-2202200
	Cost of materials received back(Rs. In Lacs)				-3.25		-22.02

EE (TECH.)

27-

SE (RE)

ESTIMATED COST OF ONE POLE WITH AVERAGE SPAN OF 40 METER OF 11 KV 3 PHASE WIRE SPUR LINE WITH WEASEL ACSR CONDUCTOR ON 8.5 METER LONG PCC POLE TO BE LAID INSIDE VILLAGES FOR VILLAGE ELECTRIFICATION.

Sl. No.	Items	Unit	Qty.	Rate (Rs)	Amt.(Rs)
1	Pole PCC 8.5 Meter Long	No	1	2721	2721
2	Conductor Weasel ACSR	Meters	185	24	4440
3	11 KV Pin Insulators	Nos	3	51	153
4	11 KV Pin	Nos	3	72	216
5	11 KV V-type Cross-arm (MS. angle 65x65x6 mm)	Nos	1	744	744
6	Guarding Cross-arm (M.S. angle 65x65x6mm/1.6 Meter long), 5.8kg./M=9.28kg.	Nos	1	465	465
7	L.T. Cross arm (MS angle 65x65x6mm, 1.00 Meter long)	Nos	1	291	291
8	F-bracket with bolt & nuts	Nos	1	265	265
9	G.I. wire 6 SWG and 10 SWG for guarding, lacing and street light cable catenary	Kg.	22	62	1364
10	L.T. PVC Al. 2x4sq. mm cable for street light	Meters	50	62	3100
11	Clamp for fixing X-arms with bolts and nuts (3 No.X-arms)	Nos	3	304	912
12	Eye bolts for guard wires and LT cable catenary wires	Nos	3	58	174
13	Danger Board, number plate with fixing clamp, nuts and bolts	Set	1	461	461
14	G.I. Barbed wire	Kg.	1	162	162
15	Stone Pad (300x300x75mm)	No	1	140	140
16	Stay complete (stay rod 16x1800mm, stay wire 5 kg, stay clamp, bolt & nut with grouting)	No	0.50	1961	981
17	Earthing of pole by MS earthing rod of 20x2500 mm. and 6 SWG earthing wire etc.	No	1	838	838
18	Grouting of pole (0.268 cu.m) @ 1800	No	1	856	856
19	Total Cost of materials				18283
20	i) Cartage charges		1	1280	1280
	ii) Erection charges		1	1463	1463
21	Sub Total				21025
22	O.H. charges @ 36% on (21) above (31.5% Establishment +1.5% T&P +3% contingency)				7569
	Grand Total				28595
				Say	28590

E.E (TECH.)

28-

S.E.(RE)

**ESTIMATED COST OF SECTIONAL POLE ON 8.5 METER LONG PCC POLES
WITH 11 KV TPMO RURAL AREA FOR VILLAGE ELECTRIFICATION.**

Sl. No.	Items	Unit	Qty.	Rate (Rs)	Amt.(Rs)
1	Pole PCC 8.5 Meter Long	No	2	2721	5442
2	Stone Pad	No	2	140	280
3	M.S. Channel Cross Arm (100X50X75mm) Top Channel	No	1	737	737
4	Cross bracing M.S. Angle (50X50X6mm) 4.5 Kg/M with clamp	Sets	1	743	743
5	Clamps with Nuts & Bolts Channel	Nos	2	304	608
6	Barbed wire GI	Kg.	2	162	324
7	Danger Board & Clamps with bolts & nuts	No.	1	461	461
8	Concreting Of poles (0.268 cm)	No.	2	856	1712
9	Earthing of pole by MS earthing rod of 20x2500 mm. and 6 SWG earthing wire etc.	No.	2	838	1676
10	"F" Bracket with nuts & bolts	No.	3	265	795
11	11 KV Disc Insulators	No.	6	287	1722
12	11 KV Disc fittings	No.	6	97	582
13	11 KV pin insulators	No.	3	51	153
12	11 KV pin with nut	No.	3	72	216
13	PG Clamps for weasel	No.	6	257	1542
14	Stay complete (stay rod 16x1800mm, stay wire 5 kg, stay clamp, bolt & nut with grouting)	No.	6.00	2027	12162
15(a)	11 KV TPMO with fixing clamps	No.	1	18000	18000
15(b)	11 KV Fuse Sets (drop out) with clamps	No.	1	7321	7321
16	Total Cost of materials				54476
17	i) Cartage charges				3813
	ii) Erection charges				4358
18	Sub Total				62647
19	O.H. charges @ 36% on (18) above (31.5% Establishment +1.5% T&P +3% contingency)				22553
20	Grand Total				85200
				Say	85200



E.E (TECH.)

29-



S.E.(RE)

ESTIMATED COST OF SINGLE POLE MOUNTED, 11 KV/230 V SINGLE PHASE 10 KVA TRANSFORMER SUB STATION FOR HVDS SYSTEM IN RURAL AREA FOR VILLAGE ELECTRIFICATION.

Sl. No.	Particulars	Unit	Unit Rates Rs.	10 KVA	
				Qty	Amount
1	2	3	4	5	6
1	Transformers				
	10 KVA, 11 KV/0.25 K V, 1 Ph.T/F.	Nos.	35354	1	35354
2	Distribution Box (D.B.)	Nos.	5856	1	5856
3	Clamps for D.B. (40x6mm)	Nos.	304	2	608
4	Clamps for T/F (75x8mm)	Nos.	304	2	608
5	ACSR Weasel Jumpers	M.	48	10	480
6	11 KV Pin Insulator	Nos.	196	2	392
7	11 KV Pins with nut	Nos.	209	2	418
8	Eye bolts for service cables	Nos.	58	3	174
9	PVC Cables				0
	i) 10 Sq. MM single core	M.	41	5	205
	ii) 16 Sq. mm. single core	M.	48	0	0
9	Stay complete (stay rod 16x1800mm, stay wire 5 kg, stay clamp, bolt & nut with grouting)	Set	2027	1	2027
10	Earthing of pole by MS earthing rod of 20x2500 mm. and 6 SWG earthing wire etc.	Nos.	838	2	1676
11	Total Cost of materials				47798
12	i) Cartage charges		LS		3346
	ii) Erection charges		LS		3824
13	Sub Total				54968
14	O.H. charges @ 36% on (13) above (31.5% Estt. +1.5% T&P +3% contingency)				19788
15	Grand Total				74756
			SAY	Total	74756


E.E (TECH.)

30-


S.E.(RE)