PART - II
SCHEDULE OF RATES FOR LABOUR OF MAJOR WORKS

Sl. No.			Description	Unit	Amount in Rs. exclusive of GST				
					400 kV	220 kV	110 kV	66 kV	33 kV
1	A		**Transmission Line Surveying using Modern Survey Techniques**						
		i	Preliminary survey for identification of 3 alternative routes using low resolution satellite imageries (1:25,000 PAN + LISS merged) of NRSA Google images and Survey of India maps and finalization of most economical, optimum route showing the topographical and other features upto ___ km on either side and indicating final selected route alignment and digital modeling in undulated hilly terrain along the proposed route using contour data from topographical map and submission of preliminary survey reports for approval as detailed in technical specifications with usage of NRSA imageries.						
			Plain terrain	km	4700	4465	4240	4240	_
			Hilly terrain	km	5170	4912	4664	4664	_
		ii	Preliminary survey for identification of 3 alternative routes using Google images and Survey of India maps and finalization of most economical, optimum route showing the topographical and other features upto ___km on either side and indicating final selected route alignment and digital modeling in undulated hilly terrain along the proposed route using contour data from topographical map and submission of preliminary survey reports for approval as detailed in technical specifications without usage of NRSA imageries.						
			Plain terrain	km	3415	3280	3120	3120	_
			Hilly terrain	km	3757	3608	3432	3432	_
		iii	Detailed survey along the approved route alignment approved after conducting the preliminary survey by using modern survey equipments like GPS/DGPS/Total stations/Digital thedolites including profiling, tower spotting and optimization of locations by using computer aided techniques like ALTM as well as other activities as detailed in the scope of work using PLS-CADD software and submission of draft report for approval.						
			a) Drawing the route profile including geographical features like Nalas, Rivers, Gardens, P&T lines, Railway crossings etc. b) Leveling of the profile with reference to Survey of India benchmarks (MSL) c) Tower Schedule d) Line Schedule e) Burgie details by using Modren Survey techniques and providing GPS, Co-ordinates at each anchor points for identification of anchor locations including permanent marks like poles, telephone lines, buildings etc.						

Sl. No.			Description	Unit	Amount in Rs. exclusive of GST				
					400 kV	220 kV	110 kV	66 kV	33 kV
			Plain terrain	km	7960	7560	7180	7180	_
			Hilly terrain	km	9552	9072	8616	8616	_
		iv	Providing and Fixing marking stones of size 200 x 200 x 1000 mm, with approved marks including painting above the ground level and Yellow Lettering and 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 and nala crossing for all on both the sides.	Per Stone	427				_
		v	Conducting soil resistivity test along the selected route and submitting the test results in the form of draft report as detailed in technical specifications	Per Test	866				_
		vi	Making 150 mm 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, collection of water samples, observation such as ground water etc., Collection of undisturbed soil samples and at change of strata, transporation 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 Engineer-in-charge of work. The scope also includes the submisison of final report containing the bore log details with classification of soil for the purpose of providing foundation along with PS co-ordinates of each boreholes	Per m	2500				_
		vii	Digitised Contouring at undulated/hilly tower locations as detailed in technical specifications for assessing the quantum of benching and revetment required and submission of draft report on the work done (as per number of points of levels taken). * Note: The unit per location mentioned in the approved bill of quantities may be changed to per No. as the rates are available in KPTCL SR for taking spot levels.	No. *	31				_
		viii	Preparation of Schedules						
		a	PTCC Proposal : Containing PTCC questionaire, topo sheet extracts with marking of the proposed line, S.R. Report, tower sketch, station single line diagram etc., (30 Copies/Set)	Per set	1031				_
		b	Railway Crossing proposal with drawing are inclusive of graph sheets and other stationery materials, labour etc., (10 Sets per crossing)	Per Crossing	1031				_

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					400 kV	220 kV	110 kV	66 kV	33 kV
		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	739				_
		d	Forest proposals : Inclusive of all works like fixing of stones at every 20 metres 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 metre height from GL, approximate height of the tree and forest clearance proposals etc., complete (10 sets). The work shall be carried out as per requirement and as per instruction of Engineer-in-charge and as per latest circular of Forest Department.	Per km	4811				-
		ix	Preparation of Detailed land schedule along the Right of Way. Plotting of line route on the digitised revenue village maps to show details of land along the line corridor with survey no. and computation of estimate of land compensation for line corridor land and tower foot area land as per prevailing guidance value notified by GoK.	km	600	570	540	540	
		x	Submission of Detailed Consolidated report on the surveying work done appending all approved draft reports including all relevant information collected during survey, calibration certificates of the instruments used for the work, photos taken at site and submitting soft copies of all documents and reports in 6 sets. The detailed report shall contain following approved draft reports. Preliminary report/ Detailed Survey Report/ Soil Resistivity Report/ Soil Classification report with location wise/ Tree Schedule/ Line Schedule/ Land Schedule/ Burgies details/ Digitised contours/ Digitised village map geo referenced and super imposed on the line corridor	Job	10000	8000	5000	5000	-
1	**B**		**Transmission Line Survey using conventional method :**						
	i		Reconnoitary Survey-cum-walk over Survey along with K.P.T.C. Ltd., 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).						
		a	Hilly terrain	km	1781				
		b	Plain terrain	km	1687				

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					400 kV	220 kV	110 kV	66 kV	33 kV
	ii		Detailed Survey, fixing anchor points and taking levels at 20 metres 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-co-ordinates of each location with survey no. of the lands through which the line is passing duly covering the corridor proposed to be cleared.					
		a	Hilly terrain	km	8601				
		b	Plain terrain	km	5748				
			Remarks:- i) In case of detailed survey of existing line for preparation of schedules to facilitate placing of proposals before PTCC, 50% of the above costs are to be adopted.						
	iii		Fixing marking stones with approved marks including painting above the ground level and Yellow Lettering and 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 and nala crossing for all on both the sides.	Per Stone	427			
	iv		Burgie details for identification for all Anchor towers with existing permanent marks like poles, telephone lines, buildings, etc.,	Per Anchor Tower	385				
	v		Excavation for soil classification: a) Excavation of soil 1.2 m x 1.2 m up to a depth of 3 metres or up to hard rock is reached which ever is less (Applicable for soil classification purpose for 400 kV & 220 kV lines only) b) Excavation of soil 1.2 m x 1.2 m up to depth of 2.5 metres or up to hard rock is reached which ever is less (Applicable to 110 kV & 66 kV lines). The excavation of trial pits shall be retricted to one pit for every km and part there off.	cu m (cubic metre)	Rates for different soils encountered as per actual soil condition applicable for Transmission Line (Ref-item 3A)				
	vi		Conducting soil resistivity tests	Per Test	866				
	vii		Clearing of bushes, tree branches of trees, crops and shrubs wherever encountered for detailed survey to enroute the corridor width of 3 metres (including viewing for fixing anchor towers etc.,)						
		a	Hilly terrain	Per km	1281				
		b	Plain terrain	Per km	854				
	viii	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	260				

Sl. No.			Description	Unit	Amount in Rs. exclusive of GST				
					400 kV	220 kV	110 kV	66 kV	33 kV
		b	Drawing the route profile on graph sheet including geographic features like nala's, rivers, gardens, P&T lines, railway crossings etc., inclusive of all stationeries (Normal requirement is 5 Sets).	Per km	260				
	ix		Preparation of Schedules:						
		a	PTCC Proposal : Containing PTCC questionaire, topo sheet extracts with marking of the proposed line, S.R. Report, tower sketch, station single line diagram etc., (30 Copies/Set)	Per set	1031				
		b	Railway Crossing proposal with drawing are inclusive of graph sheets and other stationery materials, labour etc., (10 Sets)	Per Crossing	1031				
		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	739				
		d	Forest proposals : Inclusive of all works like fixing of stones at every 20 metres 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 metre height from GL, approximate height of the tree and forest clearance proposals etc., complete (10 sets) Note: This applies to forest area only.	Per km	4811				
1	**C**		**Check Survey to be conducted by the construction agency**						
		i	Conducting detailed Survery along with approved route duly following the route alignment, marking stones and submission of detailed line shcedule, tower schedule and land schedule for the transmission line construction.						
		a	Hilly terrain	Per km	4290				
		b	Plain terrain	Per km	2864				
		ii	Preparation of Revenue Survey sketch of the land along with line corridor for the purpose of computing compensation for corridor land and tower foot area land, through licensed GoK approved Surveyors and submission of Survey sketch, extent of land falling inthe line corridor, name of the land owner and RTC etc., in the form of land schedule duly certified by concerned Revenue Authorities.						
		a	Rural Area	Per Survey Sketch	1416				
		b	Urban Area	Per Survey Sketch	1700				
2	**A**		**Taking block levels for Sub-stations:**						

Sl. No.			Description	Unit	Amount in Rs. exclusive of GST				
					400 kV	220 kV	110 kV	66 kV	33 kV
		a	Running Peripheral Theodolite traverse along periphery and co-ordinating and heightening of all corners/turning points, establishing permanent co-ordinate axis formation of Grids at 50 metre intervals for northing and easting with reference to already established permanent co-ordinate axis levels at 50 metre Grid intersection for preparing plot plan of the entire area with contours. Including existing structure location.	Hectare	1427			
		b	Establishing datum level and bench marks at every 100 m / 50 m intervals both longitudinal and laterally and all corners/turning points with stone pillars of size not less than 0.2 m x 2 m x 1.0 m buried on the ground and exposed on top engraved for painting RL, and co-ordinates of that point.	No.	1427				
		c	Taking level at 5m / suitable grid interval in the Sub-station area for plotting block levels, contour map.	No.	31				
		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	14266				
		e	Furnishing cutting and filling quantities using appropriate software for earth work calculation.	Per Project	4280				
		f	Super imposing GA drawings on contour maps in Co-ordination with KPTCL Engineers and supply of 12 sets of blue print drawings etc., complete.	Per Project	11413				
2	**B**		**Geo Technical Investigations:**						
	a		Making 150 mm 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, collection of water samples, observation such as ground water etc., Collection of undisturbed soil samples at every 2.0 m / 3.0 m interval and at change of strata, transporation 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 6.0 metre below natural ground level or refusal strata.	Per m	2135				
	b		Conducting various laboratory tests on soil samples at approved laboratory including preparation of soil samples to determination of soil, all complete as per specification. Note: Laboratory identified shall be approved by KPTCL not below the rank of EE (Civil)						
		i	Bulk density and moisture content	Each	854				
		ii	Sieve analysis	Each	854				
		iii	Hydrometer Analysis	Each	854				
		iv	Liquid limit and plastic limit	Each	854				
		v	Shrinkage limits	Each	1000				
		vi	Specific gravity	Each	1000				

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					400 kV	220 kV	110 kV	66 kV	33 kV
		vii	Standard proctor density test	Each	1000				
		viii	Swell pressure	Each	1145				
		ix	Free swell index	Each	1145				
		x	Uncombined Compressive strength	Each	1145				
		xi	Triaxial shear test	Each	1145				
		xii	One dimensional consolidation test	Each	1145				
		xiii	California bearing ratio	Each	1145				
	c		Submitting final report in 6 copies including all field records and laboratory test results, graphs and recommendations etc., complete as per specifications. Note: 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 admisible for mobilization & Demobilization	Per Job	17120				
3			**Excavation for Station structure:**						
	A		Excavation of pits as per specifications for lattice type of Station structures, Tr. Plinth, control panels, mounting structures for breakers, CTs, PTs Isolators, LAs 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, removing slush add 20% of the rate of the respective rate on account of slow progress of work under these conditions (The extra percentage indicated here shall be as indicated in the relevant KPWD SR)				
		i	Normal Soil	cu m	Latest KPWD SR Rate for hard soil				
		ii	B.C. Soil	cu m	Latest KPWD SR Rate for ordinary soil				
		iii	Partially Submerged soil	cu m	Latest KPWD SR Rate for ordinary soil				
		iv	Fully submerged soil	cu m	Latest KPWD SR Rate for ordinary soil				
		v	Wet black cotton soil	cu m	Latest KPWD SR Rate for ordinary soil				
		vi	Dry fissured/Ordinary rock	cu m	Rate for ordinary rock (without blasting) of Latest KPWD SR				
		vii	Latterite soil	cu m	Rate for ordinary rock (without blasting) of Latest KPWD SR				
		viii	Hard rock with blasting/Hard latterite	cu m	Rate for hard rock (with blasting) of Latest KPWD SR				
			Note 1 : For Excavation purposes measurement shall be as per actuals.						
			Note 2 : For Foundation purposes predominant soil shall be considered.						
	B		**Excavation (For Tr. Line Tower)**						
		i	Normal Soil	cu m	(Rates as per item 3-A excluding Area weightage + 50 % extra)				
		ii	B.C. Soil	cu m					
		iii	Partially Submerged soil	cu m					
		iv	Fully submerged soil	cu m					
		v	Wet black cotton soil	cu m					
		vi	Dry fissured/Ordinary rock	cu m					
		vii	Latterite soil	cu m					
		viii	Hard rock with blasting/Hard latterite	cu m					
	C		**Back Filling :**						
		i	Back filling with excavated earth available near the tower and consolidation layer by layer of 150 mm depth with adequate quantity of water.	cu m	Rates as per Latest KPWD SR + 10% extra				
		ii	Supplying and back filling with external hard murrum soil with proper consolidation including lead and lift.	cu m	Rates as per Latest KPWD SR + 10% extra				
			Note: This item is applicable only when Black cotton soil, Wet black cotton soil, Dry fissured rock, Ordinary rock, Hard rock are encountered.						

Sl. No.			Description	Unit	Amount in Rs. exclusive of GST				
					400 kV	220 kV	110 kV	66 kV	33 kV
4			**Concreting and curing (For Both Transmission lines and Station structures)**						
	A		Concreting and 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, CTs, PTs, Isolators, LAs, 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.				
		i	1:4:8 Concrete (M-7.5)	cu m	Rate under plain concrete for foundation of Latest KPWD SR				
		ii	1:3:6 Concrete (M-10)	cu m	Rates under basement of Latest				
		iii	1:2:4 Concrete (M-15)	cu m	Rate under raft foundation of Latest KPWD SR				
		iv	1:1.5:3 Concrete (M-20)	cu m	Rate under raft foundation of Latest KPWD SR				
	B		Concreting and curing as per specifications including the cost of materials, T&P materials and labour charges with all lead and lift for Transmission line Towers.	cu m	For arriving at the rates for concrete items for Transmission lines, add 50% weightage to the basic rates of different propotions of concrete proposed above.				
			Note : a) Extra as indicated in the relevant KPWD SR may be allowed for providing concrete in watery situations including cost of bailing out water and removing slush. b) Only machine mixing for concreting is to be used. c) Jelly to be used is 20 mm and down size for 1:1.5:3, 1:2:4 & 1:3:6 concrete and 40 mm and down size for CC 1:4:8.						
	C		Providing and fabricating TMT steel reinforcement including straightening 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)	kg	For Sub-station works rate as per KPWD SR and for Transmission line works add 10% extra				
5			**Towers**						
		a	Sorting of tower parts made of fabricated angle iron.	MT	323				
		b	Setting up of stubs templates and aligning dismantling and transportation of templates from one location to another location	Per Locn	656	656	569	502	
		c	Assembling and erection of towers including tightening of bolts and nuts including loading, unloading at store and site (Including the weight of stubs).	MT	2356				
		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 height of bottom cross arm, as per the directions of the Field Engineer).	Per Bolt	15				
		e	Welding of bolts and nuts	Per Bolt	15				
			Note : For tower erections requiring shutdown 25% above S.R. for item 5(c) to 5(e) only are to be adopted.						
6			**Supplying and fixing A.C. devices :**						

Sl. No.			Description	Unit	Amount in Rs. exclusive of GST				
					400 kV	220 kV	110 kV	66 kV	33 kV
		a	Supplying and fixing G.I. Angle iron 45 x 45 x 5 mm (1 m length) with cleats, bolt & nuts as per specification and fixing above 0.5 m length each at inner and outer surface of the tower to facilitate running of barbed wire.	Per set	2781				
		b	Supplying and fixing barbed wire as per specification	Rmtr	51				
7			**Fixing of Boards**						
		a	Fixing Danger Board	No.	54				
		b	Fixing Number Plate	No.	54				
		c	Fixing Phase Plate	Set (3 Nos.)	161				
		d	Fixing Circuit plate	No.	54				
8			**Stringing of Conductor without allowing the conductor to touch the ground and without damaging the conductor.**						
	A		Paving out 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, hoisting 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 for 1 route km of single conductor).		400 kV line work labour charges are indicated in material portion				
		i	For Hilly terrain	km		27541	13771	12512 with coyote	
		ii	For Plain terrain	km		13333	5928	5928 with coyote ACSR	
	B		Stringing of ground conductor as above						
		i	For Hilly terrain	km		9184	6879	6123	
		ii	For Plain terrain	km		6879	5501	4586	
			Note: Conductors normally used are: i) 220 kV - Drake and AAAC Moose ii) 110 kV - Lynx and Drake iii) 66 kV - Coyote and Drake						
	C		**SPECIAL CONDITIONS**		% over the basic labour rates				
	I		**TRANSMISSION LINE WORKS**						
		1	i) River crossing with different type towers ii) Stringing of railway crossings iii) Emergency works such as break down works		100% extra				
		2	2nd Circuit Stringing with 1st Circuit under live condition		75% extra				
		3	Works under shutdown. This is applicable under the following conditions only. i) Pre-programmed for interruption of line. ii) Pre-arranged replacement/rectification of line materials.		50% extra				
		4	Dismantling works		75% of normal rate				
		5	National and State High way crossings		50% extra				
	II		**SUB-STATIONS AND OTHER WORKS:**						

Sl. No.			Description	Unit	Amount in Rs. exclusive of GST				
					400 kV	220 kV	110 kV	66 kV	33 kV
		1	Works under shutdown. This is applicable under the following conditions only. a. Pre-programmed for interruption of equipment. b. Pre-programmed replacement of bus in Sub-station. c. Pre-arranged replacement/rectification of the equipment.		50% extra				
		2	Dismantling works		75% normal rates				
		3	Emergency works such as break down works. This will not be applicable for pre-arranged shut down works.		100% extra				
		4	Earthmat work inside the existing Sub-stations shall be treated as a pre-arranged shut down work.		50% extra				
			However, if more than one special condition such as emergency, shut down, 2nd circuit stringing with 1st circuit live etc., are applicable for a particular work item or situation, then only one condition with maximum extra rate out of applicable special charges can be allowed. Applying more than one special condition for any item is to be dispensed.						
9	**I**		**These Rates are applicable only when total Length of the entire Line is less than 3 spans.**						
	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 metres (rate for spans of single conductor).						
	i		For Hilly terrain						
		a	Anchoring single span upto 320 metres	1 Span		15332	7648	6550 with coyote ACSR	
		b	Anchoring 2 span interval upto 640 metres with 1 tangent tower only	2 Spans		19113	9538	8122 with coyote ACSR	
		c	Anchoring 3 span interval up to 960 metres with two tangent towers only	3 Spans		22992	11490	9526 with Coyote ACSR	
	ii		For Plain terrain						
		a	Anchoring single span up to 320 metres	1 Span		11795	5342	4916 with coyote ACSR	
		b	Anchoring 2 span interval upto 640 metres with 1 tangent tower only	2 Spans		14734	6855	6294 with coyote ACSR	
		c	Anchoring 3 span interval upto 960 metres with two tangent towers only	3 Spans		17674	8257	7050 with Coyote ACSR	
	B		Stringing of ground conductor as above						
	i		For Hilly terrain						
		a	Anchoring single span upto 320 metres	1 Span		5074	3806	3305	
		b	Anchoring 2 span interval upto 640 metres with 1 tangent tower only	2 Spans		6355	4781	3940	
		c	Anchoring 3 Span interval upto 960 metres with two tangent towers only	3 Spans		7648	5745	4684	
	ii		For Plain terrain						
		a	Anchoring single span upto 320 metres	1 Span		3842	3074	2488	
		b	Anchoring 2 span interval upto 640 metres with 1 tangent tower only	2 Spans		4806	3806	3025	
		c	Anchoring 3 span interval upto 960 metres with two tangent towers only	3 Spans		5781	4611	3562	

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					400 kV	220 kV	110 kV	66 kV	33 kV
			Note: 1) Conductors normally used are: i) 400 kV - Quad Moose and Bersimis ii) 220 kV - Drake and AAAC Moose iii) 110 kV - Lynx and Drake iv) 66 kV - Coyote and Drake 2) For Shut down works 50% more above the normal rates of respective works (This is applicable to shut down of 33 kV and above lines only. 11 kV & LT line shut down works not included).						
	II		**Rates for Short span stringing in Normal length of the line of more than 3 spans comprising of short spans.**						
	A		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 metres (rate for spans of single conductor).						
	i		For Hilly terrain						
		a	Anchoring single span upto 320 metres	1 Span		2305	1147	975 with coyote ACSR	
		b	Anchoring 2 span interval upto 640 metres with 1 tangent tower only	2 Spans		3818	1903	1621 with Coyote ACSR	
		c	Anchoring 3 Span interval up to 960 metres with two tangent towers only	3 Spans		5745	2879	2378 with Coyote ACSR	
	ii		For Plain terrain						
		a	Anchoring single span upto 320 metres	1 Span		1769	805	733 with Coyote ACSR	
		b	Anchoring 2 span interval upto 640 metres with 1 tangent tower only	2 Spans		2952	1366	1196 with Coyote ACSR	
		c	Anchoring 3 Span interval upto 960 metres with two tangent towers only	3 Spans		4415	2061	1769 with Coyote ACSR	
	B		Stringing of ground conductor as above						
	i		For Hilly terrain						
		a	Anchoring Single span upto 320 metres	1 Span		756	573	500	
		b	Anchoring 2 Span interval upto 640 metres with 1 tangent tower only	2 Spans		1269	951	793	
		c	Anchoring 3 span interval upto 960 metres with two tangent towers only	3 Spans		1915	1439	1171	
	ii		For Plain terrain						
		a	Anchoring single span upto 320 metres	1 Span		573	463	378	
		b	Anchoring 2 span interval upto 640 metres with 1 tangent tower only	2 Spans		964	964	610	
		c	Anchoring 3 span interval upto 960 metres with two tangent towers only	3 Spans		1634	1159	890	
	C	i	Replacement of Insulators for Anchor Towers	Per Insulator	168				
		ii	Replacement of Insulators for Suspension Towers	Per Insulator	90				
		iii	Replacement of Insulators for Anchor Towers	Per Insulator		116	116	116	
		iv	Replacement of Insulators for Suspension Towers	Per Insulator		63	63	63	
10	**A**		**Clearing of bushes, branches of tree & Crops for erection of tower & Stringing of line for full corridor width.**						
		a	In thin Jungle	Per km	3671				
		b	In thick Jungle	Per km	5513				

Sl. No.			Description	Unit	Amount in Rs. exclusive of GST				
					400 kV	220 kV	110 kV	66 kV	33 kV
		c	Removing grass/vegetation, bushes in Station yard/premises including disposal of the same.	Sq m	12				
	B	a	Cutting of trees of different girths including cutting of trunks, branches and removal of stumps stacking of serviceable materials earth filling in the depressions/pit, labour charges complete as per specifications	No.	As per applicable KPWD SR				
		b	Transportation of wood to the desired destination as per KPTCL directions	cu m	Rate as per forest SR				
		c	Clearing and grubbing land including uprooting rank vegetation, grass, bush, shrubs, saplings and trees of girth up to 300 mm by manual means in area of light jungle, removal of stumps, disposal of unserviceable materials, stacking of serviceable materials, labour charges complete as per specifications.	Sq m	As per applicable KPWD SR				
11			**Grounding of Towers/Equipments**		Material + Labour				
		a	Grounding of towers including cost of 40 mm dia 2.5 mm thick, class 'C' G.I. Pipe of 3 metres length as per specifications, with 50 X 6 mm GI Flats 3 metre long, salt charcoal, including excavation charges.	Set	3525+1425				
		b	Grounding of towers/Equipments excluding the cost of G.I. Pipe/C.I. Pipe as per specifications with 50 X 6 mm G.I. Flat 3 metres Long (to be supplied departmentally). But salt & Charcoal to be supplied by contractor. The rates include excavation charges.	Set	924+975				
		c	Grounding of equipments by providing cast iron pipe of 100 mm ID 13 mm thickness, 2.75 metres long with 2 part clamp out of G.I. Flat 50 X 6 mm continuously welded alround the pipe using cast iron welding electrodes as per drawing including the cost of excavation (All materials to be supplied by the contractor)	Set	8632+2356				
			Note : All the leads from earthmat & equipment should be connected to earth electrode through the GI Flat 50 x 6 mm of suitable length and welded as per specifications.						
12			**Supplying and fixing of counter poise earthing with G.I. Stranded wire where hard rock is encountered as per specifications (including excavation charges).**	Per Loc	2510+2244				
13			**Station Structures**						
		a	Erection, assembly and alignment of Station structure as per the directions of site Engineer.	MT	2715				
		b	Erection, alignment & assembly of fabricated steel lattice structure, pedestal structures & Mounting structures, for G.O.S., CTs, PTs, LAs etc.,	MT	2032				
14			**Erection of Transformers**						
	a		Moving the Transformer to the plinth. Maximum allowable distance is 50 metres (More than 50 metres approval of D(T) has to be obtained).	Per MT/m	48				

Sl. No.			Description	Unit	Amount in Rs. exclusive of GST				
					400 kV	220 kV	110 kV	66 kV	33 kV
	b	i	Assembly of Transformer parts like bushings, radiators, filling oil into Tr. etc., for the total weight of the Tr.	MT			975		
		ii	Filling oil to the Power Tr. Conservator and radiator (for maintenance purpose only).						
			For 5 MVA to 20 MVA Tr.	Ltr			2.44		
			For 50 MVA & above with vaccum	Ltr			2.44		
		iii	Filtration of oil using filter set of the contractor, to bring the insulation value to I.E. Specifications.	Ltr			4.88		
		iv	Filtering Oil as above but with the filter set supplied by the Board.	Ltr			2.44		
	c		Wiring of Transformer marshalling box, bucholtz relay, fixing Thermometer, OLTC upto control panel and assisting in testing and commissioning by RT/MT/Firm Engineers						
		i	5 MVA to 6.3/8 MVA Tr.	L/s			5513		
		ii	10 MVA to 20 MVA Tr.	L/s			11026		
		iii	Above 20 MVA Tr.	L/s			18381		
15			**Fabrication of Transformer railing and embedding in Transformer plinth (Rails to be supplied by the Corporation).**	L/s			1098		
16			**Fixing of H.T. fuse units & wiring**	Per Set			1281		
17			**Testing & Commissioning of Power Transformers**			100/ 150 MVA	12.5/20/ 31.5 MVA	8/10 MVA	5/6.3 MVA
		a	Inspection of wires and Ferrules. Inspection of wiring of Protective Devices, Cooling fans, Oil flow Pumps, OLTC, RTCC	Lump Sum for Each		13862	11551	7701	6931
		b	Testing: 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 & REFR protection			55449	46205	30805	27722
18			**Erection of Breakers**						
		a	Breaker 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		16018	12939	9314	6208
		b	Assisting in Testing and Commissioning	Set		3825	3122	2342	1561
		c	Testing & Commissioning: Wiring: Identification, ferruling, crimping and termination of wires in Breaker & Wiring up to control panel/Relay panels.	Set		8985	6931	6931	6931
			Testing: Test for insulation level, gas leakage, Testing for travel time, Trip and close timings. Local Trip close test, Remote trip and close test, Tripping through relays, operation of interlocks etc.,	Set		35940	27722	27722	27722
19			**Erection of CTs and PTs**						

Sl. No.			Description	Unit	Amount in Rs. exclusive of GST				
					400 kV	220 kV	110 kV	66 kV	33 kV
		a	Erection of CTs and PTs and wiring including movement from the point of unloading to the point of erection.	Set (3 Nos.)		8026	6432	3217	1613
		b	Assisting in Testing and Commissioning	Set (3 Nos.)		1171	976	781	585
		c	Testing & Commissioning of Current Transformers:						
			Wiring: Inspection of wiring, Ferruling, Crimping of lugs, Connections up to marshalling box & Control panel.	Set (3 Nos.)		4621	2310	2310	2310
			Testing and Commissioning of CTs: Insulation, Polarity, Ratio, Excitation.	Set (3 Nos.)		18483	9239	9239	9239
		d	Testing & Commissioning of Potential Transformers:			0	0	0	0
			Wiring: Inspection of wiring,Ferruling, Crimping of lugs, Connections up to marshalling box & Control panel.	Set (3 Nos.)		2310	2310	2310	2310
			Testing and Commissioning of PTs: Insulation, Polarity, Ratio, Excitation.	Set (3 Nos.)		9239	9239	9239	9239
20			**Erection, Testing & Commissioning of NCTs**						
		a	Erection of NCTs including movement from the point of unloading to the point of erection with grounding connections	Set		2474	2041	975	467
		b	Assisting in Testing and Commissioning	Set		134	134	134	73
21			**Erection of Isolators**						
	a		Assembly, Erection, alignment and wiring including movement from the point of unloading to the point of erection.						
		i	Upright	Set		8014	6430	3160	975
		ii	Under hung	Set		9547	8026	4783	
	b		Assisting in Testing and Commissioning						
		i	Upright	Set		976	781	390	122
		ii	Under hung	Set		1171	976	585	0
			Note: 1) Assisting in testing and commissioning for item nos. 17 to 19 means contractors should provide labourers for testing and commissioning by RT/MT/Firm Engineers. 2) Testing & Commissioning in item 17 & 20 means the testing will be carried out by the firms themself using their own testing equipments & staff in presence of the MRT staff who will witness the tests.						
22			**Erection of Lightning Arrestors**						
			Erection of Lightning Arrestors and wiring including movement from the point of unloading to the point of erection	Set		1546	978	538	244
23			**Fixing of Solid Core insulator**	Per Stack		337	259	216	86
24			**Test & Commissioning : Capacitor Bank with reactors**	Each			17950	17950	17950
25			**Control Cables and U.G. Cables**						
	a		Formation of Cable Duct						
		i	Burnt brick/size stone/RCC Cable duct including form box, back filling the sides, removing the excess excavated soil, duct covering with RCC slabs.	cu m	As per Latest KPWD SR applicable to respective areas.				

Sl. No.			Description	Unit	Amount in Rs. exclusive of GST				
					400 kV	220 kV	110 kV	66 kV	33 kV
		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	m	As per Latest KPWD electrical SR applicable to respective areas.				
	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.	m	As per Latest KPWD electrical SR applicable to respective areas.				
			25 mm dia (outer) 2 mm to 2.5 mm thick	m	As per Latest KPWD electrical SR applicable to respective areas.				
			32 mm dia (outer) 2 mm to 2.5 mm thick	m	As per Latest KPWD electrical SR applicable to respective areas.				
			63 mm dia (outer) 2 mm to 2.5 mm thick	m	As per Latest KPWD electrical SR applicable to respective areas.				
			75 mm dia (outer) 2 mm to 2.5 mm thick	m	As per Latest KPWD electrical SR applicable to respective areas.				
			90 mm dia (outer) 2 mm to 2.5 mm thick	m	As per Latest KPWD electrical SR applicable to respective areas.				
			110 mm dia (outer) 2 mm to 2.5 mm thick	m	As per Latest KPWD electrical SR applicable to respective areas.				
			140 mm dia (outer) 2 mm to 2.5 mm thick	m	As per Latest KPWD electrical SR applicable to respective areas.				
			160 mm dia (outer) 2 mm to 2.5 mm thick	m	As per Latest KPWD electrical SR applicable to respective areas.				
	c		Supplying & Laying cable trays including welding fixing of supports						
		i	Cable tray of 600 mm width (Suitable for cable ducts of A, B & C type)	Rmtr	353+245				
		ii	Cable tray of 300 mm width (Suitable for cable duct of D type)	Rmtr	259+165				
	d		Laying of control cables from equipments to control panels.	Rmtr	11				
	e		Laying of 11 kV cables in existing trench/G.I. Pipe/Stoneware pipe/RCC Hume pipe using wooden/aluminium rollers as directed by KPTCL staff.						
		i	Cables of Sizes 3C x 95 to 3C x 150 sqmm	Rmtr	54				
		ii	Cables of sizes 3C x 185 to 3C x 240 sqmm	Rmtr	54				
		iii	Cables of sizes 3C x 300 to 3C x 400 sqmm	Rmtr	54				
		iv	Cables of sizes 1C x 630 to 1C x 1000 sqmm	Rmtr	54				
	f		Fixing of pot heads for HT cable only						
		i	Epoxy type	No.	2254				
		ii	Heat Shrinkable/Cold Shrinkable/Pushon	No.	2857				
26			**Control Panels**						
	a		Erection of control panel, auxilary panel, carrier cabinet, marshalling Bay Kiosk etc., alignment and fixing properly to foundation base including movement from the point of unloading to the point of erection.	Per Panel		4005	4005	3249	3249
	b		Wiring & assisting in testing and commissioning of panel.	Per Panel		6099	6099	6099	6099
	c	i	Testing & Commissioning: C&R Panels Wiring & Testing:						
			Wiring of C&R panels: Identification, ferruling, crimping, termination of wires in C&R panels.	Per Panel		9177	6931	6931	6931

Sl. No.			Description	Unit	Amount in Rs. exclusive of GST				
					400 kV	220 kV	110 kV	66 kV	33 kV
			Testing of C&R panels: Testing for insulation level, Testing of relays, control operations for closing tripping etc., interlock. Alarm Annunciation & Indication Checks.	Per Panel		36709	27722	27722	27722
		ii	Sychronising Trolley/Panel: Wiring, Testing, Calibration of meters & Testing for operation	Each		13512			
		iii	Bus Bar Protection Panel wiring & testing:	Each					
			Wiring: Identification, ferruling, crimping, termination of wires in Bus Bar protection panel.		Rs. 2702 upto 3 Bays & Rs.1155 for each additional Bay.				
			Testing: 1. Testing of relays. 2. Stability test.		Rs. 10810 upto 3 Bays & Rs.4620 for each additional Bay.				
			LT AC Panel			4508	3394	3394	
			ACDB			2424	2424	2424	
			DCDB			2424	2424	2424	
27			**11 kV Switchgear**						
	a		Erection, alignment and fixing to the foundation, indoor/outdoor 11 kV switchgear Panel/unit including movement from the point of unloading to the point of erection.						
		i	11 kV Indoor / Outdoor switchgear	Per Panel		1896			
		ii	11 kV Kiosk	Per Panel		1572			
	b		Wiring & assisting in Testing & Commissioning						
		i	11 kV Indoor / Outdoor switchgear	Per Panel		781			
		ii	11 kV Kiosk	Per Panel		781			
	c		Testing & Commissioning: Wiring: Identification of wires, Ferruling, Crimping & Termination of wires for annunciation, etc., Testing of Relays, CTs, PTs, & Breaker for operation.						
		i	For indoor/outdoor panel comprising of 2I+8F+1BC+1AP3	Per set	76724				
		ii	For single 11 kV panel indoor type	Each	15342				
		iii	For additional 11 kV panel (indoor type)	Each	7671				
		iv	For single 11 kV panel outdoor type/Kiosk	Each	15342				
		v	For each additional 11 kV panel out door type/Kiosk	Each	11724				
			Note: Assisting in Testing & Commissioning for item 22, 24 & 23 means contractors should provide labourers for wiring & Commissioning by RT/MT/Firm Engineers.						
28			**Busbar Formation**						
			Main bus/cross bus (all the three phases in a segment) using Falcon/Drake/Lynx/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 (Spacers to be used only for Double Conductor).	Per Bay	Main/Cross bus with spacers (Spacers to be utilised only for Double Conductor) using i) Twin Bersimis Conductor - 178897/- ii) Quad Bersimis Conductor- 223621/- iii) Quad Moose ACSR - 13333/- iv) Falcon single conductor - 8944/- v) Falcon double conductor - 13333/- vi) Single Drake conductor - 7134/- vii) Double Drake conductor - 10605/- viii) Single Lynx conductor - 5928/- ix) Single Coyote-conductor - 5928/-				
29			**Groundmat**						

Sl. No.			Description	Unit	Amount in Rs. exclusive of GST				
					400 kV	220 kV	110 kV	66 kV	33 kV
	a		Laying of M.S. Flats, welding, applying ACB paint to welded portion and covering with sodium bentonite clay	Rmtr	34				
	b	i	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	50x6-273 50x8-291 75x12-566 75x6-505 75x8-535				
		ii	Same as above but without sodium bentonite clay	Rmtr	50x6-135 50x8-152 75x12-429				
	c		Grounding of equipment with 50 x 6 mm 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.	Rmtr	50x6-226 50x8-253 75x12-618 75x6-541 75x8-571				
	d		Providing 25 mm dia M.S. rod 1.05 metre Long earthmat spikes including heating, bending top 50 mm 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		305			
	e		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		1012			
30			**Providing Deep Bore earthing**						
			"Sinking bore of 150 mm clear dia using fast rig including fixing of 40 mm 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".						
		a	Drilling 150 mm dia bore	Rmtr		675			
		b	40 mm dia MS rod	Rmtr		634			
		c	Bentonite Clay	kg		17			
		d	Cost of GI flat for joining two rods by welding to obtain continuous length	Per joint		671			
31			**Site surfacing**						
	a		Spreading and forming stone dust to required level as per specification including cost of all materials, labour, lead etc., complete.	cu m		1107			
	b		Supplying and spreading 100 mm thick with 20/25 mm jelly with all lead and lifts.						
		i	20/25 mm Jelly Note : Only 20/25 mm jelly shall be used.	cu m		1496			
32			**Station Yard Lightning**						
		a	Supplying and erection of fabricated supporting structures including foundation.	Per set		As per Latest KPWD electrical SR applicable to respective areas.			

Sl. No.			Description	Unit	Amount in Rs. exclusive of GST				
					400 kV	220 kV	110 kV	66 kV	33 kV
		b	Supplying and fixing of Sodium Vapour lamp fittings of 250 watts/90 watts LED with fittings.	Per fitting		As per Latest KPWD electrical SR applicable to respective areas.			
		c	Supplying and laying of 1.1 kV, 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.			
		d	Erection of RCC poles with stringing of O.H. conductor/Laying of cable for yard lights.			Rates for different items as per ESCOM SR to be applied.			
33			**Painting of structures**			Material + Labour			
		a	Supplying and painting of two coats of good quality Red Oxide primer after cleaning and scrapping the surface.	Sq m		23+50=73			
		b	As above with 2 coats of good quality Aluminium paint after 2 coats of good quality Red Oxide primer.	Sq m		55+75=130			
		c	Supplying and painting two coats of aluminium paint after cleaning and scraping the surface without applying Red Oxide primer	Sq m		23+41=64			
		d	As per (b) but with synthetic enamel paint	Sq m		55+87=142			
		e	Supplying and painting two coats of Synthetic enamel paint after cleaning and scraping the surface without aplying red oxide primer.	Sq m		34+36=70			
34			**Battery Set and Charger**						
	a		Installing, assembling, filling of acid, wiring, assisting, test-charging and discharging Battery set.						
		i	220 V	Set		22145			
		ii	110 V	Set		8056			
		iii	48/24 V	Set		3326			
	b		Erection of Battery Charger and wiring						
		i	220 V	Set		1273			
		ii	110 V	Set		1273			
		iii	48/24 V	Set		1273			
	c		Testing & Commissioning of Battery Charger: Wiring: Identification, Ferruling, Crimping & connecting i) AC Supply cable upto 2 sources ii) Load cables, connection at charger end upto 10 load points	No.		7624	4990	4990	4990
			Testing: 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 repel factor						
			Commissioning: 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						
			a) 220 V DC:	Per set		30497	0	0	0
			b) 110 V DC:	Per set		0	19962	19961	19961
35			**Fencing :**						
			Colony and Station yard Boundary fencing including erection of supports a) Security fencing using 8G chainlink/50 mm Mesh b) Barbed wire fencing	m		As per Latest KPWD SR applicable to respective areas			

Sl. No.			Description	Unit	Amount in Rs. exclusive of GST				
					400 kV	220 kV	110 kV	66 kV	33 kV
36			**PLCC Equipments**						
		a	Erection of mounting structures for coupling capacitors	Set		5057	5057	5057	5057
		b	Erection of Coupling capacitors/wave traps/LMU.	Set		10078	8049	3837	1827
		c	Wiring, testing and commissioning	Set		910	783	783	510
37			**Yard Levelling**						
			Yard Levelling and filling up of soil and consolidation.	cu m		As per Latest KPWD SR applicable to respective areas			
38			**Watch and Ward**						
			Emoluments for watch and ward including pay and DA for 8 hours duty	Per Shift		273			
39			**Transportation**						
	A		**Transportation of Transformer, CTs, PTs, Breakers, C&R Panels, 11 kV Switchgears and EHT LAs only.**						
		1	Using 10 MT Lorry						
			Upto 250 km	km			46.85		
			Greater than 250 km	km			41.00		
		2	Using 10 MT Truck & Trailor						
			Upto 250 km	km			81.99		
			Greater than 250 km	km			64.42		
		3	Using 11 to 20 MT Truck & Trailor						
			Upto 250 km	km			105.42		
			Greater than 250 km	km			81.99		
		4	Using 21 MT to 40 MT Truck & Trailor						
			Upto 250 km	km			158.13		
			Greater than 250 km	km			128.84		
		5	Using 41 MT to 80 MT Truck & Trailor						
			Upto 250 km	km			673.50		
			Greater than 250 km	km			585.65		
		6	Using 81 MT to 120 MT Truck & Trailor						
			Upto 250 km	km			1639.82		
			Greater than 250 km	km			1288.43		
	B		**Crane hiring charges for Sub-station works**						
		1	Up to 5 hours	hour			1756.95		
		2	Greater than 5 hours	hour			1405.56		
			Note:- 1) The rates are for up and down journey and for a minimum distance of 250 km. 2) Detention charges are Rs. 5000.00 per day for vehicles upto 40 MT Trailor and Rs.15000.00 for vehicles greater than 40 MT Trailor.						
	39	**(C)**	Transportation by Head Load wherever there is no accessability for						
	Sl. No		Total Distance	Steel, Cement, Per Ton in Rs.	Earth, Gravel, Sand, Lime & other Str. Mat. Rate/cu m in Rs.	Rough, size, cut Latterite Stones, Concrete Blocks Rate/cu m in Rs.	RCC Pole 300 kg WL Rate/pole in Rs.		
		1	Up to 50 metres initial lead	Included in the item Rate					
		2	Beyond 50 metres and upto 100 metres	23	28	36	444		
		3	Beyond 100 metres and upto 150 metres	36	45	57	638		
		4	Beyond 150 metres and upto 200 metres	50	62	78	708		
		5	Beyond 200 metres and upto 250 metres	61	77	96	815		
		6	Beyond 250 metres and upto 300 metres	77	96	120	815		

Sl. No.			Description	Unit	Amount in Rs. exclusive of GST				
					400 kV	220 kV	110 kV	66 kV	33 kV
39	D		Using light vehicle including fuel, oil, lubricants and crew subject to a minimum of 100 km per day in case of break down / subject to prior approval of CEE (Transmission Zone).	Per Day	Prevailing Board approved Rates				
40			**Loading and Unloading**						
		a	Loading of Power Transformers, CTs, PTs, Breakers, C&R Panels, 11 kV Switchgears, Wave trap, Coupling Capacitors, HT UG Cables, Insulators, ACSR Conductor, Ground Conductors, etc.,	MT	2061				
		b	Unloading of Power Transformers, CTs, PTs, Breakers, C&R Panels, 11 kV Switchgears, Wave trap, Coupling Capacitors, HT UG Cables, Insulators, ACSR Conductor, Ground Conductors, etc.,	MT	2061				
		c	Loading of other materials like structural steel, building materials etc.,	MT	366				
		d	Unloading of other materials like structural steel, building materials etc.,	MT	366				
41			**Benching, Revetment and Pitching**						
	A		Earth work in surface excavation in the following types of soil/Rock and removing the excavated stuff with all leads and lifts, disposed earth leveled , excavated surface leveled & neatly dressed etc., complete as per specifications. a) Ordinary soil b) Hard soil c) Ordinary rock/soft rock/laterite soil d) Hard rock	cu m	For Sub-station works, rate as per KPWD SR and for Transmission line works, add 25% extra					
	B	i	Construction of revetment/retaining wall with size stone masonry for foundation/basement in CM 1:6	cu m	For Sub-station works, rate as per KPWD SR and for Transmission line works, add 25% extra				
		ii	Construction of revetment/retaining wall with rubble stone masonry for foundation/basement in CM 1:6	cu m					
		iii	Providing and laying pitching on slopes laid over prepared filter media including stone/boulder apron laid dry in front of toe of embankment complete as per drawing and technical specifications	cu m					
42			**Labour for 66/33 kV lines using 9/9.5 metres Long RCC Poles**						
	a		Erection of 9/9.5 metres RCC Poles 300 kg working load, in the excavated pit as per the approved drawing specification (excluding the cost of excavation, backfilling and concreting) Note: The rates of excavation, backfilling and concreting are to be adopted as noted in Sl nos. 3 and 4 respectively.	No.	781				

Sl. No.			Description	Unit	Amount in Rs. exclusive of GST				
					400 kV	220 kV	110 kV	66 kV	33 kV
	b		Erection of DP structure excluding cost of erection of RCC poles. Including fixing of braces insulators etc., as per the approved drawings and specifications (excluding the cost of excavation, backfilling and concreting). Note: The rates of excavation, backfilling and concreting are to be adopted as noted in Sl nos. 3 and 4 respectively.	Set	1403				
	c		Fixing of V-Shape cross arms, single top supports and insulators.	Set			159	98	
	d		Fixing of spiral earth electrodes	Set			122	122	
	e		Road/P&T Guarding	Set			1049	976	
	f		Stringing Rabbit conductor, fixing disc insulator to cross arms etc.,						
		i	For Hilly terrain	km			2830	2732	
		ii	For Plain terrain	km			2025	2025	
	g		Fixing of guy sets in the excavated pits using 7/9 or 7/10 SWG guy wire/turn buckle, guy rod break insulators as per the approved drawings and specifications (excluding the cost of excavation, backfilling and concreting) Note : The rates of excavation, backfilling and concreting are to be adopted as noted in Sl nos. 2, 3 and 4.	No.			234	234	
	h		Supplying and fixing of AC devices as per specification	Rmtr			61	61	
43			**Dismantling**						
		i	Dismantling of Power Transformer		Same rate as that of erection of Power Transformer				
		ii	Dismantling charges for conctrete with steel reinforcement	cu m	829				
		iii	Dismantling of concrete only	cu m	403				
		iv	Dismantling charges in all other cases		75% of erection charges in general				
44	**I**		**Special Locality Allowance**						
			Following places are eligible for extra locality allowance against each items on labour charges						
	a		**Dakshina Kannada District :** Bantwal, Mangalore, Sulya, Puttur, Belthangady Taluks		35%				
	b		**Udupi District :** Udupi, Kundapur, Karkala Taluks		35%				
	c		**Uttara Kannada District :** Karwar, Supa, Haliyal, Sirsi, Mundagodu, Yellapur, Bhatkal, Siddapur, Honnavar, Kumta Ankola Taluks		35%				
	d		**Kodagu District :** Madikeri, Virajpet, Somarwarpet, Taluks		35%				
	e		**Chikkamagalur District :** Kadur, Chikkamagalur, Koppal, Tarikere, Mudigere, Narasimharajapura, Sringeri Taluks		25%				
	f		**Shimoga District :**						
		i	Hosanagar, Thirthahally, Sagar, Sorab, Shikarpur Taluks		25%				
		ii	Shimoga, Bhadravathi, Honnali Taluks		15%				
	g		**Davangere District :** Chennagiri Taluk only		15%				
	h		**Dharwad District :**						
		i	Kalgatagi Taluk		25%				
		ii	Dharwad Taluk		15%				
	i		**Haveri District :**						
		i	Hangal, Herekerur Taluks		25%				
		ii	Bydagi, Shigaon, Savanur Taluks		15%				

Sl. No.			Description	Unit	Amount in Rs. exclusive of GST				
					400 kV	220 kV	110 kV	66 kV	33 kV
	j		**Belgaum District :**						
		i	Khanapura Taluk		25%				
		ii	Hukkeri, Belgaum, Bylahongal, Soundatti Taluks only		15%				
	k		**Mysore District :** Heggadadevanakote, Hunsur Taluks		25%				
	l		**Chamarajanagar District :** Gundlupet, Chamarajanagar, Kollegal Taluks		25%				
	m		**Hassan District :** Sakaleshpur, Hassan, Arakalagud, Belur, Alur, Taluks only		25%				
	II		**Scattered area mobilisation allowance over the basic labour rates for Station & Line works which are not covered under special locality allowance.**		5%				
	III		**Extra allowance over the basic labour rates for Station & Line works to take care of contractors overheads.**		15%				
	IV		**Area allowance for Transmission Line works**						
		i	BBMP limits		40%				
		ii	Other Corporation area limits other than BBMP limits.		25%				
		iii	Town/City Municipal Corporation area limits.		20%				
			Note: 1) In case of civil works where KPWD SR rates are adopted, the locality allowance as applicable in KPWD SR shall be followed. 2) For all other works the locality allowance as indicated above shall be followed.						
45	1		Surveying of cable route excavation trial holes as per field requirements, preparation of cable route profile, drawings for cable laying, final route alignment, marking lines and grades, preparation of final cable route, drawings after laying and energising for preparing bill of materials.	km	107997	60986	60986		
	2	A	Earth work excavation for laying of UG cable below footpath in the following strata of soil by mechanical/manual means including removing and re-fixing the kerb and pavement stone slabs, removing and re-fixing masonry of other services with patch work, deposition of earth/rock on bank with all leads and lifts including shoring, strutting, providing caution boards, danger lighting, bracing, sheeting, bailing out of water, barricades and other works not specifically mentioned herein but required for the completion of work in all respects		Note: 1. Extra for excavation under water condition and or foul conditions including bailing/pumping out removal of slush add 20% of the rate. 2. The indicated rates are applicable for works in BBMP limits of Bangalore. For other areas the rates of respective KPWD Circles shall be considered. 3. No extra area weightage need to be added to the rates indicated here for works in BBMP limits since the PWD area weightage is already considered.			
		a	Ordinary soil/ Black Cotton Soil	cu m	345				
		b	Hard soil	cu m	472				
		c	Hard Laterite Soil/Dry fissured rock.	cu m	1282				
		d	In hard rock with chiseling and wedging	cu m	1799				

Sl. No.			Description	Unit	Amount in Rs. exclusive of GST				
					400 kV	220 kV	110 kV	66 kV	33 kV
		B	Earth work excavation for laying of UG cable in open ground and beneath the road surface in the following strata of soil by mechanical/manual means deposition of earth/rock on bank with all leads and lifts including shoring, strutting, providing caution boards, danger lighting, Bracing, sheeting, bailing out of water, barricades and other works not specifically mentioned herein but required for the completion of work in all respects.						
		a	Ordinary soil/Black Cotton Soil	cu m	255				
		b	Hard soil	cu m	382				
		c	Hard Laterite Soil/Dry fissured rock.	cu m	1192				
		d	Hard rock with chiseling and wedging	cu m	1709				
	3		Cutting the road surface for laying of cable & disposing of the excavation/debris with all leads and lifts to any notified disposal point of the local bodies/as directed including providing barricading, danger lighting/caution boards etc., in the following classifications of road surfaces.		Note: 1. The indicated rates are applicable for works in BBMP limits of Bangalore. For other areas the rates of respective KPWD Circles shall be considered. 2. No extra weightage need to be added to the rates indicated here for works in BBMP limits since the PWD area weightage is already considered.				
		a	Macadam road surface	cu m	491				
		b	Asphalt surface	cu m	613				
		c	Cement concrete surface	cu m	902				
	4		Laying EHT single core, XLPE copper cable in trefoil, tapping, fixing pipes for drain and gate crossing as per drawings & specifications in trench pipes, ducts by pulling, drawing etc., including transport, handling of cable drums, paving out cables using standard cable installation equipments. **NOTE:** The quoted rate per km shall include laying one circuit per km each circuits consisting of 3 Nos. Single core cables including transport of cable drums material, equipments to site and retaining unused items to stores.	ckt km	2982762	1144055	975770		
	5		Supplying and filling sieved/riddled sand of approved quality in cable trenches including all lead, lift, watering, ramming, etc., complete.	cu m	2306				
	6		Design, Engineering, supplying RCC protection covers with M20 Grade concrete and Fe 415 steel, handling and covering the cables in the trench as per the drawing, specifications and directions of the Engineer in charge of the work.	Sq m	1129	Rate is same for all capacity of cables. The rate is same for all circles and areas. No extra weightage to be added.			
	7		Back filling the cable trench with selected available ridded earth from the trench excavation & consolidating with ramming in successive layers of 15 cm thickness, watering wherever necessary, achieving 96 % proctors density, forming a crown for subsidence.	cu m	82	Rate is same for all capacity of cables. Refer notes as in item 3.			
	8		Disposal of surplus earth/rock to the areas directed/notified areas of disposal point of the local bodies including all lead and lift charges loading, unloading etc., complete.	cu m	246	Rate is same for all capacity of cables. Refer notes as in item 3.			

Sl. No.			Description	Unit	Amount in Rs. exclusive of GST				
					400 kV	220 kV	110 kV	66 kV	33 kV
	9		Handling and making normal straight joints for EHV power cables with all consumables at site etc., complete.	No.	462843	101000	48789		
	10		Handling and making of cables end termination for EHV single core XLPE copper cable.	No.	484899	101000	48789		
	11		Erection of cross bonding single phase earth link boxes on to the cable mounting structure connecting earth leads with all lugs, fixtures, clamps bolts, and nuts complete.	No.	44080	36591	36591		
	12		Supplying, handling and fixing RCC cable route markers and joint markers as per the specifications, approved drawing and directions of the Engineer in charge of the work.	No.	296	Rate is same for all capacity of cables. The rate is same for all circles and areas. No extra weightage to be added.			
	13		Design engineering, supply of all labour, material and construction of RCC (M20 Grade) footings and pedestals of any section/size including the cost of excavation in all types of soil/rock, back filling with available approved earth/new earth, disposal of surplus earth/rock to the places directed, concrete (M20 Grade and lean concrete 1:4:8), reinforcement steel, form work, grouting, under pinning, foundations strengthening in expansive/BC soil, curing, sundries and other items not mentioned herein but required for the completion of work as per technical specifications, approved drawing and directions of Engineer in charge of the work. For EHV cable termination structure.	No.	30005	8282	8282		
	14		Design, Engineering and construction of RCC Cable Joint Bays to accommodate jointing of 3 Nos. (Single Circuit) / 6 Nos. (Double Circuit) as required of single core XLPE UG Cable as per specifications, drawings and directions of the Engineer in charge of the work. The bidders shall inspect the site and quote duly furnishing designs and drawings. The joint bays shall be filled with riddled sand after completion of all the other works viz., construction of joint bay, laying of cable, testing etc.		The rate is same for all circles and areas. No extra weightage to be added.			
		a	For 220 kV Cables, size of bay 9.0 x 1.6 x 1.6 m clear	No.	401572				
		b	For 110 kV & 66 kV Cables, size of bay 4.0 x 1.8 x 1.5 m clear	No.		194551	194551		
	15		Surface Restoration : Providing road restoration work consisting of Granular Sub-Base, wet mix macadam, bituminous macadam, bituminous concrete, Primer Coat & Tack Coat as per BBMP specifications / requirements and drawing including cost of all materials, labour, over heads, machineries etc., and directions of the Engineer in charge of the work. (Note: For detailed specifications KPWD SR of Bangalore Circle and NH SR shall be referred.)			Note:- 1. The indicated rates are applicable for works in BBMP limits of Bangalore. For other areas the rates of respective KPWD Circles shall be considered. 2. No extra area weightage need to be added to the rates indicated here for works in BBMP limits since the PWD area weightage is already considered.		
		a	Cable trench clear width 0.80 metre	Rmtr	1269				
		b	Cable trench clear width 1.00 metre	Rmtr	1586				
		c	Cable trench clear width 1.50 metre	Rmtr	2379				

Sl. No.			Description	Unit	Amount in Rs. exclusive of GST				
					400 kV	220 kV	110 kV	66 kV	33 kV
	16	a	Cable Crossing Arrangements: Design, Engineering and construction of Cable crossing arrangements at Rail, Bridges & Culverts / Storm water drains / Water Supply Line, etc. The arrangement shall accommodate 3 Nos. (Single Circuit) / 6 Nos. (Double Circuit) as required of single core XLPE Cable. Construction of crossing arrangements shall include RCC cable ducts, RCC/Stone Masonry piers, abutments, Wing walls, Returns, Wall foundations, etc. The bidders shall inspect the site and quote duly furnishing designs and drawings. The successful bidders shall furnish the designs and drawings in accordance with the requirements of the statutory authorities (National & State High ways, BBMP, Railways, BWSSB, BSNL, KPTCL / BESCOM etc.) and execute the work as per the approved drawing and directions of the Engineer in charge of the work.	Rmtr	The rates to be arrived based on the drawing and site requirement. The estimates shall be prepared in consultation with Civil Engineers of the circle.				
		b	Cement concrete 1:2:4: Providing and laying site mix / Ready mixed cement concrete of 1:2:4 proportion for embedding the HDPE pipes in road crossings and for other works using 20 mm and down size granite jelly and clean sieved sand laid in 15 cm thick layers and well compacted including vibrating, curing etc., with all lead and lift, smooth finishing for exposed faces and with necessary centering and form work etc., complete.	cu m	5630				
	17		Horizontal trench less cutting : Design of cable crossing arrangement at highway using HDD arrangement shall accommodate crossing of XPLE UG cable. The work shall be carried out as per the directions of KPTCL in charge of the work.	ckt m	27545	18364	18364		
	18		Laying of 12 Fibre Dual Window Mono Mode (DWMM) Optical Fibre Cable as per drawings & specifications.	km	9417	9417	9417		
	19		Handling and making straight through joints closures for 12 Fibre Dual Window Mono Mode (DWMM) Optical Fibre Cable.	No.	22074	22074	22074		
	20		Handling and making terminal joints for 12 Fibre Dual Window Mono Mode (DWMM) Optical Fibre Cable.	No.	26447	26447	26447		
	21		Supplying and providing PVC warning Tapes 150 mm wide & 100 Microns thick as per specifications, drawings and directions of the Engineer in charge of the work.	Rmtr	53				
	22		HDPE Pipes : Supplying & providing HDPE pipe 6 mm thickness (as per IS 4984) with necessary accessories for road crossing, drive ways etc.						
		a	160 mm dia	Rmtr	1088				
		b	230 mm dia	Rmtr	2401				
46			**RT and R & D Testing Charges**		**Amount per day in Rs.**				
		1	Testing of Transformers and attending to break down work of ESCOMs 33 kV Stations.		8433 + Transportation charges				

Sl. No.			Description	Unit	Amount in Rs. exclusive of GST				
					400 kV	220 kV	110 kV	66 kV	33 kV
		2	Energy meter installation charges at wind mill			11830			
		3	Charges for conducting any test on per day basis (exclusive of service tax)			31039			
		4	Charges for witnessing the pre commissioning tests (excluding transportation charges)			9370			
		5	Soil resistivity tests & furnishing results up to 110 kV Sub-stations			46852			
		6	Soil resistivity tests & furnishing results up to 220 kV Sub-stations			76135			
		7	Furnishing Earth mat design after conducting Soil resistivity test up to 110 kV Sub-station.			128843			
		8	Furnishing Earth mat design after conducting Soil resistivity test up to 220 kV Sub-station			199121			
Sl. No.			**Description**	**Unit**	**Amount per day in Rs.**				
					220 kV	**110 kV**	**66 kV**		
	9		Investigation of existing Sub-station up to 110 kV & suggesting remedial measures.			58565			
	10		Investigation of existing Sub-station up to 220 kV & suggesting remedial measures.			87848			
	11		Tan-delta & Capacitance test on Transformers up to 110 kV voltage class			46852			
	12		Tan-delta & Capacitance test on Transformers up to 220 kV voltage class			70278			
	13		Soil resistivity tests & furnishing results for 400 kV Sub-stations			87848			
	14		Furnishing Earthmat design including conducting Soil resistivity test at site for 400 kV Sub-station			263543			
	15		Earth efficiency test of existing Sub-station for 400 kV & suggesting remedial measures.			128843			
	16		Tan-delta & Capacitance test on Transformers for 400 kV voltage class (per Transformer / 3 phases of ICTs)			117130			
	17		Additional earthmat design / suitability of existing earthmat up to 110 kV Sub-stations			81991			
	18		Additional earthmat design / suitability of existing earthmat for 220 kV Sub-stations			122987			
	19		Additional earthmat design / suitability of existing earthmat for 400 kV Sub-stations			175695			
	20		**Transformer Oil Testing Charges**						
		i	Acidity			1350			
		ii	Resistivity			1650			
		iii	Tan-Delta			1650			
		iv	Interfacial Tension			1350			
		v	Breakdown Voltage			1350			
		vi	Water Content			1650			
		vii	Flash Point			1350			
		viii	Viscosity			1350			
		ix	Density			1350			
		x	Dissolved Gas Analysis			6600			
		xi	Furan Analysis			8000			
			Note : The transportation charges, existing at the rate of Rs. 15/- per km to be revised to Rs. 25/- per km for to & fro from head quarters to site.						
			Minimum transportation charges of lumpsum Rs. 3000/- per day for 100 km with in city limits/local						

Sl. No.			Description	Unit	Amount in Rs. exclusive of GST				
					400 kV	220 kV	110 kV	66 kV	33 kV
			External agencies have to provide accommodation for KPTCL officers/staff during the stay at site at their cost.						
			The testing charges for ESCOMs at the concessional rate at 50% of revised charges (remaining unaltered as in earlier circular)						