

**LABOUR RATES FOR COMMON SR 2021-22 for 33 kV SYSTEM**

Sl No	Item No	Description	Unit	Labour charges Common SR 2018-19 in Rs.	Labour charges Common SR 2021-22 in Rs.
	<b>1</b>	<b>Detailed Surveying on Turn-Key:</b>			
	i)	Reconnaissance Survey-cum-walk over Survey along with Departmental Staff to determine the feasible route of the line on topo sheet. An alternate route if available should be indicated. The route of the line is to be indicated and got approved by the competent authority (Rates include the cost of Toposheet and Transportation)			
1	a)	Hilly terrain	km	1781	<b>2048</b>
2	b)	Plain terrain	km	1687	<b>1940</b>
	ii)	Detailed Survey, fixing anchor points and taking levels at 20 mtrs intervals, drawing route profile on Graph paper indicating geographical features like Nalas, Rivers, Gardens, P&T Lines, Railway-crossings etc., and enroute villages furnishing Geo-coordinates of each location with survey Nos of the lands through which the line is passing duly covering the corridor proposed to be cleared.			
3	a)	Hilly terrain	km	8601	<b>9891</b>
4	b)	Plain terrain	km	5748	<b>6610</b>
5	iii)	Fixing marking stones of size 200X200 x 1000 mm with approved marks including painting above the ground level and Yellow Lettering and marking the direction of incoming line and out going lines are to be clearly marked on the top with red colour. If the distance between two anchor points is more than 1 km, one more directional stone is to be fixed. So also for the road crossing, railway crossing, River crossing, HT crossing and nala crossing for all on both the sides.	Per Stone	486	<b>559</b>
6	iv)	Burgie details for identification for all Anchor towers with existing permanent marks like poles, telephone lines, buildings, etc.,	Per Anchor Tower	440	<b>506</b>
7	v)	v) Conducting soil resistivity tests	Per Test	843	<b>969</b>
	vi)	Clearing of bushes, tree branches of trees crops and shrubs wherever encountered for detailed survey to enroute the corridor width of 3 mtrs (including viewing for fixing anchor towers etc.,)			
8	a)	Hilly terrain	KM	1459	<b>1678</b>
9	b)	Plain terrain	KM	975	<b>1121</b>
10	vii)	a) Submission of reports in the form of good binding including the preparation of sketches for burgie details for each anchor points, scheduling of line details, S.R. values, soil classification reports, tower schedule, abstract of towers etc., complete.	Per set	297	<b>342</b>
11		b) Drawing the route profile on graph sheet, including geographic feature like Nalas, rivers, gardens, P&T lines railway crossing etc, inclusive of all stationaries. (Normal requirement is 5 Sets)		297	<b>341</b>
12	Viii) a)	<b>Preparing the Schedules:</b> PTCC Proposal : Containing PTCC questionnaire, topo sheet extracts with marking of the proposed line, SR Report, tower sketch, station single line diagram etc., (30 Copies/Sets)	Set	1176	<b>1352</b>
13	b)	Railway Crossing proposal with drawing are inclusive of graph sheets and other stationery materials, labour etc., (10 Sets)	Per crossing	1176	<b>1352</b>
14	c)	Tree Schedule Containing the details like name of tree, girth size of tree, distance from central line of the alignment, approximate height of the tree etc., complete	Per Hectare	843	<b>969</b>

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15	d)	<b>Forest proposals:</b> Inclusive of all works like fixing of stones at every 20 mtrs in the centre line and both ends of the corridor, painting of each tree after chipping, writing the numbers on the tree, taking girth size of all the trees coming in the corridor at 1 mtr height from GL, approximate height of the tree and forest clearance proposals etc., complete (10 Sets). <b>Note:</b> This applies to forest area only.	Km	5484	<b>6307</b>
	<b>2</b>	<b><u>Check Survey by using their own Equipment</u></b>			
16	2.01	Hilly terrain	KM	4290	<b>Refer KPTCL SR</b>
17	2.02	Plain Terrain	KM	2864	<b>Refer KPTCL SR</b>
	<b>3</b>	<b><u>Taking block levels for Sub-stations:</u></b>			
18	a)	Running Peripheral Theodolite traverse along periphery and coordinating and heightening of all corners/turning points, establishing permanent co-ordinate axis formation of grids at 50m intervals for northing and easting with reference to already established permanent co-ordinate axis levels at 50m grid intersection for preparing plot plan of the entire area with contours. Including existing structure location.	Acre	1627	<b>1871</b>
19	b)	Establishing datum level and bench marks at every 100m/50m intervals both longitudinal and laterally and all corners/turning points with stone pillars of size not less than 0.2mx2mx1.0m buried on the ground and exposed top engraved for painting RL, and coordinates of that point.	No	1627	<b>1871</b>
20	c)	Taking level at 5M suitable grid interval in the sub-station area for plotting block levels, contour map.	No	35	<b>40</b>
21	d)	Preparation of CAD drawings, generating the contours using appropriate software and submission of 6 sets of blue prints and one tracing sheet (original) and one soft copy etc. Complete.	Per Project	16258	<b>18697</b>
22	e)	Furnishing cutting and filling quantities using appropriate software for earth work calculation.	Per Project	4877	<b>5609</b>
23	f)	Super imposing GA drawings on contour maps in Co-ordination with departmental engineers and supply of 12 sets of blue print drawings etc., complete.	Per Project	13005	<b>14956</b>
	<b>4</b>	<b><u>Geo Technical Investigations:</u></b>			
24	a)	Making 150mm nominal diameter bore holes at various locations in soil using suitable approved method of boring including, cleaning providing Bore holes at interval and at change of strata, collections of water samples, observation such as ground water etc., Collection of undisturbed soil samples at ever 2.0m/3.0m interval and at change of strata, transportation of all the collected samples to the laboratory and back filling of bore holes on completion of the work, complete as per specification and instruction of the engineers, for depths up to 6.0 m below natural ground level or refusal strata.	Mtrs	2433	<b>2798</b>
	b)	Conducting various laboratory tests on soil samples at approved laboratory including preparation of soil samples for determination of soil, Properties etc., Complete as per specification. <b>Note:</b> Laboratory identified shall be approved by ESCOM Engineers not below the rank of EE(Civil).			
25	i)	Bulk density and moisture content	Each	975	<b>1121</b>
26	ii)	Sieve analysis	Each	975	<b>1121</b>
27	iii)	Hydrometer Analysis	Each	975	<b>1121</b>
28	iv)	Liquid limit and plastic limit	Each	975	<b>1121</b>
29	v)	Shrinkage limits	Each	1139	<b>1310</b>
30	iv)	Specific gravity	Each	1139	<b>1310</b>
31	vii)	Standard proctor density test	Each	1139	<b>1310</b>
32	viii)	Swell pressure	Each	1306	<b>1502</b>
33	ix)	Free swell index	Each	1306	<b>1502</b>
34	x)	Uncombined Compressive strength	Each	1306	<b>1502</b>
35	xi)	Triaxial shear test	Each	1306	<b>1502</b>

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36	xii)	One dimensional consolidation test	Each	1306	1502
37	xiii)	California bearing ratio	Each	1306	1502
38	C)	Submitting final report in 6 copies including all field records and laboratory test results, graphs and recommendations etc., complete as per specifications.	Per Job	19512	22439
		<b>Note:</b> The above rates are inclusive of mobilization of Plant Equipment & Materials for, Topographical survey, block leveling and Geotechnical investigation works, and Demobilization. No extra rate is admissible for mobilization & Demobilization			
	<b>5</b>	<b><u>Excavation for station structure:</u></b>			
		Excavation of pits as per specifications for lattice type of station structures, Tr. Plinth, control panels, mounting structures for breakers, CT's, PT's Isolators, LA's etc., Excavation of trenches for control cables, U.G. Cables, Groundmat etc.,		1) Corresponding rates in KPWD SR as mentioned against each classification below shall be adopted. 2) Area weightages applicable for the respective areas as per latest KPWD SR shall be allowed to arrive at Final Rate. 3) Extra for excavation under water conditions and/or foul conditions including bailing/pumping out, rempving slush add 20% of the rate of the respective rate on account of slow progress of work.	<b>Refer KPTCL SR</b>
39	i)	Normal Soil	Cmt	Latest KPWD SR Rates for hard soil	<b>Refer KPTCL SR</b>
40	ii)	B.C. Soil	Cmt	Latest KPWD SR Rates for Ordinary soil	<b>Refer KPTCL SR</b>
41	iii)	Partially Submerged soil	Cmt	Latest KPWD SR Rates for Ordinary soil	<b>Refer KPTCL SR</b>
42	iv)	Fully submerged soil	Cmt	Latest KPWD SR Rates for Ordinary soil	<b>Refer KPTCL SR</b>
43	v)	Wet black cotton soil	Cmt	Rate for ordinary rock (Without blasting) of latest KPWD SR	<b>Refer KPTCL SR</b>
44	iv)	Dry fissured/Ordinary rock	Cmt	Latest KPWD SR Rates for Ordinary rock	<b>Refer KPTCL SR</b>

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45	vii)	Latterite soil	Cmt	Rate for ordinary rock (Without blasting) of latest KPWD SR	<b>Refer KPTCL SR</b>
46	viii)	Hard rock with blasting/Hard latterite	Cmt	Rate for Hard rock (With blasting) of latest KPWD SR	<b>Refer KPTCL SR</b>
		<b>Note 1:</b> For Excavation purposes measurement shall be as per actuals. <b>Note 2:</b> For foundation purposes predominant soil shall be considered.			
	<b>6</b>	<b>Excavation (For Tr. Line Tower)</b>			
47	i)	Normal Soil	Cmt	Rates as above per <b>item 5</b> + 50% extra	Rates as above per <b>item 5</b> + 50% extra
48	ii)	B.C. Soil	Cmt		
49	iii)	Partially Submerged soil	Cmt		
50	iv)	Fully submerged soil	Cmt		
51	v)	Wet black cotton soil	Cmt		
52	vi)	Dry fissured/Ordinary rock	Cmt		
53	vii)	Latterite soil	Cmt		
54	viii)	Hard rock with blasting/Hard latterite	Cmt		
	<b>7</b>	<b>Back Filling :</b>			
55	i)	Back filling with excavated earth available near the tower and consolidation layer by layer of 150 mm depth with adequate quantity of water.	Cmt	Rates as per KPWD SR applicable to respective area +10% extra	Rates as per KPWD SR applicable to respective area +10% extra
56	ii)	Supplying and back filling with external hard murrum soil with proper consolidation including lead and lift.	Cmt	Rates as per KPWD SR applicable to respective area +10% extra	Rates as per KPWD SR applicable to respective area +10% extra
		<b>Note:</b> This item is applicable only when Black cotton, soil, wet black cotton soil, dry fissured rock, ordinary rock, Hard rock are encountered.			
	<b>8</b>	<b>Concreting and curing (For Both Transmission lines and station structures)</b>			
	a)	Concreting & curing as per specifications including the cost of materials,T&P materials and labour charges with all lead and lift, for lattice type station structures,Tr. Plinth, control panels, mounting structures for Breakers, CT's PT's Isolators, LA's, etc.,		1) Corresponding rates in latest KPWD SR as mentioned against each classification shall be adopted. 2) For the above basic rate add applicable area weightage as per latest KPWD SR.	<b>Refer KPTCL SR</b>
57	i)	1:4:8 concrete (M 7.5)	Cmt	Rates under plain concrete for foundation of latest KPWD SR	<b>Refer KPTCL SR</b>

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58	ii)	1:3:6 concrete (M-10)	Cmt	Rates under basement of latest KPWD SR	<b>Refer KPTCL SR</b>
59	iii)	1:2:4 concrete (M-15)	Cmt	Rates under raft foundation of latest KPWD SR	<b>Refer KPTCL SR</b>
60	iv)	1:1.5: 3 concrete (M-20)	Cmt	Rates under raft foundation of latest KPWD SR	<b>Refer KPTCL SR</b>
61	b)	Concreting and curing as per specifications including the cost of materials, T&P materials and labour charges with all lead and lift, for Tr. line towers.	Cmt	For arriving at the rates for concrete items for transmission lines add 50% weightage to the basic rates of different proportion of concrete proposed above.	<b>Refer KPTCL SR</b>
		<b>Note :</b> a) Extra as indicated in the relevant KPWD SR may be allowed for providing concrete in watery situation including cost of bailing out water and removing slush. b) Only machine mixing is to be used for concreting. c) Jelly to be used is 20mm and down size for 1:1.5:3, 1:2:4 and 1:3:6 concrete and 40mm and down size for CC 1:4:8. d) 50% above KPWD SR is proposed only for Tr line works from 2016.			
		<b>Providing and fabricating TMT Steel reinforcement including straightning, cutting, bending, hooking, lapping and / or welding wherever required placing in position tieing with binding wire and anchoring to the adjoining members wherever necessary including laps and wastages etc., complete as per design, and specification and directions (Laps and wastages not to be measured and paid)</b>	kgs	For sub - station works, rate as per KPWD SR and for Transmission line works, add 10% extra	<b>Refer KPTCL SR</b>
	<b>9</b>	<b><u>Towers</u></b>			
62	a)	Sorting of tower parts made of fabricated angle iron	MT	381	<b>438</b>
63	b)	Setting up of stubs templates and from one location to another location	Per Location	495	<b>569</b>
64	c)	Assembling and erection of towers including tightening of bolts and nuts including loading,unloading at store and site (Including the Wt. of stubs)	MT	2764	<b>3178</b>
65	d)	Rivetting of tower bolt ends by heating using dry- Acetylene gas and hammering to destroy threads so as to make the tower members theft - proof (Bolts at nodal points only to be selected and rivetted up to hieght of bottom cross arm, as per the directions of the field engineer)	Per Bolt	13	<b>15</b>
66	e)	Welding of bolts and nuts	Per Bolt	13	<b>15</b>
		<b>Note:</b> For tower erections requiring shutdown 25% above S.R. for item 5c to 5e only are to be adopted.			
	<b>10</b>	<b><u>Supplying and fixing AC devices:</u></b>			

Sl No	Item No	Description	Unit	Labour charges Common SR 2018-19 in Rs.	Labour charges Common SR 2021-22 in Rs.
67	a)	Supplying and fixing G.I. Angle iron 45x45x5 mm (1mtr length) with cleats, bolt & nuts as per specification and fixing above 0.5 mtrs length each at inner and outer surface of the tower to facilitate running of barbed wire.	Per Set	2705	3111
68	b)	Supplying and fixing barbed wire as per specification	Rmtr	52	60
	<b>11</b>	<b>Fixing of Boards</b>			
69	a)	Fixing Danger Board	Nos	53	61
70	b)	Fixing Number Plate	Nos	53	61
71	c)	Fixing Phase plate	Set (3 Nos)	155	178
72	d)	Fixing Circuit Plates	Nos	53	61
	<b>12</b>	<b>Stringing conductor with out allowing the conductor to touch the ground and with out damaging the conductor</b>			
	A	Paving out the conductor from anchor to anchor normally spaced at 5 spans with 4 tangent towers in between, including providing stays at each anchor points and jointing of conductors, hosing and fixing of insulator string, armour rods, vibration dampers, including the cost of T & P materials like comealong, wire ropes, pulley, rollers, suspension, clamps, compression jointing machines with bits, drum stands, manila ropes, truckker and jeep etc (Rate of 1 route KM of single conductor)			
73	i	For hilly terrain	KM	11296	Refer KPTCL SR
75	i	For plain Terrain	KM	8281	Refer KPTCL SR
		<b>Stringing of Ground Conductor as above</b>			
77		For hilly terrain	KM	5528	Refer KPTCL SR
78		For plain Terrain	KM	4140	Refer KPTCL SR
		<b>Note:</b>			
79		II) For shut down works 50% more than the above rates of the Work (This is applicable to shutdown of 33 kV and above lines only. 11 kV and LT lines shutdown not included).		50% more above the rates specified for normal works is admissible for shutdown works of 33 kV and above lines, CTs, PTs, Las only. This is not applicable for 11 kV and LT Line shut down works.	Refer KPTCL SR
80		III) (A) River Crossing works (B) Railway Crossing Works (C) Breakdown works in substations & lines		100% extra	Refer KPTCL SR
81		IV) 2nd Circuit stringing with 1st circuit under live condition		75% extra	Refer KPTCL SR
82		V) (A) National highway and State highway crossing works (B) Works under shutdown condition in both substation and lines (Pre-programed works)		50% extra	Refer KPTCL SR
	<b>13</b>	<b>Stringing Conductors for short lengths: These Rates are applicable only when total Length of the entire Line is less than 3 spans (River crossing, railway crossing Etc.,).</b>			
		<b>A) Stringing of conductors in special conditions where normal 5 spans between anchor to anchor are not encountered, whereas anchors are provided at single/ two/ three spans with average span intervals of 267/320 Mtrs, (rate for spans of single conductor)</b>			
		<b>i) For hilly terrain</b>			
83	a)	Anchoring single span upto 320 mtrs.	1 Span	6375	Refer KPTCL SR

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85		<b>b)</b> Anchoring 2 span interval upto 640 mtrs with 1 (ONE) tangent tower only	2 Spans	7904	Refer KPTCL SR
87		<b>c)</b> Anchoring 3 span interval up to 960 mtrs with two tangent towers only	3 Spans	9268	Refer KPTCL SR
		<b>ii) For plain terrain</b>			
89		<b>a)</b> Anchoring single span up to 320 Mtrs	1 Span	4782	Refer KPTCL SR
91		<b>b)</b> Anchoring 2 span interval upto 640 Mtrs with 1 (ONE) tangent tower only	2 Spans	6123	Refer KPTCL SR
93		<b>c)</b> Anchoring 3 span interval up to 960 mtrs with two tangent towers only	3 Spans	6860	Refer KPTCL SR
		<b>Stringing Ground Conductor</b>			
		<b>i) For Hilly terrain</b>			
		a) Anchoring Single span upto 320 mtrs	1 span	2822	<b>3245</b>
		b) Anchoring 2 span interval upto 640 mtrs with one tangent tower only	2 Spans	3364	<b>3869</b>
		c) Anchoring 3 span interval up to 960 mtrs with two tangent towers only	3 Spans	3999	<b>4599</b>
		<b>ii) For plain terrain</b>			
		a) Anchoring Single span upto 320 mtrs	1 span	2124	<b>2443</b>
		b) Anchoring 2 span interval upto 640 mtrs with one tangent tower only	2 Spans	2583	<b>2970</b>
		c) Anchoring 3 span interval up to 960 mtrs with two tangent towers only	3 Spans	3041	<b>3497</b>
		<b>NOTE:</b> For shut down works 50% more than the above rates of the Work (This is applicable to shutdown of 33 kV and above lines only. 11kV & LT line shutdown works not included).			
	<b>14</b>	<b><u>Rates for Short span stringing in Normal length of the line of more than 3 spans comprising of short spans</u></b>			
		<b>A)</b> Stringing of conductors in special conditions where normal 5 spans between anchor to anchor are not encountered, where as anchors are provided at single/ two/ three spans with average span intervals of 275/320 Mtrs (Rate for spans of Single Conductor)			
		<b>i) For hilly terrain</b>			
95		<b>a)</b> Anchoring single span upto 320 Mtrs	1 Span	949	Refer KPTCL SR
97		<b>b)</b> Anchoring 2 span interval upto 640 Mtrs with 1 tangent tower only	2 Spans	1579	Refer KPTCL SR
99		<b>c)</b> Anchoring 3 Span interval up to 960 Mtrs with two tangent towers only	3 Spans	2314	Refer KPTCL SR
		<b>ii) For Plain terrain</b>			
101		<b>a)</b> Anchoring single span upto 320 Mtrs	1 Span	712	Refer KPTCL SR
103		<b>b)</b> Anchoring 2 span interval upto 640 Mtrs with 1 tangent tower only	2 Spans	1163	Refer KPTCL SR
105		<b>c)</b> Anchoring 3 Span interval upto 960 Mtrs with two tangent towers only	3 Spans	1719	Refer KPTCL SR
		<b>Stringing Ground Conductor</b>			
		<b>i) For Hilly terrain</b>			
		a) Anchoring Single span upto 320 mtrs	1 span	427	491
		b) Anchoring 2 span interval upto 640 mtrs with one tangent tower only	2 Spans	677	779
		c) Anchoring 3 span interval up to 960 mtrs with two tangent towers only	3 Spans	1000	1150
		<b>ii) For plain terrain</b>			

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		a) Anchoring Single span upto 320 mtrs	1 span	323	371
		b) Anchoring 2 span interval upto 640 mtrs with one tangent tower only	2 Spans	521	599
		c) Anchoring 3 span interval up to 960 mtrs with two tangent towers only	3 Spans	760	874
	<b>15</b>	<b>Grounding of Towers/Equipments</b>			
107		a) Grounding of towers including cost of 40mm dia 2.5 mm thick, class 'C' G.I. Pipe of 3 Mtrs length as per specifications, with 50X6 mm GI Flats 3 Mtr long, salt charcoal, including excavation charges.	Set	3010+832	Refer KPTCL SR
108		b) Grounding of towers/Equipments excluding the cost of G.I. Pipe/C.I. Pipe as per specifications with 50X6 mm G.I. Flat 3 Mtr Long (to be supplied departmentally). But salt & Charcoal to be supplied by contractor. The rates include excavation charges.	Set	789+832	Refer KPTCL SR
109		c) Grounding of equipments by providing cast iron pipe of 100mm ID 13mm thickness, 2.75 Mtrs long with 2 part clamp out of G.I.Flat 50X6mm continuously welded around the pipe using cast iron welding electrodes as per drawing including the cost of excavation (All materials to be supplied by the contractor)	Set	7370+2011	Refer KPTCL SR
		<b>Note : All the leads from earthmat &amp; equipment should be connected to earth electrode through the GI Flat 50 x 6 mm of suitable length and welded as per specifications.</b>			
110	<b>16</b>	Supplying and fixing of counter poise earthing with GI Stranded wire where hard rock is encountered as per specifications. (including excavation charges).	Per Loc	2143+1916	Refer KPTCL SR
	<b>17</b>	<b>Station Structures</b>			
111	a)	Erection, assembly and alignment of Station structure as per the directions of site Engineer.	MT	2609	Refer KPTCL SR
112	b)	Erection, alignment & assembly of fabricated steel lattice structure, pedestal structures & Mounting structures, for G.O.S., CT's, PT's LA's etc.,	MT	2431	Refer KPTCL SR
	<b>18</b>	<b>Erection of Transformers</b>			
113	a)	Moving the Transformer on to the plinth (Maximum allowable distance is 50 mtrs.) more than 50 mtrs. approval of the CEE, O&M Zone has to be obtained)	Per MT/Mtr	51	Refer KPTCL SR
114	b)	Assembly of Transformer parts like bushings, radiators, filling oil into Tr. etc., (for the total wt. of the Tr.)	MT	1165	Refer KPTCL SR
	c)	<b>Filling oil to the power Tr., Conservator and radiator (for maintenance purpose only).</b>			
115	i)	For 5 MVA to 20 MVA Tr.	Litre	2.49	Refer KPTCL SR
116	d)	Filtration of oil using filter set of the contractor, to bring the insulation value to I.E. Specifications.	Litre	4.66	Refer KPTCL SR
117	e)	Filtering Oil as above but with the filter set supplied by the ESCOM	Litre	2.49	Refer KPTCL SR
	<b>19</b>	<b>Wiring of Transformer marshalling box, bucholtz relay, fixing Thermometer, OLTC upto control panel and assisting in testing and commissioning by RT/MT/Firm Engineers.</b>			
118	i)	5 MVA to 6.3/8 MVA Tr.	LS	5363	Refer KPTCL SR
		10 MVA to 12.5 MVA Tr.	LS	9414	Refer KPTCL SR
119	<b>20</b>	<b>Fabrication of Transformer railing and embedding in Transformer plinth. (Rails to be supplied by the ESCOMs)</b>	LS	1077	Refer KPTCL SR
120	<b>21</b>	<b>Fixing of H.T. fuse units &amp; wiring</b>	Per Set (3 Nos)	1252	Refer KPTCL SR
	<b>22</b>	<b>Wiring Testing &amp; Commissioning of 5 MVA 33/11 kV Power Transformers</b>			
121		a) <b>Wiring:</b> Identification of wires, Ferruling crimping and termination of wires. Wiring of Protective Devices, Cooling fans, Oil flow Pumps, OLTC, RTCC			
		<b>5/6.3 MVA</b>		6509	Refer KPTCL SR



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		<b>8/10 MVA</b>		6575	Refer KPTCL SR
		<b>Above 10 MVA</b>		9862	Refer KPTCL SR
122		<b>b) Testing:</b> 1. Ratio Test 2. SC test 3. Excitation test 4. Magnetic Balance test 5. Vector group test. 6. induced high voltage test. 7. OLTC operation. 8. Protective devices operation checks. 9. stability checks:- for differential and REFR protection	Each	26035	Refer KPTCL SR
	<b>23</b>	<b><u>Erection of Breakers / 11 kV Kiosks with CTs on Mounting Structures</u></b>			
	a)	<b>BREAKERS</b>			
123	i)	Erection, assembly, alignment & interpole wiring of breakers with its connected equipments including movement from the point of unloading to the point of erection.	Per Set	7319	Refer KPTCL SR
124	ii)	Assisting in Testing and Commissioning	Each	1466	Refer KPTCL SR
		<b>Testing &amp; Commissioning:</b>			
125		<b>Wiring:</b> Identification, of wires Ferruling crimping and termination of wires in Breaker & Wiring up to control panel / Relay panels.	Set	6509	Refer KPTCL SR
126		<b>Testing:</b> Test for insulation level, gas leakage, Testing for travel time, Trip and close timings. Local Trip close Test, Remote trip and close test, Tripping rthrough relays, operation of interlocks etc.,	Set	26035	Refer KPTCL SR
	<b>24</b>	<b><u>Erection of CTs and PTs</u></b>			
127	a)	Erection of CTs and PTs and wiring including movement from the point of unloading to the point of erection.	Set (3 Nos)	1902	Refer KPTCL SR
128	b)	Assisting in Testing and Commissioning	Set	572	Refer KPTCL SR
	c)	<b>Testing &amp; Commissioning</b>			
		<b>Current transformers:</b>			
		<b>Wiring:</b> Indentification of wires Ferruling Crimping of lugs Connections up to marshalling box and Control panel. Current transformers: Tests: Insulation, Polarity, Ratio, Excitation		2169	Refer KPTCL SR
129	i)	Testing & Commissioning of CTs : Tests: Insulation, Polarity, Ratio, Excitation	Set (3 Nos)	8677	Refer KPTCL SR
130	ii)	<b>Potential Transformers:</b>			
		Wiring: Indentification of wires Ferruling Crimping of lugs Connections up to marshalling box.	Set (3 Nos)	2169	Refer KPTCL SR
		Testing & Commissioning of PTs: Tests: Insulation, Polarity, Ratio,excitation.	Set (3 Nos)	8677	Refer KPTCL SR
	<b>25</b>	<b><u>Erection of NCTs</u></b>			
131	a)	Erection of NCTs with ground including movement from the point of unloading to the point of erection	Set	550	Refer KPTCL SR
132	b)	Assisting in Testing and Commissioning	Set	70	Refer KPTCL SR
	<b>26</b>	<b><u>Erection of Isolators</u></b>			
133	a)	Assembly, Erection alignment and wiring including movement from the point of unloading to the point of erection. (Upright)	Set	1144	Refer KPTCL SR
134	b)	Assisting in Testing and Commissioning (Upright)	Set	117	Refer KPTCL SR

Sl No	Item No	Description	Unit	Labour charges Common SR 2018-19 in Rs.	Labour charges Common SR 2021-22 in Rs.
		<b>Note :</b> 1) Assisting in testing and commissioning for item No. 13 to 18 means contractors should provide labourers for testing and commissioning by RT/MT/Firm engineers. 2) Testing & Commissioning in item 13 & 18 means the testing will be carried out by the firms themselves using their own testing equipments and staff in presence of the MRT staff who will witness the tests.			
	<b>27</b>	<b>Erection of Lightning Arrestors</b>			
135		Erection of Lightning arrestors and wiring including movement from the point of unloading to the point of erection	Set	286	Refer KPTCL SR
136	<b>28</b>	Fixing of Solid Core insulator	Per Stack	95	Refer KPTCL SR
137	<b>29</b>	Testing & Commissioning: Capacitor Bank with reactors	Each	16858	Refer KPTCL SR
		<b>Control Cables and U.G. Cables</b>			
	<b>30</b>	<b>Formation of Cable Duct</b>			
138	a)	(i) Burnt brick/size stone/RCC <b>Cable duct</b> including form box, back filling the sides, removing the excess excavated soil, duct covering with RCC slabs.	Cmt	As per Latest KPWD electrical SR applicable to respective areas.	Refer KPTCL SR
139		(ii) Supplying 300 mm dia 1.5" to 2" thick RCC Hume pipes including loading unloading, and transportation charges and laying at required level and gradient as per the direction of field engineer	Rmtr	As per Latest KPWD electrical SR applicable to respective areas.	Refer KPTCL SR
140	b)	Providing, laying and jointing PVC pipes conforming to IS 4085-1960, & 7634-1975, and approved makes with necessary specials such as collars, bends, Elbows, Tee, nipples, plugs with cuts and threads using jointing ring with solutions, wherever necessary as per the directions of the field Engineer including all lead and lift.		As per Latest KPWD electrical SR applicable to respective areas.	Refer KPTCL SR
141	i)	25 mm dia (outer) 2mm to 2.5mm thick	Mtr	As per Latest KPWD electrical SR applicable to respective areas.	Refer KPTCL SR
142	ii)	32 mm dia (outer) 2mm to 2.5mm thick	Mtr		
143	ii)	63 mm dia (outer) 2mm to 2.5mm thick	Mtr		
144	iv)	75 mm dia (outer) 2mm to 2.5mm thick	Mtr		
145	v)	90 mm dia (outer) 2mm to 2.5mm thick	Mtr		
146	vi)	110 mm dia (outer) 2mm to 2.5mm thick	Mtr		
147	vii)	140 mm dia (outer) 2mm to 2.5mm thick	Mtr		
148	vii)	160 mm dia (outer) 2mm to 2.5mm thick	Mtr		
	d)	<b>Supplying &amp; Laying cable trays including welding fixing of supports</b>			
149	i)	Cable tray of 600mm width (suitable for cable ducts of A,B & C type)	Rmtr	302+230	Refer KPTCL SR
150	ii)	Cable tray of 300mm width (suitable for cable ducts of A,B & C type)	Rmtr	221+155	Refer KPTCL SR
151	e)	Laying of control cables from equipments to control panels.	Rmtr	11	Refer KPTCL SR
	<b>31</b>	<b>Control Panels</b>			
152	a)	Erection of control panels, auxiliary panels, carrier cabinets etc., alignment and fixing properly to foundation base including movement from the point of unloading to the point of erection.	Per Panel	3797	Refer KPTCL SR
153	b)	Wiring & assisting in testing and commissioning of panels.	Per Panel	5933	Refer KPTCL SR
154	c)	<b>Test &amp; Commissioning:</b> <b>i) C &amp; R Panels Wiring &amp; Testing:</b>			
		Wiring: Identification, Ferruling, Crimping, termination of wires in C&R panels.	Per Panel	6509	Refer KPTCL SR

Sl No	Item No	Description	Unit	Labour charges Common SR 2018-19 in Rs.	Labour charges Common SR 2021-22 in Rs.
		Testing: Testing for insulation level, Testing of relays, control operations for closing tripping etc., interlocks Alarm, Annunciation and Indication Checks.	Per Panel	26035	Refer KPTCL SR
	<b>32</b>	<b>11 kV Switchgear</b>			
	a)	Erection, alignment and fixing to the foundation, indoor/outdoor 11kV switchgear Panel/unit including movement from the point of unloading to the point of erection.			
155	i)	11kV Indoor/out door switchgear	Per Panel	2286	<b>2629</b>
156	ii)	11kV Kiosk	Per Panel	1902	<b>2187</b>
	b)	<b>Wiring &amp; assisting in testing &amp; Commissioning</b>			
157	i)	11 kV indoor/ outdoor switchgear	Per Panel	758	<b>872</b>
158	ii)	11kV Kiosk	Per Panel	758	<b>872</b>
	c)	<b>Testing &amp; Commissioning:</b> <b>Wiring:</b> Identification of wires, Ferruling Crimping & Termination of wires for annunciation, etc., Testing of Relays, CTs, PTs, & Breaker for operation			
159	i)	For indoor/outdoor panel comprising of 2I+8F+1BC+1AP3	Per Set	72053	Refer KPTCL SR
160	ii)	For single 11kV panel indoor/outdoor type /Kiosk	Nos	14408	Refer KPTCL SR
161	iii)	For additional 11kV panel indoor	Nos	7204	Refer KPTCL SR
162	iv)	For each additional 11kV panel out door type/Kiosk	Nos	11010	Refer KPTCL SR
		<b>Note:</b> Assisting in testing & Commissioning for item 19,20 & 21 mean contractors should provide labourers for wiring & Commissioning by RT/MT/Firm Engineers.			
	<b>33</b>	<b>Busbar Formation</b>			
		Main bus/cross bus (all the three phases in a segment) of using Coyote-single/double conductors with fixing of insulator spacers, levelling of string conductors to the required height above the equipment, including providing jumps to interconnect different segments of the main bus.			
163	a)	Main Bus/Cross Bus as above using Single Lynx Conductor		6767	Refer KPTCL SR
	b)	Main Bus/Cross Bus as above using Single Coyote Conductor		6767	Refer KPTCL SR
165	<b>34</b>	Faradays Cage Formation as per specification:	Per Bay	279	Refer KPTCL SR
	<b>35</b>	<b>Groundmat</b>			
166	a)	Laying of M.S. Flats, welding, applying ACB paint to welded portion and covering with sodium bentonite clay	Rmtr	36	Refer KPTCL SR
167	b)	Supplying and laying of MS flats, of various sizes, welding and applying ACB paint to welded portion and covering with sodium bentonite clay, as per the drawing/standard specifications and consolidation.	Rmtr	50x6mm - 314 50x8mm - 335 75x6mm - 651 75x8mm - 581 75x12mm - 615	Refer KPTCL SR
168	c)	Same as above but without sodium bentonite clay	Rmtr	50x6mm - 155 50x8mm - 175 75x6mm - 422 75x8mm - 454 75x12mm - 493	Refer KPTCL SR
169	d)	Grounding of equipment with various sizes, G.I. Flat and connecting Equipment to the earthmat/ground pit. Each point of earthing with all formation works like bending, twisting, drilling of holes and connecting by welding (inclusive of all T&P and consumables) to the earthmat/ ground pit/ point of earth connection,all the materials supplied by the contractor.	Per point	50x6mm - 260 50x8mm - 296 75x6mm - 633 75x8mm - 656 75x12mm - 710	Refer KPTCL SR
170	e)	Providing 25mm dia M.S.rod 1.05 Mtr. Long earthmat spikes including heating, bending top 50mm over lap flattening and making spike edge at one end driving into the earth below the ground level and welding the rod with ground mat flat.	Each	299	Refer KPTCL SR

Sl No	Item No	Description	Unit	Labour charges Common SR 2018-19 in Rs.	Labour charges Common SR 2021-22 in Rs.
171	f)	Supplying & Providing 450 mm dia 450 mm height 1.5" to 2" thick hume pipe collar (non pressure type) for earth pits including all lead and lifts etc.,	Each	994	Refer KPTCL SR
	<b>36</b>	<b><u>Providing Deep Bore earthing</u></b>			
		"Sinking bore of 150mm clear dia using fast rig including fixing of 40mm dia MS rod, including jointing the pipes as per KPTCL standard and providing sodium bentonite treatment in the annular space, including transportation of rig and other supporting vehicles etc., complete, as per the directions of engineer in charge, including cost of MS rod & sodium bentonite".			
172	a)	Drilling 150mm dia bore	Rmtr	687	Refer KPTCL SR
173	b)	40 mm dia MS rod	Rmtr	638	Refer KPTCL SR
174	c)	Bentonite Clay	Kgs	15	Refer KPTCL SR
175	d)	Cost of GI flat for joining two rods by welding to obtain continuous length	Per joint	682	Refer KPTCL SR
	<b>37</b>	<b><u>Spreading of Jelly</u></b>			
		Supplying and spreading 100mm thick with 20/25mm jelly with all lead and lifts.			
176	i)	20/25 mm Jelly	Cmt	1038	Refer KPTCL SR
		<b>Note</b> : Only 20/25mm jelly shall be used.			
	<b>38</b>	<b><u>Station Yard Lightning</u></b>			
177	a)	Supplying and erection of fabricated supporting structures including foundation.	Per Set	As per Latest KPWD electrical SR applicable to respective areas.	Refer KPTCL SR
178	b)	Supplying and fixing of Sodium Vapour lamp fittings of 250 watts.	Per Fitting	As per Latest KPWD electrical SR applicable to respective areas.	Refer KPTCL SR
179	c)	Supplying and laying of 1.1KV, 6 Sqmm PVC cable or any other specified size, testing and commissioning of yard lights.	Rmtr	As per Latest KPWD electrical SR applicable to respective areas.	Refer KPTCL SR
180	d)	Erection of RCC poles with stringing of O.H. conductor/Laying of cable for yard lights.		Furnished in 11kV Works	Furnished in 11kV Works
	<b>39</b>	<b><u>Painting of structures</u></b>			
181	a)	Supplying and painting of two coats of good quality Red Oxide primer after cleaning and scrapping the surface.	Sq Mtr	23+51	Refer KPTCL SR
182	b)	As above with 2 coats of good quality Aluminium paint after 2 coats of good quality Red Oxide primer.	Sq Mtr	50+77	Refer KPTCL SR
183	c)	Supplying and painting two coats of aluminium paint after cleaning and scrapping the surface without applying Red Oxide primer	Sq Mtr	24+44	Refer KPTCL SR
184	d)	As per (b) but with synthetic enamel paint	Sq Mtr	60+85	Refer KPTCL SR
185	e)	Supplying and painting two coats of Synthetic enamel paint after cleaning and scrapping the surface without applying red oxide primer.	Sq Mtr	35+41	Refer KPTCL SR
	<b>40</b>	<b><u>Battery Set and charger</u></b>			
	a)	Installing, assembling, filling of acid, wiring, assisting, test-charging and discharging Battery set.			
186	i)	110 Volts	Set	8632	Refer KPTCL SR
187	ii)	48/24 Volts	Set	3456	Refer KPTCL SR
	b)	Erection of Battery Charger and wiring			
188	i)	110 Volts	Set	1379	Refer KPTCL SR

Sl No	Item No	Description	Unit	Labour charges Common SR 2018-19 in Rs.	Labour charges Common SR 2021-22 in Rs.
189	ii)	48/24 Volts	Set	1379	Refer KPTCL SR
190	c)	<b>Testing &amp; Commissioning of Battery Charger:</b> <b>Wiring:</b> Identification, Ferruling, Crimping & connecting i) AC Supply cable upto 2 sources ii) Load cables, connection at charger end upto 10 load points			
191		<b>Testing:</b> i) AC supply Voltage Phase Sequence. ii) Testing of Output DC Voltages in Boost/Float/Trickle/Variations as per the order/requirement . iii) Testing for Ripple Factor. <b>Commissioning:</b> i) Fixing of Boost Voltage level ii) Fixing of Float Voltage level iii) Fixing of Trickle Voltage level iv) Testing of alarm, indication and load ckts, Auto /Manual change overs etc. v) Full load test in Boost & Trickle modes.			
192	i)	110V DC: (1 set for 33kV Stations)	Per Set	17042	Refer KPTCL SR
	<b>41</b>	<b>Fencing :</b>			
		<b>Colony and Station yard Boundary fencing including erection of supports</b>			
193	a)	Security fencing using 8SWG chainlink/50mm Mesh		As per KPWD SR applicable to respective area	Refer KPTCL SR
194	b)	Barbed wire fencing		As per KPWD SR applicable to respective area	Refer KPTCL SR
	<b>42</b>	<b>PLCC Equipments</b>			
195	a)	Erection of mounting structures for coupling capacitors	Set	5403	Refer KPTCL SR
196	b)	Erection of Coupling capacitors/wave traps/LMU.	Set	1846	Refer KPTCL SR
197	c)	Wiring , testing and commissioning	Set	486	Refer KPTCL SR
	<b>43</b>	<b>Yard Levelling</b>			
198		Yard Levelling and filling up of soil and consolidation.	Cmt	As per KPWD SR applicable to respective area	Refer KPTCL SR
	<b>44</b>	<b>Watch and Ward</b>			
201		Emoluments for watch and ward including pay and DA for 8 hours duty	Per shift	304	Refer KPTCL SR
	<b>45</b>	<b>Transportation:</b>			
		<b>a) Transportation of Transformer, CTs PTs, Breakers, C &amp; R Panels, 11kV Switchgears and EHT LA's only</b>			
		<b>1. Using 10 MT Lorry</b>			
202		Upto 250kms	km	40	Refer KPTCL SR
203		greater than 250kms	km	35	Refer KPTCL SR
		<b>2. Using 10 MT Truck &amp; Trailor</b>			
204		Upto 250kms	km	70	Refer KPTCL SR
205		greater than 250kms	km	55	Refer KPTCL SR
		<b>3. Using 11MT to 20MT Truck &amp; Trailor</b>			
206		Upto 250kms	km	90	Refer KPTCL SR
207		greater than 250kms	km	70	Refer KPTCL SR
		<b>4. Using 21 MT to 40 MT Truck &amp; Trailor</b>			
208		Upto 250kms	km	135	Refer KPTCL SR
209		greater than 250kms	km	110	Refer KPTCL SR
		<b>5. Using 41 MT to 80 MT Truck &amp; Trailor</b>			
210		Upto 250kms	km	575	Refer KPTCL SR
211		greater than 250kms	km	500	Refer KPTCL SR
		<b>6. Using 81 MT to 120 MT Truck &amp; Trailor</b>			

Sl No	Item No	Description	Unit	Labour charges Common SR 2018-19 in Rs.	Labour charges Common SR 2021-22 in Rs.
212		Upto 250kms	km	1400	Refer KPTCL SR
213		greater than 250kms	km	1100	Refer KPTCL SR
		<b>7. Crane hiring charges for substation works</b>			
214		1. Up to 5 hours	hour	1500	Refer KPTCL SR
215		2. Greater than 5 hours	hour	1200	Refer KPTCL SR
		<b>NOTE :</b> 1. The rates are for up and down journey and for a minimum distance of 300kms. 2. Detention charges are Rs. 5000.00 per day for vehicles upto 40MT trailer and Rs. 15000.00 for vehicles greater than 40Mt trailer.			
	<b>46</b>	<b>Loading and Unloading</b>			
216		a) Loading of Power Trs, CT's, PT's Breakers, C&R Panels, 11KV Switchgears, wavetrap, coupling capacitors, HT UG Cables, Insulators, ACSR Conductor, Ground Conductors, etc.,	MT	2006	Refer KPTCL SR
217		b) Unloading of power Transformers, CT's, PT's Breakers, C&R Panels, 11 KV Switchgears, Wavetrap, coupling capacitors, HT UG Cables, Insulators, ACSR conductor, Ground conductors, etc.,	MT	2006	Refer KPTCL SR
218		c) Loading of other materials like structural steel, building materials etc.,	MT	355	Refer KPTCL SR
219		d) Unloading of other materials like structural steel, building materials etc.,	MT	355	Refer KPTCL SR
	<b>47</b>	<b>Benching, Revetment and Pitching</b>			
220		Providing granite rough stone 30 to 50 cms thick dry packing of revetments and pitching side slopes of quadrant including providing the walls, jelly packing, 0.15 cms thick and wedging etc., Complete including cost of conveyance of all materials.	Cmt	For substation works as per KPWD SR and for Transmission line works Add 25% extra	Refer KPTCL SR
	<b>48</b>	<b>Labour for 33KV lines using 9/9.5 Mtrs Long RCC Poles</b>			
221		a) Erection of 9/9.5 Mtrs RCC Poles 300 Kg working load, in the excavated pit as per the approved drawing specification including the cost of excavation, backfilling(Concreting charges extra)	Nos	1511	Refer KPTCL SR
222		b) Erection of DP structure including fixing of braces insulators etc., as per the approved drawings and specifications including the cost of excavation, backfilling (Concreting charges extra).	Set	3575	Refer KPTCL SR
223		c) Fixing of V-Shape cross arms, single top supports and insulators.	Set	106	Refer KPTCL SR
224		d) Fixing of spiral earth electrodes	Nos	39	Refer KPTCL SR
225		e) Road/P&T Guarding	Set	1044	Refer KPTCL SR
226		f) Stringing Rabbit conductor, fixing disc insulator to cross arms etc.,	KM	2869	Refer KPTCL SR
227		g) Stringing Coyote conductor, fixing disc insulator to cross arms etc.,	KM	4434	Refer KPTCL SR
228		h) Supplying and fixing of AC devices as per specification	Rmtr	As provisioned in 11 kV works	Refer KPTCL SR
	<b>49</b>	<b>Dismantling</b>			
229		i) Dismantling of Power Transformer		Same rate as that of erection of Power Transformer	Refer KPTCL SR
230		ii) Dismantling charges for concrete with steel reinforcement	Cmt	879	Refer KPTCL SR
231		iii) Dismantling of concrete only	Cmt	429	Refer KPTCL SR
232		iv) Dismantling charges in all other cases		75% of erection charges in general	Refer KPTCL SR