



# BIHAR STATE POWER TRANSMISSION COMPANY LIMITED

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**PREAMBLE**

1	<p>Schedule of Rate (SOR) are a set of information indicating Rates of various Materials / Equipments / Erection etc. The Rates mentioned in this SOR are indicative and to be used for preparation of Estimates and DPRs etc. It will bring uniformity and have less deviation in the costs of different estimates.</p>
2	<p>The Rates mentioned in this SOR are exclusive of any Taxes. Estimates should be framed after adding the following suitable components:-</p> <p>(a) Freight &amp; Insurance (F&amp;I) @4% (four percent) of Supply Price Component should be added for Supply of Materials.</p> <p>(b) Applicable GST (Goods &amp; Service Tax) should be added on Supply components, F&amp;I components and Erection components.</p>
3	<p>It is to be noted that, the Rates of Materials / Equipments / Labours etc. differ from State to State and Company to Company as there can be minor differences in specifications, different terms of payments, timelines for supply of materials etc.</p>

<b>BIHAR STATE POWER TRANSMISSION COMPANY LIMITED</b>			
<b>SCHEDULE OF RATES (SUPPLY) FOR CONSTRUCTION OF TRANSMISSION LINES</b>			
<b>(ALL PRICES ARE WITHOUT TAXES AND GST SHALL BE PAID EXTRA AS APPLICABLE)</b>			
<b>Sl. No.</b>	<b>Description of items</b>	<b>Unit</b>	<b>Unit Supply Price (in Rs.)</b>
<b>1</b>	<b>TOWER STEEL</b>		
	Fabrication, galvanizing and supply of various types of towers including M/C tower (if applicable) and it's body and leg extensions (complete) including stubs and hangers of 20 mm rod, U-bolt etc. (Payment shall be made for identified MT for complete towers.)		
1.1	High tensile steel	MT	80,459.00
1.2	Mild steel	MT	77,996.00
1.3	Hexagonal bolts and nuts including Step bolts	MT	1,02,909.00
1.4	Anti Theft Bolt	MT	1,02,909.00
<b>2</b>	<b>Tower Earthing</b>		
2.1	Pipe Type	Nos.	6,738.00
<b>3</b>	<b>Tower Accessories</b>		
3.1	Danger Plate	Nos.	318.00
3.2	Number Plate	Nos.	318.00
3.3	Phase Plate (set of 3)	Sets	248.00
3.4	Circuit Plate(set of 2)	Sets	248.00
3.5	Bird Guard (set of 3)	Sets	1,757.00
3.6	Anti Climbing Device	Sets	7,436.00
<b>132 KV Transmission Lines with ACSR Panther Conductor</b>			
<b>4</b>	<b>CONDUCTOR</b>		
4.1	ACSR Panther Conductor	KM	1,76,305.00
<b>5</b>	<b>LONG ROD POLYMER INSULATOR</b>		
5.1	Long Rod Polymer Insulator 70 KN of light weight	Nos.	3,956.00
5.2	Long Rod Polymer Insulator 90 KN of light weight	Nos.	4,244.00
<b>6</b>	<b>HARDWARE FITTINGS FOR ACSR PANTHER CONDUCTOR</b>		
6.1	Single Suspension 'I' Fittings	Set	1,917.00
6.2	Single Suspension Pilot Fittings	Set	1,374.00
6.3	Double Suspension Fittings	Set	3,950.00
6.4	Single Tension Fittings	Set	2,038.00
6.5	Double Tension Fittings	Set	4,245.00
<b>7</b>	<b>CONDUCTOR ACCESSORIES FOR ACSR PANTHER CONDUCTOR</b>		
7.1	MSCJ for Conductor	Nos.	551.00
7.2	Repair Sleeve for conductor	Nos.	229.00
7.3	Vibration Damper for conductor	Nos.	571.00
7.4	PA Rod (complete set) for conductor	Nos.	766.00
<b>220 KV Transmission Lines with ACSR Zebra Conductor</b>			
<b>4</b>	<b>CONDUCTOR</b>		
4.1	ACSR Zebra Conductor	KM	2,87,688.00
<b>5</b>	<b>LONG ROD POLYMER INSULATOR</b>		
5.1	Long Rod Polymer Insulator 90 KN of light weight	Nos.	4,243.00
5.2	Long Rod Polymer Insulator 120 KN of light weight	Nos.	4,531.00
<b>6</b>	<b>HARDWARE FITTINGS FOR ACSR ZEBRA CONDUCTOR</b>		
6.1	Single Suspension 'I' Fittings	Set	2,002.00
6.2	Single Suspension Pilot Fittings	Set	1,792.00
6.3	Double Suspension Fittings	Set	4,160.00

Sl. No.	Description of items	Unit	Unit Supply Price (in Rs.)
6.4	Single Tension Fittings	Set	2,666.00
6.5	Double Tension Fittings	Set	5,030.00
<b>7</b>	<b>CONDUCTOR ACCESSORIES FOR ACSR ZEBRA CONDUCTOR</b>		
7.1	MSCJ for Conductor	Nos.	756.00
7.2	Repair Sleeve for conductor	Nos.	305.00
7.3	Vibration Damper for conductor	Nos.	765.00
7.4	PA Rod (complete set) for conductor	Nos.	1,375.00
<b>132/220 KV Transmission Lines with ACSR Moose Conductor</b>			
<b>4</b>	<b>CONDUCTOR</b>	Unit	
4.1	ACSR Moose Conductor	KM	3,06,343.00
<b>5</b>	<b>LONG ROD POLYMER INSULATOR</b>		
5.1	Long Rod Polymer Insulator 120 KN of light weight	Nos.	4,531.00
5.2	Long Rod Polymer Insulator 160 KN of light weight	Nos.	6,855.00
<b>6</b>	<b>HARDWARE FITTINGS FOR ACSR MOOSE CONDUCTOR</b>		
6.1	Double I Suspension-400kv QUAD Moose	Set	17,369.00
6.2	Single I SUS Pilot -400 kv QUAD Moose	Set	31,665.00
6.3	QUAD Tension String -400 kv QUAD Moose	Set	40,471.00
6.4	Single Suspension 'I' Fittings	Set	3,064.00
6.5	Single Suspension Pilot Fittings	Set	3,064.00
6.6	Double Suspension Fittings	Set	5,054.00
6.7	Single Tension Fittings	Set	9,856.00
6.8	Double Tension Fittings	Set	11,098.00
<b>7</b>	<b>CONDUCTOR ACCESSORIES FOR ACSR MOOSE CONDUCTOR</b>		
7.1	MSCJ for Conductor	Nos.	1,251.00
7.2	Repair Sleeve for conductor	Nos.	449.00
7.3	Vibration Damper for conductor	Nos.	969.00
7.4	PA Rod (complete set) for conductor	Nos.	1,805.00
7.5	Bundle Spacer for conductor	Nos.	960.00
7.6	Rigid Spacer	Nos.	1,258.00
<b>132 KV Transmission Lines with HTLS Conductor</b>			
<b>1</b>	<b>HTLS CONDUCTOR</b>		
1.1	HTLS Conductor Capacity - 240 MVA, 1050 A (equivalent to Panther)	KM	7,64,118.00
<b>2</b>	<b>HARDWARE FITTINGS &amp; ACCESSORIES FOR HTLS CONDUCTOR</b>		
2.1	Single Suspension 'I' Fitting w/o Clamp	Set	3,142.00
2.2	Single Suspension Pilot Fittings w/o Clamp	Set	4,837.00
2.3	Double Suspension Fittings w/o Clamp	Set	7,070.00
2.4	Single Tension Fittings w/o Clamp	Set	3,229.00
2.5	Double Tension Fittings w/o Clamp	Set	8,092.00
2.6	Single Suspension Clamp	Set	5,997.00
2.7	Double Suspension Clamp	Set	15,974.00
2.8	Dead End Tension Clamp	Set	63,749.00
2.9	Double Tension Clamp	Set	72,902.00
2.10	Terminal Pad without Holes	Set	6,802.00
2.11	Terminal Pad with Holes	Set	6,647.00
2.12	MSCJ	Nos.	73,258.00
2.13	Repair Sleeve	Nos.	10,188.00
2.14	Vibration Damper	Nos.	9,218.00

Sl. No.	Description of items	Unit	Unit Supply Price (in Rs.)
<b>Earth Wire</b>			
<b>4</b>	<b>GI Earthwire</b>		
4.2	GI(7/10) SWG Earth Wire	KM	57,910.00
<b>8</b>	<b>GI Earthwire accessories</b>		
8.1	Mid span compression joint for Earthwire conductor	Nos.	185.00
8.2	Flexible copper bonds for Earthwire	Nos.	639.00
8.3	Vibration damper for earth wire	Nos.	457.00
8.4	Suspension clamp assembly for Earthwire	Set	569.00
8.5	Tension clamp assembly for earthwire	Set	561.00
<b>OPGW</b>			
1	24 Fibre (DWSM) OPGW Fibre Optic Cable	KM	1,82,188.00
2	Hardware set for OPGW CABLE	Set	37,213.00
3	Joint Box (24 Fiber) as per technical requirement	Nos.	30,175.00
4	FODP 48F: Indoor type, rack mounted with FCPC coupling and pig tails (5 mtrs each)	Nos.	45,868.00
5	Fibre optic approach cable, 24 fibre (DWSM)	KM	1,26,168.00
6	Hardware set for above 24 fibre optic approach cable	Set	53,645.00
7	<b>SDH equipment (STM-4 MADM, upto 3 MSP protected direction)</b>		
7.1	Base Equipments (Common Cards, Cross Connect/Control Cards, Optical Base Cards, Power Supply Cards, Power Cabling, other hardware & accessories including sub-racks, patch cords, DDF, etc. fully equipped including Cabinet etc.	No.	6,78,802.00
7.2	Optical Interface S4.1	No.	1,63,753.00
7.3	Optical Interface L4.1	No.	20,246.00
7.4	Optical Interface L4.2	No.	49,196.00
7.5	Optical Line Interface <150 KM	No.	3,37,938.00
7.6	Optical Line Interface upto 250 KM (only unit rate to be furnished by the bidder)	No.	8,29,204.00
7.7	E1 Interface Card (Minimum 63 nos.)	No.	77,236.00
7.8	Ethernet Interface 10/100 Mbps with layer 2 switching (minimum 16 nos.)	No.	98,568.00
<b>8</b>	<b>Drop &amp; Insert Multiplexer</b>	No.	3,64,030.00
8.1	2 wire (sub/sub) voice chammel card	No.	48,041.00
8.2	2 wire (sub/exch) voice channel card	No.	48,041.00
8.3	4 wire E&M voice channel card	No.	47,893.00
8.4	Asynchronous sub-channel data card	No.	46,250.00
8.5	Synchronus data card 64 kbps (only unit rate to be furnished by the bidder)	No.	59,295.00
8.6	Synchronus data card N X 64 kbps	No.	47,189.00
8.7	Router Board with min 4 Ports	No.	51,908.00
8.8	Digital Access Cross Connect Switch (DACS), 16 X 16 ports matrix, full equipped for minimum 16E-1 ports	No.	2,51,016.00
8.9	Equipment Cabinets for SDH equipment, primary multiplexer, drop/insert and DACS	No.	68,065.00
8.10	Software/Hardware (remote)	No.	6,66,513.00
8.11	Software/Hardware (craft terminal)	No.	1,29,739.00
<b>9</b>	Digital Protection Coupler suitable for integration and operation through OPGW System with required Cables, complete in all respect.	Set	2,17,039.00
<b>10</b>	<b>If any item not specified, but required for completion of the project shall be included.</b>	LS	

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<b>SCHEDULE OF RATES (ERECTION/COMMISSIONING) FOR CONSTRUCTION OF TRANSMISSION LINES</b>			
<b>(ALL PRICES ARE WITHOUT TAXES AND GST SHALL BE PAID EXTRA AS APPLICABLE)</b>			
<b>Sl. No.</b>	<b>Description of items</b>	<b>Unit</b>	<b>Unit Erection Price (in Rs.)</b>
<b>1</b>	<b>Survey &amp; Soil Investigation</b>		
1.1	Detailed complete survey works including preliminary survey, profiling, tower spotting & check survey, submission of survey sheets including soil investigations. (Rate per route KM)	RKM	27,552.00
1.2	Soil Investigation in all kinds of Soil except HR & FR	Location	17,008.00
<b>2</b>	<b>Proto Assembly &amp; Type Testing</b>		
2.1	Proto assembly charges for all types of 132 KV Towers (suitable for ACSR Panther/ HTLS Conductor)	LS	33,922.00
2.1	Proto assembly charges for all types of 132 KV Towers (suitable for Single ACSR Moose Conductor)	LS	21,73,913.00
2.1	Proto assembly charges for all types of 220 KV Towers (suitable for ACSR Zebra Conductor)	LS	55,757.00
2.1	Proto assembly charges for all types of 220 KV Towers (suitable for Twin ACSR Moose Conductor)	LS	43,47,826.00
2.2.A	Type test charges for ACSR Panther Conductor	LS	53,618.00
2.2.B	Type test charges for ACSR Zebra Conductor	LS	3,25,829.00
2.2.C	Type test charges for ACSR Moose Conductor	LS	3,58,411.00
2.2.D	Type test charges for HTLS Conductor	LS	3,94,252.00
2.3	Type test charges for Long Rod Polymer Insulator	LS	8,46,950.00
2.4	Type test charges for Hardware Fittings	LS	3,19,747.00
2.5	Type test charges for Conductor Accessories	LS	4,64,943.00
<b>3</b>	<b>TOWER ERECTION</b>		
3.1	Complete Tower Erection of various types of towers including M/C tower (if applicable) including stub setting, tack welding up to the cross arm, fixing of hangers of 20 mm rod, U-bolt etc. complete in all respect as per Specification & requirement.	MT	9,798.00
<b>4</b>	<b>Tower Earthing</b>		
4.1	Pipe Type	Nos.	4,348.00
<b>5</b>	<b>Tower Accessories</b>		
5.1	Danger Plate	Nos.	87.00
5.2	Number Plate	Nos.	87.00
5.3	Phase Plate (set of 3)	Sets	87.00
5.4	Circuit Plate(set of 2)	Sets	87.00
5.5	Bird Guard (set of 3)	Sets	261.00
5.6	Anti Climbing Device	Sets	1,739.00
<b>6</b>	<b>Earth work in excavation in foundation pits including back filling, shoring, shuttering, dewatering etc. (rate per cubic meter)</b>		
6.1	Normal Dry Soil	Cu.M	215.00
6.2	Wet Soil / Partially Sub-Murged / Fully Sub-Murged	Cu.M	244.00
<b>7</b>	<b>Concreting (Normal &amp; Shallow Foundation)</b> (Note:- Shallow foundation shall be decided by the concerned ESE during execution after Soil Investigation and shall be based upon site conditions)		
7.1	Concreting 1:1.5:3 (M20)	Cu.M	11,663.00
7.2	Concreting 1:3:6 (M10)	Cu.M	9,481.00
7.3	Reinforcement (Supply & Erection both)	MT	80,431.00
7.4	Benching	Cu.M	781.00
<b>8</b>	<b>REVTMENT</b>		

Sl. No.	Description of items	Unit	Unit Erection Price (in Rs.)
8.1	Random Rubble Stone masonry including excavation	Cu.M	4,709.00
8.2	Backfilling and levelling of volumes enclosed in revetment	Cu.M	315.00
8.3	M-15 (1:2:4) Concrete for top seal cover of revetment	Cu.M	10,508.00
<b>9</b>	<b>STRINGING</b>		
<b>A</b>	<b>STRINGING - 132 KV - Panther</b>		
9.1	STRINGING of <b>132 KV S/C DCSS transmission line with 03 Phase ACSR Panther Conductor</b> (without OPGW/ Eartwire) complete with all works including stringing of Conductor, Fitting of Hardwares, Hoisting of Insulators etc.	RKM	1,14,284.00
9.1(a)	STRINGING of <b>132 KV S/C DCSS transmission line with 02 Phase ACSR Panther Conductor</b> (without OPGW/ Eartwire) complete with all works including stringing of Conductor, Fitting of Hardwares, Hoisting of Insulators etc.	RKM	77,714.00
9.2	2nd Circuit STRINGING (without 1st Circuit Live) of <b>132 KV S/C DCSS transmission line with 03 Phase ACSR Panther Conductor</b> (without OPGW/ Eartwire) complete with all works including stringing of Conductor, Fitting of Hardwares, Hoisting of Insulators etc.	RKM	1,14,284.00
9.2(a)	2nd Circuit STRINGING ( <b>with 1st Circuit Live</b> ) of <b>132 KV S/C DCSS transmission line with 03 Phase ACSR Panther Conductor</b> (without OPGW/ Eartwire) complete with all works including stringing of Conductor, Fitting of Hardwares, Hoisting of Insulators etc.	RKM	2,85,711.00
9.3	STRINGING of <b>132 KV D/C transmission line with 06 Phase ACSR Panther Conductor</b> (without OPGW/ Eartwire) complete with all works including stringing of Conductor, Fitting of Hardwares, Hoisting of Insulators etc.	RKM	2,28,570.00
9.4	STRINGING of <b>132 KV M/C transmission line with 12 Phase ACSR Panther Conductor</b> complete with all works including stringing of Conductor, Fitting of Hardwares, Hoisting of Insulators etc.	RKM	3,42,855.00
<b>B</b>	<b>STRINGING - 132 KV - Single Moose</b>		
9.1	STRINGING of <b>132 KV D/C transmission line with 06 Phase ACSR Moose Conductor</b> (without OPGW/ Eartwire) complete with all works including stringing of Conductor, Fitting of Hardwares, Hoisting of Insulators etc.	RKM	3,42,855.00
<b>C</b>	<b>STRINGING - 132 KV - HTLS</b>		
9.1	STRINGING of <b>132 KV D/C transmission line with 06 Phase HTLS Conductor</b> (without OPGW/ Eartwire) complete with all works including stringing of Conductor, Fitting of Hardwares, Hoisting of Insulators etc.	RKM	5,55,949.00
9.2	Reconductoring of <b>132 KV S/C transmission line with 03 Phase HTLS Conductor</b> (without OPGW/ Eartwire) complete with all works including stringing of Conductor, Fitting of Hardwares, Hoisting of Insulators etc.	RKM	3,70,632.00
9.3	Reconductoring of <b>132 KV D/C transmission line with 06 Phase HTLS Conductor</b> (without OPGW/ Eartwire) complete with all works including stringing of Conductor, Fitting of Hardwares, Hoisting of Insulators etc.	RKM	5,55,949.00
<b>D</b>	<b>STRINGING - 220 KV - Zebra</b>		

Sl. No.	Description of items	Unit	Unit Erection Price (in Rs.)
9.1	STRINGING of <b>220 KV D/C transmission line with 06Phase ACSR Zebra Conductor</b> (without OPGW/ Eartwire) complete with all works including stringing of Conductor, Fitting of Hardwares, Hoisting of Insulators etc.	RKM	2,73,954.00
9.2	STRINGING of <b>220 KV M/C transmission line with 12 Phase ACSR Zebra Conductor</b> (without OPGW/ Eartwire) complete with all works including stringing of Conductor, Fitting of Hardwares, Hoisting of Insulators etc.	RKM	4,10,931.00
<b>E</b>	<b>STRINGING - 220 KV - Twin Moose</b>		
9.1	STRINGING of <b>220 KV D/C transmission line with 06 Phase ACSR Twin Moose Conductor</b> (total 12 nos. of Conductor) (without OPGW/ Eartwire) complete with all works including stringing of Conductor, Fitting of Hardwares, Hoisting of Insulators etc.	RKM	5,47,908.00
9.2	STRINGING of <b>220 KV M/C transmission line with 12 Phase ACSR Twin Moose Conductor</b> (total 24 nos. of Conductor) (without OPGW/ Eartwire) complete with all works including stringing of Conductor, Fitting of Hardwares, Hoisting of Insulators etc.	RKM	8,21,862.00
<b>F</b>	<b>DE-STRINGING - 220 KV - Zebra</b>		
9.1	De-Stringing of <b>220 KV S/C transmission line with 03 Phase ACSR Zebra Conductor (without OPGW/ Eartwire)</b> complete in all respect including transportation and handing over the dismantled materials to the BSPTCL Stores.	RKM	77,705.00
9.2	De-Stringing of <b>220 KV D/C transmission line with 06 Phase ACSR Zebra Conductor (without OPGW/ Eartwire)</b> complete in all respect including transportation and handing over the dismantled materials to the BSPTCL Stores.	RKM	1,55,411.00
<b>G</b>	<b>DE-STRINGING - 132 KV - Panther</b>		
9.1	De-Stringing of <b>132 KV S/C transmission line with 03 Phase Panther Conductor (without OPGW/ Eartwire)</b> complete in all respect including transportation and handing over the dismantled materials to the BSPTCL Stores.	RKM	65,479.00
9.2	De-Stringing of <b>132 KV D/C transmission line with 06 Phase Panther Conductor (without OPGW/ Eartwire)</b> complete in all respect including transportation and handing over the dismantled materials to the BSPTCL Stores.	RKM	1,30,958.00
<b>H</b>	<b>STRINGING / DE-STRINGING - Earth-Wire</b>		
9.1	<b>Stringing of Earthwire only for 132 KV/220 KV S/C or D/C transmission line</b> complete in all respect including transportation and handing over the dismantled materials to the BSPTCL Stores.	RKM	22,857.00
9.2	<b>De-Stringing of Earthwire only from 132 KV/220 KV S/C or D/C transmission line</b> complete in all respect including transportation and handing over the dismantled materials to the BSPTCL Stores.	RKM	9,143.00
<b>10</b>	<b>OPGW &amp; Communication</b>		
10.1	<b>Installation/Stringing of 24 F OPGW CABLE</b> complete with all works excluding hardware assemblies and joint boxes (Rate per route KM)	RKM	82,031.00
10.2	Installation of Hardware assembly	Set	12,450.00
10.3	Installation of 24 F Joint Box	Nos	37,932.00
10.4	Installation, Testing & commissioning of complete OPGW and communication equipments	LS	48,046.00



Sl. No.	Description of items	Unit	Unit Erection Price (in Rs.)
<b>10(a)</b>	<b>De-Stringing of OPGW &amp; Communication</b>		
10.1	Un-Installation/ De-Stringing of 24 F OPGW CABLE from 132 KV/220 KV S/C or D/C transmission line complete in all respect including transportation and handing over the dismantled materials to the BSPTCL Stores.	RKM	32,812.00
<b>11</b>	<b>Other Works</b>		
1	Cost Towards Crop Compensation & Tree Cutting & Compensation, PTCC Clearance, All Statutory Clearances, NH/SH/Road Crossing or Any Other Crossing etc. (except Railway Crossing & Forest Clearances) required for succesful commissioning of the complete line in all respect.	RKM	5,50,000.00
2	Forest clearance/ compensation including NPV, Cost of compensatory afforestation etc.	Hectare	13,23,000.00
3	Railway Crossing including Railway Block Charges, Cost of ROW, Required Clearance etc.	Nos. (Per Crossing)	60,00,000.00
<b>12</b>	<b>Pile Foundations Works</b>		
1	Design including Vetting Charges (if any) etc. for Pile Foundations (from CPRI /IIT/NIT/Equivalent)	LS	5,00,000.00
2	Earthing Installation (one set for each location)	Location	92,593.00
3	Bored cast in situ M35 grade R.C.C Pile of 1000mm dia including concrete and excluding reinforcement complete as per drawing and technical specifications including removal of excavated earth using Concrete mixer including transportaion of all materials .	Meter	14,282.00
4	Excavation for Structures (Earth work in excavation of foundation of structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material.) Mechanical Means depth upto 3 m	Cu.M	296.00
5	Cement concrete for reinforced concrete in Pile Cap complete as per drawing and Technical Specification RCC M25 using concrete mixer including transportaion of all materials including Form works	Cu.M	10,300.00
6	PCC 1:3:6 in Foundation (Plain cement concrete 1:3:6 nominal mix in foundation with crushed stone aggregate 20 mm nominal size mechanically mixed, placed in foundation and compacted by vibration including curing for 14 days.) including transportaion of all materials .	Cu.M	7,681.00
7	Supply fitting and placing HYSD bar reinforcement in Foundation complete as per drawing and technical specification	MT	67,665.00
8	Providing steel liner 6/8/10 mm thick for curbs /steining of wells/ pile including fabricating and setting out as per detailed drawing	MT	69,736.00
9	Conducting Standered Penetration Test (SPT) at various elevation in Pile Borehole.	Nos.	2,710.00
10	Conducting integrity Test on Pile.	Nos.	5,092.00

BIHAR STATE POWER TRANSMISSION COMPANY LIMITED				
SCHEDULE OF RATES (SUPPLY AND ERECTION/COMMISSIONING) FOR CONSTRUCTION OF GRID SUB-STATIONS				
(ALL PRICES ARE WITHOUT TAXES AND GST SHALL BE PAID EXTRA AS APPLICABLE)				
Sl. No.	Description of Item	Unit	Unit Supply Price (in Rs.)	Unit Erection price (in Rs.)
<b>A-1</b>	<b>TRANSFORMER</b>			
<b>1.1</b>	200 MVA Three phase power transformer 220/132/33 KV Auto Transformer without oil complete with all accessories, marshalling boxes, terminal connectors etc. with detachable type/portable type on line oil filtration system	Nos.	5,83,51,543.00	8,53,135.00
1.1.1	Transformer oil for the above with 10% extra oil.	Lot	55,58,581.00	76,109.00
1.1.2	Type test charges including service tax etc. to be conducted on only one Transformer	LS	-	2,54,693.00
<b>1.2</b>	160 MVA Three phase power Transformer 220/132/33 KV Auto Transformer without oil Complete with all accessories, marshaling boxes, terminal connectors etc.	Nos.	4,86,26,286.00	8,12,509.00
1.2.1	Transformer oil for the above with 10% extra oil.	Lot	44,46,865.00	60,887.00
1.2.2	Type test charges including service tax etc. to be conducted on only one Transformer	LS	-	2,03,754.00
<b>1.3</b>	80 MVA Three phase 132/33 KV Power Transformer without oil Complete with all accessories, marshaling boxes, terminal connectors etc.	Nos.	2,88,78,902.00	5,27,244.00
1.3.1	Transformer oil for the above with 10% extra oil.	Lot	30,45,552.00	51,426.00
1.3.2	Type test charges including service tax etc. to be conducted on only one Transformer	LS		1,93,920.00
<b>1.4</b>	50 MVA Three phase 132 /33 KV Transformer Complete with all accessories, marshaling boxes, terminal connectors etc.	Nos	2,39,56,640.00	3,91,037.00
1.4.1	Transformer oil for the above with 10% extra oil.	Lot	19,03,470.00	32,141.00
1.4.2	Type test charges including service tax etc. to be conducted on only one Transformer	LS	-	1,83,920.00
<b>1.5</b>	20 MVA Three phase 132 /33 KV Transformer Complete with all accessories, marshaling boxes, terminal connectors etc.	Nos	1,13,00,886.00	3,66,013.00
1.5.1	Transformer oil for the above with 10% extra oil.	Lot	18,27,697.00	23,141.00
1.5.2	Type test charges including service tax etc. to be conducted on only one Transformer	LS	-	1,53,920.00
<b>A-2</b>	<b>LT TRANSFORMER</b>			
1	630 KVA, 33/0.433kV LT transformer with oil, accessories and terminal connectors	Nos.	9,01,286.00	14,810.00
2	315KVA, 33/0.433KV LT, Sub station transformer with terminal connectors	No.	7,17,007.00	14,810.00
<b>B-1</b>	<b>220 kV EQUIPMENT</b>			
1	<b>Circuit breaker (3 phase)</b>			
i)	2500 A, 40 kA SF – 6 CB with support structure, marshalling boxes, terminal connectors etc.(current rating shall be equal to the current rating for which the short cuircuit test reports shall be furnished. (Spring-Spring Mechanism ) (spring- spring )	No	14,29,302.00	18,559.00
2	ISOLATORS (3 phase), with solid core insulators, marshalling boxes, terminal connectors (Motor Operated) with moving contact of HDEC copper only.			
i)	1600 A, 40 kA with two earth switch (Double break Isolator)	Nos.	5,32,636.00	17,099.00
ii)	1600 A, 40 kA with one earth switch (Double break Isolator)	Nos.	4,51,214.00	16,644.00
iii)	1600 A, 40 kA without earth switch (Double break Isolator) (Tandem arrangement)	Nos.	3,75,770.00	16,190.00
iv)	2500 A, 40 kA with two earth switch (Double break Isolator)	Nos.	5,97,010.00	16,190.00
v)	2500 A, 40KA without earth switch double breaker insulator (high level beam mounted) two nos of isolators shall be provided as sectionaliser of 220 KV main bus-1	Nos.	4,10,941.00	16,190.00
3	<b>CURRENT TRANSFORMER 5 Core (1 phase) WITH MARSHALING BOXES TERMINAL CONNECTORS</b>			
i)	1600-800-400-200/1-1-1-1-1 A, 120% extended current rating, 40 kA, 0.2 class 5 core	Nos.	3,23,691.00	4,063.00

Sl. No.	Description of Item	Unit	Unit Supply Price (in Rs.)	Unit Erection price (in Rs.)
ii)	1600-800-400-200/1-1-1-1-1 A, 150% extended current rating, 40 kA, 0.2 class 5 core	Nos.	3,35,664.00	4,063.00
4	220 KV CVT 4400 pF CVTs (1 phase) for phase to phase coupling with all accessories, terminal connectors etc.	Nos.	2,28,152.00	4,063.00
5	216 kV Surge Arresters (1 phase) class-III with terminal connectors.	Nos.	55,724.00	2,254.00
6	Portable discharge rods	Nos.	11,758.00	51.00
<b>B-2</b>	<b>ERECTION HARDWARE (220 kV)</b>			
1.1	Erection Hardware (Without BPI)			
	Insulator strings antifog type & hardware, spacers, conductor (S), Bus bar material, cable trays, bay MB, Clamps, Connectors including, Junction box, PVC pipes for equipment and lighting, all accessories etc. for the following (The main I & main II buses shall be of quad Moose ACSR Conductor & TBC as well as Bus Coupler will be of double Moose conductor.			
	220 kV, Double Main & Transfer bus type			
i	Line bay	set	10,02,089.00	78,665.00
ii	Transformer bay	Set	10,02,089.00	86,179.00
iii	TBC bay	Set	10,02,089.00	74,734.00
iv	BC bay	Set	10,02,089.00	84,378.00
v	Bus (for fourteen bays-10 bays now and 4 bays for future extn) (one no each for main I, main II & transfer bus)	Set	10,02,089.00	1,43,669.00
1.2	220 kV Solid Core, Bus post Insulators (including requirement for wave trap) (break up of quantity to be furnished by bidder)	Nos	24,425.00	604.00
<b>C-1</b>	<b>132 kV EQUIPMENT</b>			
1	Circuit breaker (3 phase)			
i)	1250 A, 31.5 kA SF 6 CB with support structure, marshalling boxes, terminal connectors etc.(current rating shall be equal to the current rating for which the short circuit test reports shall be furnished.) (Spring-Spring )	Nos.	7,17,517.00	13,181.00
2	ISOLATORS (3 phase), with solid core insulators, marshalling boxes, terminal connectors (Motor Operated) with moving contact of HDEC copper only.			
i)	1250 A, 31.5 kA with one earth switch (Double break Isolator)	Nos.	2,71,366.00	12,560.00
ii)	1250 A, 31.5 kA without earth switch (Double break Isolator)	Nos.	2,04,037.00	12,132.00
iii)	1250 A, 31.5 kA without earth switch (Double break Isolator)(Tandem arrangement)	Nos.	2,07,575.00	12,132.00
iv)	1600 A, 31.5 kA without earth switch (Double break high level beam mounted Isolator)	Nos.	2,37,554.00	12,132.00
3	Portable discharge rods ( 1 phase)	Nos.	13,335.00	51.00
4	Current Transformers 5 core (1 phase)			
i)	1200 -600-300-150/1-1-1-1-1 A, 5 core 0.2 class ,31.5 kA with 120% extended current rating with marshalling boxes, terminal connectors etc.	Nos.	2,32,961.00	3,221.00
ii)	600-300-150/1-1-1-1-1 A, 5 core 0.2 class ,31.5 kA with 120% extended current rating with marshalling boxes, terminal connectors etc.	Nos.	2,32,961.00	3,221.00
5	8800 pF CVTs (1 phase) with marshalling boxes, terminal connectors etc .	Nos.	1,83,130.00	3,403.00
6	120 kV Surge arresters class-III ( 1 phase) with marshalling boxes, terminal connectors etc.	Nos.	39,466.00	1,195.00
7	132 KV, 0.2S Class Potential Transformer (1 Ph.)with marshalling boxes, terminal connectors etc.	Nos.	2,81,363.00	4,713.00
<b>C-2</b>	<b>ERECTION HARDWARE (132 kV)</b>			
1.1	Insulator strings antifog type & hardware, spacers, conductor (S), Bus bar material, cable trays, bay MB, Clamps, Connectors including, Junction box, PVC pipes for equipment and lighting, all accessories etc. for the following (main bus shall be of quad Moose conductor and transfer bus shall be strung with double Moose conductor)			
	132 kV Main & Transfer bay			

Sl. No.	Description of Item	Unit	Unit Supply Price (in Rs.)	Unit Erection price (in Rs.)
i	Line bay	Set	4,03,367.00	62,760.00
ii	Transformer bay	Set	4,03,367.00	62,760.00
iii	TBC Bay	Set	4,03,367.00	42,582.00
iv	Bus for fifteen bays(for fifteen bays-10 bays now and 5 bays for future extn) (One for main bus & another for transfer bus)	Set	4,03,367.00	31,640.00
1.2	132 kV Solid Core, Bus post Insulators for erection hardware	Nos.	9,963.00	541.00
<b>D</b>	<b>33 kV EQUIPMENT</b>			
1	Circuit Breaker (3 Phase)			
i)	1250 A, 25KA Vacume CB with support structure, marshalling boxes, terminal connectors etc. (current rating shall be equal to the current rating for which the short circuit test report shall be furnished) (Spring-Spring)	Nos	2,35,755.00	5,551.00
2	ISOLATORS (3 phase), with solid core insulators, marshalling boxes, terminal connectors (Manually operated) with moving contact of HDEC copper only.			
i)	1250 A, 25 kA with one earth switch (Double break Isolator)	Nos.	1,53,754.00	4,510.00
ii)	1250 A, 25 kA without earth switch (Double break Isolator)	Nos.	1,53,754.00	4,510.00
iii)	1250 A, 25 kA without earth switch (Double break Isolator)(Tandem arrangement)	Nos.	1,53,754.00	4,510.00
iv)	2500 A, 25 kA without earth switch (Double break high level beam mounted Isolator)	Nos.	1,53,754.00	4,510.00
3	1200A, Horn gap fuse ( 1 phase)	Nos.	25,665.00	1,426.00
4	Current Transformers (1 phase)			
i)	600-300-150/1 A, 5 core 0.2 class 25 kA with 120% extended current rating with marshalling boxes terminal connectors	Nos.	54,835.00	1,243.00
ii)	1200 -600-300/1A, 5 core 0.2 class 25 kA with 120% extended current rating with marshalling boxes terminal connectors	Nos.	56,466.00	1,243.00
5	33 KV, 0.2 class Potential Transformer (1 phase) with marshalling boxes terminal connectors	Nos.	35,410.00	1,243.00
6	30 kV Surge arresters class 3 ( 1 phase) with marshalling boxes terminal connectors	Nos	10,467.00	4,328.00
7	Portable discharge rods.	Nos.	12,105.00	51.00
8	ERECTION HARDWARE (33 kV)			
	ERECTION HARDWARE without Bus Post Insulators			
8.1	Insulator strings & Hardware Spacers, conductor (s) bus- bar material, cable tray, Bay MB, clamps, connectors including Junction Box, PVC pipes for equipments & lighting, all accessories etc. for the following (The main bus shall be strung with quad moose ACSR conductor & 33 KV main bus shall be of double moose conductor			
i)	Line Bay	Set	1,97,732.00	9,940.00
ii)	Transformer Bay	Set	1,97,732.00	9,997.00
iii)	TBC Bay	Set	1,97,732.00	9,396.00
iv)	Bus (For eighteen bays-13 bays now and 5 bays for future extn)	Set	1,97,732.00	6,607.00
8.2	33 kV Solid core Bus post Insulators for erection hardware	Nos.	2,081.00	469.00
<b>E</b>	<b>LT Switchgear</b>			
i	415 V Main switch Board	Set	15,85,370.00	4,996.00
ii	415 V ACDB (no of feeders shall be as per the requirement of the project plus 20% extra feeders)	Set	13,09,432.00	4,996.00
iii	415V MLDB	Set	10,83,654.00	4,996.00
iv	415V Emergency LDB	Set	5,00,650.00	3,094.00
v	250V DCDB (no of feeders shall be as per the requirement of the project plus 20% extra feeders)	Set	3,00,703.00	4,120.00
vi	48V DCDB	Set	2,54,817.00	3,094.00
<b>F</b>	<b>CONTROL &amp; RELAY PANELS</b>			
1	220 kV (Simplex panels)			
1.1	Control Panel for Two bays. All indicating meters/ multifunctions meters shall be communicable type with 0.5 class accuracy.	Nos	5,14,650.00	3,513.00
1.2 a)	CB relay panel with A/R	Nos.	4,48,021.00	2,829.00

Sl. No.	Description of Item	Unit	Unit Supply Price (in Rs.)	Unit Erection price (in Rs.)
1.2 b)	CB relay panel without A/R	Nos.	3,89,324.00	2,829.00
1.3	Line protection panel with numerical distance protection relays and earth fault / overcurrent relays complying to IEC 61850 Protocol with optical fiber ports sufficient DI/DO ports for scheme with additional 6 DI/DO Ports for spare. All indicating meters/ multifunctions meters shall be communicable type with 0.5 class accuracy.	Nos.	10,34,870.00	2,829.00
1.4	Transformer protection panel HV and LV sides) with numerical differential protection relays with earth fault/ over current relay complying to IEC 61850 Protocol with optical fiber ports and sufficient DI/DO for scheme with additional 6 DI/DO ports for spare.	Nos.	8,93,635.00	2,829.00
1.5	Transfer bus coupler panel with distance protection relay scheme with all relays	Nos.	6,18,010.00	2,829.00
1.6	Bus coupler panel with all necessary relays etc.	Nos.	5,35,371.00	2,829.00
1.7	Bus bar protection panel (bus bar protection will be integrated type and not dishimble type and will have minimum 4 zones with numerical type of relays complying IEC 61850. Protocols as and where applicable.	Set	27,10,572.00	2,829.00
1.8	Time Synchronization equipment will have dual ethernet with RJ-45 port.	Set	2,67,375.00	1,821.00
<b>2</b>	<b>132 kV (Duplex Panels)</b>			
2.1	Control, Relay & Protection Panel for			
a)	132 KV line (with A/R) with numerical distance protection relays and earth fault / overcurrent relays complying to IEC 61850 Protocol with optical fiber ports sufficient DI/DO for scheme with additional 6 DI/DO for spare. All indicating meters/ multifunctions meters shall be communicable tpe with 0.5 class accuracy.	Nos.	11,23,147.00	5,222.00
b)	132/33 KV Transformer (without A/R) with numerical differential protection relays and earth fault / overcurrent relays complying to IEC 61850 Protocol with optical fiber ports sufficient DI/DO for scheme with additional 6 DI/DO for spare.	Nos.	14,15,465.00	5,222.00
c)	132 kV TBC (with A/R) with numerical distance protection relays and earth fault / overcurrent relays complying to IEC 61850 Protocol with optical fiber ports sufficient DI/DO for scheme with additional 6 DI/DO for spare. All indicating meters/ multifunctions meters shall be communicable tpe with 0.5 class accuracy.	Nos.	23,10,963.00	5,222.00
d)	Transformer ( CB relay Panel without A/R )	Nos.	5,80,782.00	5,222.00
<b>3</b>	<b>33 KV CONTROL &amp; RELAY PANELS</b>			
	33 kV Panels (Duplex)			
a)	Control, Relay & Protection Panel for Line with numerical type E.F & O/C relays complying to IEC 61850 protocol	Nos.	6,02,503.00	3,513.00
b)	TBC with numerical type E.F & O/C relays complying to IEC 61850 protocol	Nos.	5,04,211.00	3,513.00
<b>4</b>	<b>Other / common equipment pertaining to C&amp;R system</b>			
i)	Common equipment ( digital voltage and frequency meters for 220 kV , 132 kV and 33 KV system) All indicating meters/ multifunctions meters shall be communicable tpe with 0.5 class accuracy.	Set	21,78,453.00	4,366.00
ii)	Relay test kit (Reputed manufacturer) Megger or Omicron make (Please furnished break upscheduls )	Nos.	27,87,689.00	2,691.00
<b>G</b>	<b>PLCC</b>			
<b>1</b>	<b>For 220 kV system</b>			
1.1	Line Traps 0.5 mH, 1600A 220 KV	No.	3,66,539.00	3,702.00
1.2	Coupling device	No.	1,55,652.00	3,099.00
1.3	HF Cable*	KM	1,59,483.00	8,348.00
1.4	Carrier equipment (for speech + protection + Data)	Nos.	3,93,683.00	4,826.00
1.5	Digital Protection Coupler*	Nos.	1,97,309.00	2,676.00

Sl. No.	Description of Item	Unit	Unit Supply Price (in Rs.)	Unit Erection price (in Rs.)
2	For 132kV system			
2.1	Line Traps			
a)	0.5 mH/1mH, 1250A, 132 kV	Nos.	2,39,482.00	3,196.00
2.2	Coupling device*	Nos.	1,55,652.00	3,099.00
2.3	HF Cable*	KM	1,59,483.00	8,348.00
2.4	Carrier equipment (for speech + protection + Data)	Nos.	3,93,683.00	4,826.00
2.5	Digital Protection Coupler*	Nos.	1,97,309.00	2,676.00
	*Item No. 1.0 to 5.0 above (132 kv PLCC) cover requirement at remote end also)			
2.6	Telephone insutruments - 4 wire with cable	Nos.	1,860.00	460.00
2.7	EPAX (24/8) with 24 telephones, cable etc.	Set	6,08,099.00	3,117.00
2.8	Testing and Maintenance equipment (Print test kit)*(break up schedule to be furnished)	Set	92,264.00	2,601.00
<b>H-1</b>	<b>BATTERIES (VRLA TYPE )</b>			
<b>1.1</b>	<b>250 V</b>			
a)	250V, 300 AH	Sets.	5,64,794.00	13,478.00
b)	250V, 500 AH	Sets.	11,98,926.00	15,679.00
c)	220V ,800 AH	Sets.	18,08,921.00	17,823.00
<b>1.2</b>	<b>48 V</b>			
a)	48V, 300 AH	Sets.	1,05,037.00	12,735.00
b)	48V, 500 AH	Sets.	1,90,937.00	18,304.00
c)	48V, 800 AH	Sets.	2,47,070.00	21,487.00
<b>H-2</b>	<b>BATTERY CHARGER SYSTEM</b>			
<b>1.1</b>	<b>250 V</b>			
a)	250V, 30 A/20 A Float and Float Cum Boost	Set	5,70,219.00	6,771.00
b)	250 V, 60A/50A Float and float Cum Boost Charger	Nos.	3,07,171.00	8,357.00
c)	250 V, 80A/80A Float and float Cum Boost Charger	Nos.	4,32,101.00	13,720.00
<b>1.2</b>	<b>48 V</b>			
a)	48V, 30A/20 A float and Float Cum Boost	Set	3,25,366.00	5,296.00
b)	48 V, 60A/50A Float and float Cum Boost Charger	Nos.	2,52,976.00	9,331.00
c)	48V, 100A Float and float Cum Boost Charger	Nos.	3,85,586.00	14,730.00
I-1	Diesel Generator Set along with control panel (40 kVA)	Set	9,95,070.00	12,497.00
I-2	Diesel Generator Set alongwith Control panel (100 kVA/125 kVA)	Set	12,89,076.00	26,416.00
I-3	Diesel Generator Set alongwith Control panel (250 kVA)	Set	32,69,483.00	91,858.00
I-4	Diesel Generator Set alongwith Control panel (500 kVA)	Set	42,94,169.00	95,619.00
J	Air conditioning of control room with High wall type 5 star rated Split Air conditioner Units of 2 TR capacity with stablizer.	Nos.	60,713.00	5,796.00
K	FIRE PROTECTION SYSTEM			
1.1	Portable Fire Extinguishers			
a	4.5 Kg DCP Type	Nos.	5,302.00	393.00
b	4.5 Kg CO2 Type	Nos.	7,466.00	393.00
c	22.5 Kg CO2 type	Nos.	22,154.00	735.00
d	12 Fire buckets with stand	Nos.	1,605.00	60.00
1.2	Complete pumping arrangement for HVWS system & hydrant system, complete with all piping, valves, fittings, etc. inside pump house. (Pump house separate from control room as well as water storage tank to be constructed)	Set	25,32,887.00	1,31,156.00
1.3	Smoke detection system with all accessories and fittings	Set	4,35,187.00	55,010.00
1.4	Hydrant system with complete U/G & O/G piping & accessories etc. (all items) out side the Pump House. Hydrant system shall cover the switchyard area, Transformers, control room, Stores etc. as per tender specification.	Set	11,64,822.00	1,69,483.00
1.5	Complete HVW spray system with complete O/G & U/G piping and accessories etc. (all items) with all required materials and equipments out side the pump house for 160 MVA, 2 Nos, 220/132/33 KV power transformers as per tender specification.	LS	20,48,553.00	1,03,572.00
1.6	FIRE PROTECTION SYSTEM - 132KV, 80 MVA, 3 PH T/F		7,34,764.00	1,10,215.00
L	ILLUMINATION SYSTEM			
L-1	CONTROL ROOM BUILDING:			
1	Lighting Panel			

Sl. No.	Description of Item	Unit	Unit Supply Price (in Rs.)	Unit Erection price (in Rs.)
a	Lighting Panel (Indoor) Type ACP-1 as per Tech. Specification	Nos.	35,495.00	2,498.00
b	Lighting Panel (Indoor) Type DCP as per Tech. Specification	Nos.	35,577.00	2,498.00
2	Lighting fixtures and receptacles (including accessories/ materials etc. as per requirement like junction box, cable/wires, flexible conduits (if required) from junction box to lighting fixtures, mounting arrangements)			
a	Lighting fixture Type- F1 as per Tech. Specification	Nos.	2,055.00	124.00
b	Lighting fixture Type- FF: as per Tech. Specification	Nos.	2,763.00	124.00
c	Lighting fixture Type- IF: as per Tech. Specification	Nos.	865.00	124.00
d	Lighting fixture Type- FB: as per Tech. Specification	Nos.	853.00	124.00
e	Lighting fixture Type- PF: as per Tech. Specification	Nos.	4,450.00	124.00
f	<b>LED type</b>			
(i)	Lighting fixture Type- F1 as per Tech. Specification (BLRB218 LED+ 2 LED Tubes)	Nos.	1,799.00	435.00
(ii)	Lighting fixture Type- FF: as per Tech. Specification (BZBRSL GX 34W CW)	Nos.	3,263.00	435.00
(iii)	Lighting fixture Type- IF: as per Tech. Specification (BZSLO 18 W LED)	Nos.	1,096.00	435.00
(iv)	Lighting fixture Type- FB: as per Tech. Specification (BICDO 40W LED)	Nos.	2,761.00	435.00
(v)	Lighting fixture Type- PF: as per Tech. Specification (BRTFG 72W LED)	Nos.	6,525.00	435.00
g	5/15 A, 240V: Indoor Receptacles 3 pin type (type RI)	Nos.	1,378.00	124.00
h	15A, 240V: Out door receptacles 2 pole, 3 pin type (Type RO)	Nos.	3,783.00	148.00
i	63A, 415V : Interlocked switch socket outdoor Receptacles (Type RP)	Nos.	14,010.00	432.00
<b>3</b>	<b>Switchboards</b>			
a	Modular switch board with 4 nos. 5Amp. Switches and 1 no. 5/15 Amp. receptacles	Nos.	988.00	141.00
b	Modular switchboard with 6 nos. 5Amp. Switches	Nos.	1,019.00	141.00
c	Modular switchboard with 2 nos. 5Amp. Switches	Nos.	742.00	141.00
d	Modular switchboard with 6 nos. 32 Amp MCB	Nos.	5,445.00	261.00
e	Modular switchboard with 1 no. 32 Amp. MCB	Nos.	1,111.00	261.00
4	Ceiling fans		-	-
a	1400 mm sweep with electronic step regulator	Nos.	2,537.00	251.00
5	Exhaust fans	Nos.	4,164.00	270.00
6	Wall mounted fans 400 mm sweep	Nos.	2,680.00	251.00
<b>7</b>	<b>Conduits &amp; wires</b>			
a	Heavy duty PVC conduits as of 20/25/32 mm size complete with all accessories for point wiring for Light points, Fans power points 5/15 amps. With 2.5 sq.mm/4 mm <sup>2</sup> /6.0 mm <sup>2</sup> copper for circuit wiring and 1.5 mm <sup>2</sup> copper earth wire PVC insulated in green color including wiring for submains i.e. wiring from Lighting panel to switch board.	LS	2,84,232.00	69,488.00
b	Wiring from lighting panel to switch boards, from switchboard to junction boxes for light points with 2.5/4.0/6.0 mm <sup>2</sup> copper wire as per technical specification, complete in all respect. 1.5 mm <sup>2</sup> copper wire (green) will be used for earthing inside conduits	LS	2,88,724.00	56,756.00
c	Telephone sockets			
c.1	Single socket outlet comprising RJ-11 socket	Nos.	593.00	77.00
c.2	Dual socket outlet comprising RJ-45 socket	Nos.	898.00	77.00
8	Junction boxes with 4 nos. of terminal blocks for indoor lighting excluding junction box supplied alongwith lighting fixture	Nos.	4,600.00	211.00
9	Lighting Transformer 40 kVA, 415/415, 3 phase, 50 Hz dry type as per Tech. Specification.	Nos.	3,02,329.00	8,277.00
10	Lighting Transformer 100 kVA, 415/415, 3 phase, 50 Hz dry type as per Tech. Specification.	Nos.	3,45,696.00	12,417.00
11	Self supported aluminium ladder as per technical specification	Nos.	45,732.00	63.00
<b>L-2</b>	<b>FFPH Building</b>			

Sl. No.	Description of Item	Unit	Unit Supply Price (in Rs.)	Unit Erection price (in Rs.)
1	Lighting fixtures and receptacles (including accessories/ materials etc. as per requirement like junction box, cable/wires, flexible conduits (if required) from junction box to lighting fixtures, mounting arrangements)			
a	Lighting fixture Type- F1: as per Tech. Specification	Nos.	2,055.00	124.00
b	Lighting fixture Type- IF: as per Tech. Specification	Nos.	865.00	124.00
c	Lighting fixture Type- FB: as per Tech. Specification	Nos.	853.00	124.00
d	Lighting fixture Type- PF: as per Tech. Specification	Nos.	4,450.00	124.00
e	5/15 A, 240V: Indoor Receptacles 3 pin type (type RI)	Nos.	2,071.00	124.00
2	Switchboards			
a	Modular switch board with 4 nos. 5Amp. Switches and 1 no. 5/15 Amp. receptacles	Nos.	988.00	133.00
b	Modular switchboard with 6 nos. 5Amp. Switches	Nos.	973.00	133.00
c	Modular switchboard with 2 nos. 5Amp. Switches	Nos.	742.00	124.00
3	Ceiling fans			
a	1400 mm sweep with electronic step regulator	Nos.	2,675.00	251.00
4	Exhaust fans	Nos.	4,164.00	441.00
5	Wall mounted fans 400 mm sweep	Nos.	2,634.00	251.00
6	<b>Conduits &amp; wires</b>			
a	Heavy duty PVC conduits as of 20/25/32 mm size complete with all accessories for point wiring for Light points, Fans power points 5/15 amps. With 2.5 sq.mm/4 mm <sup>2</sup> /6.0 mm <sup>2</sup> copper for circuit wiring and 1.5 mm <sup>2</sup> copper earth wire PVC insulated in green color including wiring for submains i.e. wiring from Lighting panel to switch board.	LS	66,257.00	29,083.00
b	Wiring from lighting panel to switch boards, from switchboard to junction boxes for light points with 2.5/4.0/6.0 mm <sup>2</sup> copper wire as per technical specification, complete in all respect. 1.5 mm <sup>2</sup> copper wire (green) will be used for earthing inside conduits	Lot	65,290.00	18,383.00
7	Junction boxes with 4 nos of terminal blocks for indoor lighting excluding junction box supplied alongwith lighting fixtures.	Nos.	4,462.00	211.00
L-3	Outdoor lighting (Switchyard and street lighting)			
1	Lighting panel			
a	Lighting panel (Outdoor) Type ACP - 2	Nos.	38,934.00	2,498.00
b	Lighting panel (Outdoor) Type ACP - 3	Nos.	38,231.00	2,498.00
2	Lighting fixtures and receptacles (including accessories/ materials etc. as per requirement like junction box, cable/wires, flexible conduits (if required) from junction box to lighting fixtures, mounting arrangements)			
a	Lighting fixture Type- SF1: as per Tech. Specification	Nos.	21,041.00	289.00
b	Lighting fixture Type- SF2: as per Tech. Specification	Nos.	12,454.00	289.00
c	Lighting fixture Type- MP: as per Tech. Specification	Nos.	2,813.00	136.00
d	Lighting fixture Type- SC: as per Tech. Specification	Nos.	3,847.00	136.00
e	15A, 240V : Outdoor receptacles 2 pole, 3 pin type (Type RO)	Nos.	3,783.00	195.00
f	63A, 415V: Interlocked switch socket outdoor receptacles (Type RP)	Nos.	14,010.00	489.00
3	Lighting poles Type A1	Nos.	16,415.00	2,893.00
4	Lighting poles Type E1	Nos.	9,029.00	2,300.00
5	Cart wheel mounted aluminium ladder as per Tech. Specification	Nos.	67,651.00	200.00
M	Cables alongwith associated accessories like clamps, glands, lugs and straight joints etc.			
1.1	Power cables (XLPE) 1.1 kV			
a	1C X 630 mm <sup>2</sup>	Km	6,83,001.00	28,749.00
b	3.5C X 300 mm <sup>2</sup>	Km	9,48,399.00	74,500.00
c	3.5C X 150 mm <sup>2</sup>	Km	7,19,659.00	37,250.00
d	3.5C X 95 mm <sup>2</sup>	Km	4,85,380.00	34,250.00
e	1CX300 mm <sup>2</sup>	Km	3,42,577.00	23,649.00
f	1C X 150 mm <sup>2</sup>	Km	2,59,787.00	23,649.00
1.2	Power cables (PVC) 1.1 kV			



Sl. No.	Description of Item	Unit	Unit Supply Price (in Rs.)	Unit Erection price (in Rs.)
a	3.5C X 70 mm <sup>2</sup>	Km	2,32,159.00	34,012.00
b	3.5C X 35 mm <sup>2</sup>	Km	1,78,584.00	27,032.00
c	4C X 16 mm <sup>2</sup>	Km	1,28,148.00	22,326.00
d	4C X 6 mm <sup>2</sup>	Km	88,561.00	18,106.00
e	2C X 6 mm <sup>2</sup>	Km	46,658.00	10,883.00
1.3	Control cable (PVC) 1.1 kV			
a	2C X 2.5 mm <sup>2</sup>	Km	84,208.00	18,357.00
b	3C X 2.5 mm <sup>2</sup>	Km	1,05,218.00	21,428.00
c	5C X 2.5 mm <sup>2</sup>	Km	1,52,876.00	24,106.00
d	7C X 2.5 mm <sup>2</sup>	Km	1,91,657.00	26,806.00
e	10C X 2.5 mm <sup>2</sup>	Km	2,48,493.00	29,463.00
f	14C X 2.5 mm <sup>2</sup>	Km	3,49,376.00	33,481.00
g	19C X 2.5 mm <sup>2</sup>	Km	4,56,005.00	33,481.00
h	27C X 2.5 mm <sup>2</sup>	Km	6,32,366.00	36,159.00
N	Materials for earthing mat with all materials and accessories as well as spikes as per requirement of design as per IEEE standards for complete earthing of grid Sub-Station with the followings. (The quantity is tentative and final quantity will depend on actual design):-			
1	40 mm MS rod for main earth mat	MT	79,388.00	4,823.00
2	75x12 mm G.I Flats for risers for equipments, columns and structures	MT	76,919.00	5,520.00
3	50x6 mm G.I flats for risers for all other equipments etc.	MT	76,919.00	10,478.00
4	Materials for Earthing pits with supply of all earthing materials including base plate.	LS	11,41,008.00	1,71,694.00
O	Sub- Station galvanized Steel structure (220 kV, 132 KV & 33 KV) (The quantity is tentative and final quantity will depend on actual design):-			
1	Lattice structure with fasteners etc.(HT)	MT	80,459.00	2,832.00
2	Lattice structure with fasteners etc.(MS)	MT	77,996.00	2,832.00
3	Standard structure for equipment support (other than CB)-(HT)	MT	80,459.00	2,832.00
4	Standard structure for equipment support (other than CB)-(MS)	MT	77,996.00	2,832.00
5	Pipe Type Structure	MT	80,459.00	2,832.00
P	Cable Racks as per design requirement.	MT	85,580.00	3,486.00
Q	11KV Disc Insulators (120/90KN)	Nos.	674.00	43.00
R	Sub- Station automation system comprising of necessary equipments & materials with networking and interfacing, complete in all respect (Break up of item to be given by contractor in technical data sheet with Part-I of the tender) wherever applicable, the communication protocol shall be preferably IEC61850.	LS	1,30,25,599.00	34,130.00
S	Remote Terminal Unit (minimum 512 points) with all equipments and cabling works required for connecting all 220KV,132KV & 33KV Bays with 20% extra	LS	8,85,855.00	50,697.00
T	Overhead shielding			
1	Overhead shielding against lightning by galvanized steel wires and fittings as per requirement and design (excluding lightning cum lightning mast)	LS	1,82,348.00	24,674.00
2	Lighting cum lightning masts as per design	Sets.	10,38,524.00	39,961.00
3	GI Earthwire	KM	57,910.00	22,857.00
4	Earth Pit (Treated )	Nos.	14,698.00	11,402.00
5	Earth Pit (Non Treated )	Nos.	6,320.00	4,330.00
U	<b>132KV XLPE Cable</b>			
1	132KV grade,1Cx630sqmmXLPE insulated copper cable as per technical specification	Km	89,60,311.00	2,76,887.00
2	Cable termination as per technical specification for interconnection with overhead transmission line for 132KV cables (including support insulators)	Nos.	3,63,190.00	50,440.00
3	Straight Through Joints for 132KV XLPE Cable	Nos.	2,91,032.00	44,358.00
	33KV XLPE Cable			

Sl. No.	Description of Item	Unit	Unit Supply Price (in Rs.)	Unit Erection price (in Rs.)
4	33KV XLPE 1 Core, 630 sqmm cables (from Incomer gantry to outgoing feeder gantry),	Km	17,98,693.00	1,15,942.00
5	33KV Cable Sealing End termination system located at the gantry	Nos.	22,588.00	2,319.00
6	1Cx240 sqmm XLPE cable	Km	35,13,725.00	34,783.00
<b>V</b>	<b>Supply of Godrej make furnitures for Control Room and Office etc.</b>			
1	Chairs	Nos.	27,181.00	-
2	Steel Table	Nos.	16,528.00	-
3	Table with chairs for confrence room with sitting capacity of 8 (eight) persons.	LS	63,951.00	-
4	Godrej B266 make Steel Almira	Nos.	30,617.00	-
<b>W</b>	<b>Mandatory spares for 220/132/33 KV GSS (Break up of L.S items furnished separately in Technical Specification).</b>			
1	220/132/33 kV, 160 MVA Transformer	LS	10,68,869.00	-
2	132/33 KV 50 MVA Transformer	LS	6,11,346.00	-
3	220 kV CB	LS	8,77,266.00	-
4	132 kV CB	LS	3,27,231.00	-
5	33 kV CB	LS	2,02,995.00	-
6	220 kV Isolator	LS	3,74,372.00	-
7	132 kV Isolator	LS	2,12,681.00	-
8	33 KV Isolators	LS	1,27,431.00	-
9	220 kV CT, 1600A, 120% extended current rating	Nos.	3,34,368.00	-
10	220 kV CT, 1600A, 150% extended current rating	Nos.	3,43,725.00	-
11	132 kV CT, 1200A, 120% extended current rating	Nos.	2,14,351.00	-
12	132 KV CT 600A 120% extended	Nos.	1,62,403.00	-
12	33 KV CT, 1200A,	Nos.	53,850.00	-
13	33 KV CT, 600A,	Nos.	57,449.00	-
14	220 kV CVT, 4400 pF	Nos.	2,28,151.00	-
15	132 kV CVT, 8800 pF	Nos.	1,92,287.00	-
16	216 kV surge arrester	Nos.	55,724.00	-
17	120 kV surge arrester	Nos.	39,466.00	-
18	30 kV Surge arresters	Nos.	10,467.00	-
19	C&R Panels	LS	25,69,136.00	-
20	PLCC	LS	12,51,820.00	-
21	LT Transformer, 630 KVA	LS	67,276.00	-
22	Batteries (250V & 48V)	LS	1,50,127.00	-
23	Battery Charger (250 V & 48 V)	LS	2,07,401.00	-
24	DG Set	LS	1,19,206.00	-
25	LT Switchgear	LS	2,91,689.00	-
26	Fire fighting System	LS	2,44,022.00	-
27	Erection Hardware	LS	9,95,966.00	-
28	33 KV Potential Transformer	Nos.	34,643.00	-
29	Illumination	LS	2,56,817.00	-
<b>X</b>	<b>Maintenance &amp; Testing equipment for CB and transformer comprising of the following equipments:</b>			
1	BDV Test kit (2.5/4 mm) - 100 KV Microprocessor based	No.	6,12,925.00	-
2	Megger 5 kV /Insulation tester, Micro processor based of Meggar make	No.	2,48,437.00	-
3	Digital multimeter (3½ digit)	No.	14,185.00	-
4	Oil sampling bottle	Nos.	8,956.00	-
5	Portable SF6 gas refilling device	No.	6,22,373.00	-
6	Capacitance and tan delta kit of Meggar/Eq. make	No.	20,63,169.00	-
7	Transformer winding resistance meter	No.	8,64,565.00	-
8	Automatic Transformer turns ratio meter (Micro processor based) of Meggar make.	No.	7,38,390.00	-
9	Kalfisher Dew point kit for SF6 gas.	No.	6,39,800.00	-
10	SF6 gas evacuating, filtering and drying plant	No.	21,14,201.00	-
11	Transformer oil filtration plant (4 KL / Hr. capacity) complete with all accessories	No.	16,11,464.00	-
12	Circuit breaker analyser	No.	27,35,158.00	-

Sl. No.	Description of Item	Unit	Unit Supply Price (in Rs.)	Unit Erection price (in Rs.)
13	Primary current injection kit	No.	6,89,651.00	-
14	Secondary current injection kit	No.	13,31,965.00	-
15	Relay operation timer	No.	2,54,070.00	-
16	Selective level meter	No	4,13,473.00	-
17	Selective level generator	No.	3,40,073.00	-

<b>BIHAR STATE POWER TRANSMISSION COMPANY LIMITED</b>			
<b>SCHEDULE OF RATES (INSTALLATION /ERECTION) OF 132 KV XLPE CABLES</b>			
<b>(ALL PRICES ARE WITHOUT TAXES AND GST SHALL BE PAID EXTRA AS APPLICABLE)</b>			
<b>Sl. No</b>	<b>DESCRIPTION</b>	<b>Unit</b>	<b>Unit Erection Price (in Rs.)</b>
1	Cable Route Survey, preparation of Cable Route profile, Route alignment, Drawings etc. complete in all respect.	Mtrs.	1,200.00
2	Laying of 132 KV XLPE UG Cable (1Cx 630 Sqmm / 800 Sqmm) including Construction/ excavation of buried Cable Trench including backfilling, Warnig Tape, Route Marker etc. complete in all respect.	Mtrs.	2,900.00
3	Installation of 132 KV Termination Kit with scaffolding arrangement etc. complete in all respect.	Nos.	1,96,873.00
4	Installation of Link Box without Sheath Voltage Limiters (SVL) (Surge Arrestors) along with bonding cable	Nos.	10,000.00
5	Installation of Link Box with Sheath Voltage Limiters (SVL) (Surge Arrestors) along with bonding cable	Nos.	12,000.00
6	Laying/ Installation of Earth continuity Cu. Cable of suitable size (1Cx 240 Sqmm /Equivalent or as suitable) along with necessary connection with both end.	Mtrs.	147.00
7	Construction of Earth Pit including supply of GI Pipes etc.	Nos.	12,000.00
8	Testing & Commissioning - Meggering & Phase Squence etc.	Per Ckt.	60,000.00

BIHAR STATE POWER TRANSMISSION COMPANY LIMITED				
SCHEDULE OF RATES (SUPPLY AND ERECTION) FOR RELAYS, ENERGY METERS, BATTERY, CHARGER ETC.				
(ALL PRICES ARE WITHOUT TAXES AND GST SHALL BE PAID EXTRA AS APPLICABLE)				
Sl. No	DESCRIPTION	Unit	Unit Supply Price (in Rs.)	Unit Erection Price (in Rs.)
1	Distance to fault locator (off line) with Signature Analyzer System suitable for 66 KV to 400 KV EHT line.	Sets	25,06,000.00	-
2	Numerical type differential protection scheme complete with all materials & relays suitable for :			
	(a) 220 KV	Sets	4,55,338.00	16,748.00
	(b) 132 KV	Sets	4,30,235.00	16,748.00
3	Numerical type Distance Protection Scheme with required relays for :			
	(a) 220 KV	Sets	3,08,668.00	14,018.00
	(b) 132 KV	Sets	3,08,668.00	14,018.00
4	Electronic/Static type of Trivector Meter of 0.2S Class.	Nos.	20,790.00	2,607.00
5	Other Supervision Relay.			
	(a) D.C. Supervision Relay.	Nos.	6,300.00	397.00
	(b) A.C. Supervision Relay.	Nos.	6,300.00	397.00
	(c) Trip Circuit Supervision Relay	Nos.	10,300.00	397.00
	(d) Circuit Breaker D.C Supply fail alarm Relay	Nos.	4,400.00	397.00
	(e) Circuit Breaker A.C Supply fail alarm Relay	Nos.	4,400.00	397.00
	(f) VAX-31	Nos.	4,400.00	397.00
	(g) ODS (10 Way)	Nos.	7,121.00	397.00
	(h) Tripping relay	Nos.	10,000.00	397.00
	(i) Under voltage relay	Nos.	4,400.00	397.00
	(j) Under & over frequency relay	Nos.	4,400.00	397.00
	(k) REF relay	Nos.	4,400.00	397.00
	(l) LBB relay	Nos.	4,400.00	397.00
6	Numerical Non-Directional E/F & O/C Relay.	Nos.	40,829.00	6,304.00
7	Numerical type Directional E/F & O/C Relay.	Nos.	54,395.00	6,303.00
8	Master Trip Relay Type:			
	VAJHM - 23	Nos.	6,169.00	397.00
	VAJHM - 33	Nos.	12,866.00	397.00
	VAJHM - 53	Nos.	16,231.00	397.00
9	Aux Relays Type:			
	VAA - 11	Nos.	6,600.00	397.00
	VAA - 12	Nos.	6,600.00	397.00
	VAA - 13	Nos.	6,600.00	397.00
	VAA - 33	Nos.	6,600.00	397.00
10	Electromech Non Directional E/F & O/C Relay CDG-11.	Nos.	6,249.00	567.00
11	Electromech Directional E/F & O/C Relay CDD21	Nos.	22,219.00	567.00
12	TNC Switch.	Nos.	4,260.00	113.00
13	Selector Switch for carrier.	Nos.	1,445.00	113.00
14	Selector Switch for Protection Transfer.	Nos.	7,121.00	113.00
	<b>ABT Meters</b>			
15	3 Phase, 4 wire, 0.2S accuracy class Trivector static Energy ABT Meter (compatible to various protocols like TCP/IP, MODBUS and ICS DLMS)	Nos.	99,625.00	23,608.26
16	3 Phase, 4 wire, 0.2S accuracy class Trivector static Energy non-ABT Meter (compatible to various protocols like TCP/IP, MODBUS and ICS DLMS)	Nos.	99,625.00	23,608.26

Sl. No	DESCRIPTION	Unit	Unit Supply Price (in Rs.)	Unit Erection Price (in Rs.)
17	Metering panel suitable to mount 4 nos of rack mounted meters	Nos.	1,00,550.00	50,354.14
18	DCU with Box as per specification	Sets	1,59,850.00	1,00,376.70
19	Network Switch 8 port 10/100 Mbps	Nos.	10,889.00	1,340.00
20	Router for Grid sub stations	Nos.	97,971.00	16,235.00
21	UPS - 2 KVA online with 60 min back up on 100% load	Nos.	94,494.00	15,928.00
22	Industrial Grade Client PC as per specification	Sets	1,39,125.00	22,365.00
23	7 core 2.5 sq mm armoured control cable for CT connection	Mtrs.	310.00	55.46
24	4 core 2.5 sq mm armoured control cable for PT connection	Mtrs.	197.80	48.38
25	2 core 2.5 sq mm armoured cable for AC/DC Aux supply	Mtrs.	125.70	44.84
26	Communication cable	Mtrs.	38.10	44.84
27	GPRS Modem suitable for AMR of Existing SEM Type energy meter (DLMS-ICS Compliant)	Nos.	4,550.00	6,641.04
28	<b>BATTERIES</b>			
(i)	250 V, 500 AH VRLA (valve-regulated lead-acid battery) TYPE Battery sets with inter cell, inter row, interbank and take off connector for complete with all accessories as indicated in Clause 2.6	Sets.	8,51,666.00	48,814.00
(ii)	250 V, 500 AH TUBULAR TYPE Battery sets with first filling electrolyte (10 % extra) with inter cell, inter row, interbank and take off connector for complete with all accessories as indicated in Clause 2.6	Sets.	10,25,150.00	52,068.00
(iii)	250 V, 300 AH VRLA (valve-regulated lead-acid battery) TYPE Battery sets with inter cell, inter row, interbank and take off connector for complete with all accessories as indicated in Clause 2.6	Sets.	5,47,067.00	48,814.00
(iv)	250 V, 300 AH TUBULAR TYPE Battery sets with first filling electrolyte (10 % extra) with inter cell, inter row, interbank and take off connector for complete with all accessories as indicated in Clause 2.6	Sets.	6,15,090.00	52,068.00
(v)	48 V, 500 AH VRLA (valve-regulated lead-acid battery) TYPE Battery sets with first filling electrolyte (10 % extra) with inter cell, inter row, interbank and take off connector for complete with all accessories as indicated in Clause 2.6	Sets.	1,67,900.00	43,390.00
(vi)	48 V, 500 AH TUBULAR TYPE Battery sets with first filling electrolyte (10 % extra) with inter cell, inter row, interbank and take off connector for complete with all accessories as indicated in Clause 2.6	Sets.	1,96,829.00	43,390.00
(vii)	48 V, 300 AH VRLA (valve-regulated lead-acid battery) TYPE Battery sets with inter cell, inter row, interbank and take off connector for complete with all accessories as indicated in Clause 2.6	Sets.	1,05,037.00	43,390.00
(viii)	48 V, 300 AH TUBULAR TYPE Battery sets with first filling electrolyte (10 % extra) with inter cell, inter row, interbank and take off connector for complete with all accessories as indicated in Clause 2.6	Sets.	1,18,097.00	43,390.00
27	<b>BATTERY CHARGER</b>			
(i)	Battery charging equipment comprising of float & float cum boost charger unit for charging 125 nos cells of 2 volt per cell Battery sets.			

Sl. No	DESCRIPTION	Unit	Unit Supply Price (in Rs.)	Unit Erection Price (in Rs.)
A.	Suitable for charging of VRLA Type battery bank			
a.	250V,60/50 A	Sets.	3,16,081.00	9,220.00
b.	250V, 45/30 A	Sets.	2,53,071.00	9,220.00
B.	Suitable for charging of Tubular Type battery bank			
a.	250V,60/50 A	Sets.	3,33,559.00	9,220.00
b.	250V, 45/30 A	Sets.	2,61,917.00	9,220.00
(ii)	Battery charging equipment comprising of float & float cum boost charger unit for charging 24 nos cells of 2 volt per cell Battery sets.			
A.	Suitable for charging of VRLA Type battery bank			
a.	48 V,60/50 A	Sets.	1,90,884.00	9,220.00
b.	48 V, 45/30 A	Sets.	1,79,603.00	9,220.00
B.	Suitable for charging of Tubular Type battery bank			
a.	48 V,60/50 A	Sets.	1,95,557.00	9,220.00
b.	48 V, 45/30 A	Sets.	1,81,496.00	9,220.00

BIHAR STATE POWER TRANSMISSION COMPANY LIMITED				
SCHEDULE OF RATES (SUPPLY AND SERVICES/ERECTION) OF ULDC WORKS				
(ALL PRICES ARE WITHOUT TAXES AND GST SHALL BE PAID EXTRA AS APPLICABLE)				
Sl. No.	Description of Item	Unit	Unit Supply Price (in Rs.)	Unit Erection Price (in Rs.)
1	<b>RTU base equipment comprising panels, racks, sub-racks, Power Supply modules, Communication Modules, interfacing equipment, required converters &amp; all other required items/accessories including complete wiring for all modules for locations mentioned in Appendix-A</b>	No.	1,01,540.00	50,697.00
(a)	Splitter for RTU Communication	No.	2,423.00	Included in above cost.
(b)	MODEMs	No.	38,763.00	
(d)	Weather sensor	No.	1,20,150.00	
(d)	OLTC transducer	No.	3,730.00	
(e)	Heavy Duty Relay	No.	421.00	
(f)	Contact Multiplying Relay (CMRs)	No.	255.00	
(g)	Multi Function Transducers (MFTs)	No.	4,061.00	
(h)	Supervisory Interface cubicles(SIC) panel for mounting MFTs, relays etc	No.	24,403.00	
(i)	Time Synchronisation equipment without display	No.	52,256.00	
(j)	CPU	No.	38,282.00	
(k)	Analog Input Module	No.	10,877.00	
(l)	Digital Input Module	No.	4,985.00	
(m)	Digital Output Module	No.	5,888.00	
(n)	LDMS system alongwith software	Set	99,734.00	
(i)	Furniture for LDMS system (one table and One chair)	Set	26,871.00	
(ii)	Inverter	No.	46,779.00	
2	<b>Test Equipment for RTU</b>			
(a)	Master Station cum RTU simulator & Protocol Analyser Software tool	No.	9,494.00	4,080.00
(b)	Laptop PC for above software tools alongwith interfacing hardware	No.	1,03,884.00	
3	<b>Cables for each C&amp;R panels connection with RTU</b>			
(a)	Cat 6 for MFT	mts	50.00	27.00
(b)	2.5 mm/14C-DI Hv Side(copper)	mts	333.00	27.00
(c)	2.5 mm/7C-DI Lv Side(copper)	mts	183.00	27.00
(d)	2.5 mm/4C for DO(Trip/Close)(copper)	mts	100.00	27.00
(e)	Conduit	mts	20.00	27.00
4	<b>GPRS based Modem for data connectivity from RTU to SLDC</b>			
(a)	For control centre location			
(i)	Industrial grade 16 port serial server, 230V AC Power Input(19" Rack mount type)	No.	69,049.00	30,889.00
(ii)	Ethernet Module	No.	18,223.00	
(iii)	6U rack	No.	8,500.00	
(b)	For remote location(Grid Sub-stations)			
(i)	RTU site equipments: Industrial grade GPRS based Cellular server, one RS232 Port, one no. 10/100 Ethernet port, IP 30 Protected Case support DTU functions, routing Firewall	No.	21,149.00	30,889.00
(ii)	48V DC to 12V DC Supply	No.	3,909.00	



BIHAR STATE POWER TRANSMISSION COMPANY LIMITED				
SCHEDULE OF RATES (SUPPLY AND SERVICES/ERECTION) OF SLDC/CONTROL CENTRE WORKS				
(ALL PRICES ARE WITHOUT TAXES AND GST SHALL BE PAID EXTRA AS APPLICABLE)				
Sl. No.	Description of Item	Unit	Unit Supply Price (in Rs.)	Unit Erection Price (in Rs.)
<b>A</b>	<b>Software</b>			
1.1	SCADA	Lot	38,45,068.00	Included in Supply.
1.2	ICCP Communication	Lot	3,25,353.00	
1.3	CFE Communication	Lot	3,25,353.00	
1.4	Network Management System	Lot	1,18,310.00	
1.5	Information Storage & Retrieval (ISR)			
(a)	ISR Software	Lot	2,95,775.00	
(b)	Data Historian Software	Lot	4,43,662.00	
(c)	Software for SAN and NAS	Lot	1,55,475.00	
(d)	Report development and Generation Software	Lot	31,334.00	
1.6	EMS Functions			
(i)	Power System Applications			
(a)	State Estimation	Lot	5,91,550.00	
(b)	Contingency Analysis			
(c)	Optimal Power Flow			
(d)	Outage Scheduler			
(e)	Load Forecasting			
(f)	Inflow Forecasting			
1.7	Web Server Application			
(a)	Host based IDS for all machines	Lot	1,15,543.00	
(b)	Software for Data Replica server			
(c)	Software for Centralised Management System	Lot	9,94,719.00	
(d)	Software for Web Server	Lot	88,733.00	
(e)	Anti Virus Software for all machines	Lot	1,18,346.00	
1.8	Database development system (PDS) cum test bench for RTU and ICCP Integration	Lot	2,21,832.00	
1.9	Dispatcher Training Simulator	Lot	4,73,239.00	
1.10	Document Management System	Lot	15,54,754.00	
1.11	Identity Management System			
<b>B</b>	<b>Hardware</b>			
2	Computer System Hardware			
2.1	SCADA Server	No.	2,47,067.10	27,451.90
2.2	EMS applications Server	Incl. in 2.1		
2.3	ISR Server with Auxiliary Memory	No.	8,00,479.80	88,942.20
(a)	Data Historian Sever	Incl. in 2.3		
(b)	SAN Box	No.	7,32,201.30	81,355.70
(c)	<b>SAN Management Server</b>	No.	2,30,202.90	25,578.10
(d)	NAS Box	No.	2,47,822.20	27,535.80
(e)	Tape Library	No.	5,02,228.80	55,803.20
(f)	SAN/NAS LAN	No.	2,51,354.70	27,928.30
2.4	ICCP server	No.	2,47,067.10	27,451.90
2.5	NMS server	No.	2,30,202.90	25,578.10
2.6	CFE Server	No.	2,47,067.10	27,451.90
2.7	Workstation Console			
(a)	Workstation Console integrated with dual Monitors	No.	1,63,691.10	18,187.90
(b)	Workstation Console integrated with single Monitor	No.	1,05,749.10	11,749.90
2.8	<b>LAN Switch</b>			

Sl. No.	Description of Item	Unit	Unit Supply Price (in Rs.)	Unit Erection Price (in Rs.)
(a)	LAN Switch for SCADA/EMS LAN	No.	63,136.80	7,015.20
(b)	LAN switch for Data Acquisition LAN	No.	63,136.80	7,015.20
(c)	LAN switch for PDS LAN	No.	35,590.50	3,954.50
(d)	LAN switch for ICCP LAN	No.	35,590.50	3,954.50
(e)	LAN Switch for External DMZ LAN	No.	35,590.50	3,954.50
(f)	<b>LAN Switch for internal DMZ LAN</b>	No.	35,590.50	3,954.50
(g)	24 Port L-3 LAN Switch for Management LAN	No.	35,590.50	3,954.50
2.9	Laptop for maintenance	No.	1,06,825.50	11,869.50
2.1	WAN Routers with Firewall			
(a)	WAN Router for RTU Communication (4 x G.703 ports configurable upto 2Mbps, 4 Ethernet ports)	No.	2,31,082.20	25,675.80
(b)	WAN Router for ICCP and Remote Consoles Communication (4 x G.703 ports configurable upto 2Mbps, 4 Ethernet ports)	No.	2,31,082.20	25,675.80
2.11	Printers			
(a)	Color Laser Printer	No.	3,82,927.50	42,547.50
(b)	Multi Functional Printer	No.	2,86,544.70	31,838.30
2.12	Time & Frequency System and External displays			
(a)	Time & Frequency System (GPS Based)	Lot	1,53,873.00	17,097.00
(b)	Digital Display for Day	No.	44,348.40	4,927.60
(c)	Digital Display for Time	No.	26,087.40	2,898.60
(d)	Digital Display for Frequency	No.	20,869.20	2,318.80
(e)	Digital Display for Display of ABT Time block	No.	13,767.30	1,529.70
2.13	Web System			
(a)	Web Servers	No.	2,47,067.10	27,451.90
(b)	Firewall with NIPS (Internal)	No.	71,593.20	7,954.80
(c)	Firewall with NIPS (External)	No.	71,593.20	7,954.80
(d)	Centralized Management console	No.	84,296.70	9,366.30
(e)	Data Replica Server	No.	2,30,202.90	25,578.10
(f)	Wan Router cum firewall for connectivity with ISP	No.	1,48,648.50	16,516.50
2.14	PDS and RTU and ICCP integration testing System consisting of			
(a)	PDS Server	Lot	2,47,067.10	27,451.90
(b)	Workstation Console integrated with single Monitor	No.	1,28,138.40	14,237.60
(c)	WAN Router	No.	1,48,648.50	16,516.50
2.15	Video Projection System			
(a)	Video Projection System (70" LED based)	Module	10,61,874.90	1,17,986.10
(b)	Tower type video wall	No.	12,17,606.40	1,35,289.60
2.16	DTS Server	No.	2,47,067.10	27,451.90
2.17	Workstation Dual Screen (Training Console)	No.	1,52,267.40	16,918.60
2.18	42 U Server Rack with KVM switch & Rack mounted Monitor	No.	2,18,529.00	24,281.00
2.19	Remote Consoles with Single Monitor			
(a)	Remote Console with single Screen Monitor	No.	1,24,526.70	13,836.30
(b)	Colour Inkjet printer	No.	23,809.50	2,645.50
(c)	Router cum firewall	No.	1,44,238.50	16,026.50
(d)	Remote console with single 55" Screen Monitor	No.	1,43,144.10	15,904.90
2.21	Identity Server	No.	2,27,385.90	25,265.10
2.22	Server management Console	No.	1,08,890.10	12,098.90

Sl. No.	Description of Item	Unit	Unit Supply Price (in Rs.)	Unit Erection Price (in Rs.)
2.23	Furniture			
(a)	U-type Workstation Desks	Nos.	45,419.00	Included in Supply.
(b)	Workstation Desks	Nos.	30,787.00	
(C)	Chairs	Nos.	5,658.00	
(d)	Fireproof Software storage box	Nos.	10,880.00	
2.24	Video Conferencing system			
(a)	Multi-Point Conferencing Unit	Lot	30,61,691.10	3,40,187.90
(b)	Configuration Laptop with associate Accessories	Set	1,06,825.50	11,869.50
(c)	Video End Points	Lot	3,46,304.70	38,478.30
(d)	HD Camera	No	68,395.50	7,599.50
(e)	Microphone base Station	Set	4,64,455.80	51,606.20
(f)	wireless Microphone	No	23,360.40	2,595.60
(g)	Collar Microphone	No	23,360.40	2,595.60
(h)	LCD Video wall	No	3,56,377.50	39,597.50
(i)	Wall Mounted Line array speakers	No	27,094.50	3,010.50
(j)	Dual Channel Power Amplifiers	No	33,318.00	3,702.00
2.25	16 Port Terminal Servers	Set	43,421.40	4,824.60
2.26	Panel for servers with accessories	Set	34,268.40	3,807.60
<b>C</b>	<b>Auxiliary Power Supply</b>			
4.1	40 kVA (32kW at 0.8 pf) UPS running in parallel	No.	5,63,495.40	62,610.60
4.2	VRLA type Battery banks for above UPS (each bank of 76.8 kVAH)	No.	6,53,538.60	72,615.40
4.3	Input ACDB (150kVA rating)	No.	1,38,425.40	15,380.60
4.4	Output ACDB (100kVA rating)	No.	1,34,623.80	14,958.20
4.5	125 KVA DG Set	No.	6,83,172.00	75,908.00
4.7	Accessories for maintenance of VRLA type batteries	Set	2,86,643.70	31,849.30
4.8	UPS Control/Monitoring console	No.	1,04,571.00	11,619.00
<b>D</b>	<b>Services</b>			
3.1	Integration with control centres on ICCP	Lot	-	10,140.00
3.2	Integration with wams	Lot	-	1,66,280.00
3.3	Integration with the following:			
(a)	Metering applications	Lot	-	83,140.00
(b)	ABT based scheduling software	Lot	-	83,140.00
(c)	Open Access	Lot	-	83,149.00
3.4	Annual maintenance of round the clock comprehensive maintenance of software and hardware maintenance of overall EMS/SCADA System of BSPTCL	Per Year	-	15,67,806.00

BIHAR STATE POWER TRANSMISSION COMPANY LIMITED			
SCHEDULE OF RATES (SUPPLY) OF TELECOM EQUIPMENTS			
(ALL PRICES ARE WITHOUT TAXES AND GST SHALL BE PAID EXTRA AS APPLICABLE)			
Sl. No.	Description of items	Unit	Unit Supply Price (in Rs.)
<b>1</b>	<b>CVT/CC with connecting clamps</b>		
a	400 KV , 4400 pF	No.	3,10,024.00
<b>2</b>	<b>Wavetrap along with connecting clamps, connector, insulators and structure suitable for pedestal mounting etc.</b>		
a	400 kV, 0.5mH, 3000A	No.	3,11,848.00
<b>4</b>	<b>PLCC Panel</b>		
a	Speech+Data	No.	1,68,809.00
5	VFT Modem	No.	1,88,460.00
6	Protection Signalling Equipment	No.	2,72,360.00
7	Two Wire Telephone Set	No.	2,233.00
8	Transducer (MW/MVAR/KV/Frequency)	No.	13,960.00
9	Remote Terminal Unit	No.	11,17,829.00
10	AC/DC Panel Board	No.	69,800.00
11	25sq.mm Multistrand Single Core DC Power Supply Cable	Mtr.	56.00
12	Jelly Filled Armoured Telephone Cable		
a	25 pair	Mtr.	209.00
b	10 pair	Mtr.	98.00
c	5 pair	Mtr.	78.00
13	Selective Level Meter	No.	3,61,293.00
14	Digital Multimeter	No.	1,14,472.00
15	Level Generator/Oscillator	No.	2,75,467.00
16	Frequency Counter	No.	1,11,680.00
17	Dual Trace Oscilloscope	No.	2,23,361.00
18	VHF Transreceiver with battery charger	No.	7,512.00
19	Coupling Device (LMU/LMDU)	No.	1,00,539.28
<b>20</b>	<b>Power Cable</b>	KM	
a	DCPS to DCDB (2Core, 20mm <sup>2</sup> )	KM	69,334.00
b	DCDB to Battery Bank (2 Core, 20mm <sup>2</sup> )	KM	69,334.00
c	DCDB to PLCC Panel (2Core, 2.5 mm <sup>2</sup> )	KM	80,426.85
d	ACDB to PLCC Panel (4 Core, 2.5 mm <sup>2</sup> )	KM	1,09,354.00
e	PLCC Pane to C&R Panel (14 Core,2.5mm <sup>2</sup> )	KM	33,36,86.85
<b>21</b>	<b>Isolation Transformer</b>		
a	Rated capacity minimum 10 kVA	No.	62,967.00
b	Rated capacity minimum 20kVA	No.	92,826.00
<b>22</b>	<b>Earthing for communication equipments</b>	Each	10,346.00
<b>23</b>	<b>Tools &amp; Tackle (Make " TAPARIA"/ Equivalent)</b>		
a	Screw Driver set no. with neon type	Each	250.00
b	Digital line tester	Each	150.00
c	Insulated Cutting Plier	Each	250.00
d	Long Nose Plier 1430 6"	Each	210.00
e	Wire stripping WS06	Each	64.00
f	Double Ended Spanner	set	300.00
g	Small Screw Driver Bit 31 Nose Bit Set BS-31	set	400.00
24	Nut bolts and screw (small size)	Per Lot	100.00
25	Toggle Switches	No.	30.00
26	Push Button switch	No.	30.00
27	3 to 27 v DC buzzer	No.	50.00

Sl. No.	Description of items	Unit	Unit Supply Price (in Rs.)
28	Hookup wire	Mtr.	10.00
29	Flexible wire	Mtr.	10.00
30	PVC Adhesive tape	No.	40.00
31	Solder wire	kg	4,000.00
32	Tweezer	No.	50.00
33	Wire cutter	No.	150.00
34	Multimeter SANWA N-300(Analog)	No.	2,000.00
35	AC millivoltmeter Analog	No.	5,000.00
36	Soldering Iron 65 watt,35 watt	Each	400.00
37	Desoldering wick	kg	1,000.00
38	Digital MultiMeter "FLUKE"/Equivalent make	Each	3,100.00
39	Desoldering Pump "TONY "/Equivalent Make	Each	200.00
40	SMPS based Battery charger of 50A suitable for 48 volt VRLA battery and upgradation facilities	No.	1,04,137.00
41	SMPS based Battery charger of 75A suitable for 48 volt VRLA battery and upgradation facilities	No.	1,19,161.00
42	SMPS based Battery charger of 125A suitable for 48 volt VRLA battery and upgradation facilities	No.	1,53,403.00
43	VRLA BATTERY SET		
a	48V/200AH VRLA Battery	No.	55,115.00
c	48 V/400AH VRLA Battery	No.	1,16,650.00
44	FLOAT CUM BOOST CHARGER (SCR TYPE)		
a	50 V/50Amps	No.	1,38,272.00
b	50 V/75Amps	No.	1,69,614.00
c	50 V/100Amps	No.	1,96,837.00
d	50 V/125Amps	No.	2,16,380.00

<b>BIHAR STATE POWER TRANSMISSION COMPANY LIMITED</b>			
<b>SCHEDULE OF RATES (SERVICES/ERECTION) OF TELECOM WORKS</b>			
<b>(ALL PRICES ARE WITHOUT TAXES AND GST SHALL BE PAID EXTRA AS APPLICABLE)</b>			
<b>Sl. No.</b>	<b>Description of Item</b>	<b>Unit</b>	<b>Unit Erection Price (in Rs.)</b>
1	Erection of Wavetrap		
a	Fixing of Wavetrap on pedastal mounting insulator stack in 400KV	Each	5,795.00
2	Erection of PLCC Panel	Each	6,800.00
3	Erection of LMU	Each	1,000.00
4	Erection of 48V DCDB	Each	7,000.00
5	Erection of 48V DC/50A,35A Charger in 220/132KV	Each	6,800.00
6	Erection of 48V DC/100A Charger in 400KV SS	Each	8,329.00
7	Erection of 16/16 EPBAXs equipment in 400/220/132 KV SS	Each	3,000.00
8	Erection of protection coupler equipment in 400/220/132 KV SS	Each	2,562.00
9	Erection,Commissioning and testing of 48V/200AH,250AH PLCC Battery Set in 132KV and 220KV SS	Each	7,000.00
10	Erection,Commissioning and testing of 48V/400AH PLCC Battery Set in 400KV SS	Each	8,631.00
11	Laying of Coaxial Cable from switchyard gantry tower to communication room in existing trench	KM	15,806.00
12	Laying of 6 pair telephone cable in the trenches in 132KV, 220KV, 400KV	KM	10,000.00
13	Laying of cat 5E/6 cables in offices	KM	6,000.00
14	Laying of cat 5E/6 cables with conduit pipes along with accessories in offices	KM	11,622.00
15	Fixing of 6UX19 inch rack in offices for ERP works	Each	323.00
16	Laying of single pair telephone cable in the trenches in 132KV, 220KV, 400KV	KM	10,000.00
17	Laying of 25 sq.mm battery cable in control room in 132KV, 220KV, 400KV	KM	16,465.00
18	Laying of 6 pair telephone cable on overhead poles LT & HT	KM	10,000.00
19	Laying of single pair telephone cable on overhead poles LT & HT	KM	10,000.00
20	Laying of RF cable in 132KV, 220KV, 400KV SS	KM	15,806.00
21	Digging of 1X1X1 (Cu.mt) ducts for Laying of telephone cable in 132KV, 220KV, 400KV SS	Cu.mt	602.00
22	Excavation, refilling and closing of ducts of 1X1X1 (Cu.mt) in 132KV, 220KV, 400KV premises	Cu.mt	1,204.00
23	Erection of Earth pit as per standards in 132KV, 220KV SS for communication purpose	Each	12,473.00
24	Erection of Earth pit as per standards in 400KV SS	Each	12,473.00
25	Erection of VSAT equipments in 132KV, 220KV, 400KV SS	Each	5,906.00
26	Loading/Unloading of DCDB	Each	1,000.00
27	Loading/Unloading charges of PLCC Panel in 132KV,220KV,400KV SS in to vehicle		
a	Single Channel PLCC Panel	Each	1,000.00
b	Twin Channel PLCC Panel	Each	1,000.00
28	Loading/Unloading charges of PLCC Battery Charger 48v/35A,50A	Each	1,000.00
29	Loading/Unloading charges of PLCC Battery Charger 48v/100A	Each	1,200.00
30	Loading/Unloading charges of 48v PLCC Battery Set		

Sl. No.	Description of Item	Unit	Unit Erection Price (in Rs.)
a	150AH	Each	1,000.00
b	250AH	Each	1,000.00
c	400AH	Each	1,200.00
31	Loading/Unloading charges of LMU	Each	301.00
32	Loading/Unloading charges of EPAXs	Each	301.00
33	Loading/Unloading charges of Wavetrap		
a	132KV	Each	600.00
b	220KV & 400KV	Each	1,000.00
34	Dismantling of DCDB	Each	4,200.00
35	Dismantling of 48V PLCC Battery Charger		
a	35/50A	Each	4,080.00
b	100A	Each	4,165.00
36	Dismantling of 48V/165AH,200AH,250AH PLCC Battery Set	Each	4,200.00
37	Dismantling of 48V/400AH PLCC Battery Set		4,316.00
38	Dismantling of 48V PLCC Panel	Each	4,080.00
39	Dismantling of LMU	Each	600.00
40	Dismantling of EPBAXs	Each	1,800.00
41	Dismantling of Wavetrap		
a	Wavetrap on pedastal mounting insulator stack in 400KV	Each	2,898.00
b	Wavetrap on pedastal mounting insulator stack in 220KV	Each	2,348.00
c	Wavetrap on suspension mounting including jumpering in 132KV	Each	1,400.00
42	Service charges for 48V Battery Charger	per man/day	15,000.00
43	Installation charge of Air Condition	Each	2,500.00
44	Dismantling charge of Air Condition	each	1,500.00
45	Air Condition Maintenance charges		
a	Services charge(indoor and outdoor)	Each	1,000.00
b	Gas Filling Charge	Each	4,000.00
c	Annual Maintenance with all spares	Each	8,000.00
d	Annual Maintenance without spares	Each	5,000.00
46	Battery Set Maintenance Items		
a	Distilled water	liter	15.00
b	petroleum jelly	liter	1,000.00
c	cotton	pcs	40.00
d	maintenance and cleaning labour charge	Each Set	1,000.00

BIHAR STATE POWER TRANSMISSION COMPANY LIMITED			
SCHEDULE OF RATES (SERVICES/ERECTION) OF ULDC/ TELECOM/OPGW WORKS			
(ALL PRICES ARE WITHOUT TAXES AND GST SHALL BE PAID EXTRA AS APPLICABLE)			
Sl. No.	Description of Item	Unit	Unit Erection Price (in Rs.)
1	Laying of optical fibre approach cable in swithyard of 400kV,220kV,132kv including hardware	km	28,574.00
2	Laying of HDPE pipe in trenches in 400kV,220kV,132kv gss	km	10,871.00
3	Laying of 48/24 OPGW cable on 400kV,220kv, 132 kV including splicing fixing of hardware accessories	km	64,016.00
4	<b>Stringing of ADSS type optical fibre cable on 132kV, 220kV line sections:</b>		
i	For plane area	km	30,132.00
ii	For agency or tribal area(25% extra on plane area)	km	37,664.00
iii	For Hill area(40% extra on plane area)	km	42,185.00
iv	For interior area(40% extra on plane area)	km	42,185.00
v	for municipal corporation area(upto 12 km from municipality)(25% extra for plane area)	km	37,664.00
vi	for municipalites (upto 12 km from municipality)(20% extra for plane area)	km	36,158.00
5	Fixing of tension clamp set of OFC on 132kV & 220 kV towers	per set	2,065.00
6	Fixing of suspension clamp set of OFC on 132kV & 220 kV towers	per set	1,701.00
7	Fixing of tension clamp set of OPGW on 400kV lines	per set	2,499.00
8	Fixing of suspension clamp set of OPGW on 400kV lines	per set	2,134.00
9	Fixing of splice box on 132kV & 220 kV towers	each	3,108.00
10	Fixing of splice box on 400kV towers	each	3,885.00
11	Fixing of vibration dampers on 132kV & 220 kV towers	per set	966.00
12	Fixing of vibration dampers on 400 kV towers	per set	1,231.00
13	Splicing charges for OFC fibers laid on 132kV, 220kV, 400 kV lines in plane areas/forest/ Hill areas/ municipal areas separetaly for each		
i	For plane area	each fibre splicing	491.00
ii	For agency or tribal area	each fibre splicing	614.00
iii	For Hill area	each fibre splicing	686.00
iv	For interior area	each fibre splicing	686.00
v	for municipal corporation area(upto 12 km from municipality)	each fibre splicing	614.00
vi	for municipalites (upto 12 km from municipalities)	each fibre splicing	589.00
14	Erection of RCC Joint Chambers	no	4,076.00
15	Blowing(laying) unarmoured UG OFC 24/48 (DWSM) in the existing HDPE duct in the case of underground works	km	22,959.00
16	Fixing of ADSS type Ofc to the tower members with ties , clamps etc		
i	for 220kV/132kV	each	1,695.00
ii	for 400kV	each	2,119.00
iii	Laying of areal type OFC on 33kV/11kV/ HT/LT poles	km	9,982.00
iv	Laying of Cat5E/6 cables	km	7,555.00
v	Laying of Cat5E/6 cables in with conduit pipes along with accessories	each	11,622.00
vi	Fixing of 6U*19 inch rack in offices	each	323.00
17	Loading/unloading charges for RTU/OLTE/Mux equipment	each	904.00
18	<b>Dismantling of RTU/OLTE/Mux equipment:</b>		
i	RTU	each	7,879.00



Sl. No.	Description of Item	Unit	Unit Erection Price (in Rs.)
ii	OLTE/Mux	each	3,100.00
19	Dismantling of 24/48F ADSS cable from 132kV, 220kV S/S line	each	15,066.00
20	Dismantling of 24/48F OPGW cable from 132kV, 220kV, 400kV S/S line	each	32,009.00
21	Dismantling of bringing down splice box on 132kV, 220kV towers	each	1,553.00
22	Dismantling of bringing down splice box on 400kV towers	each	1,942.00
23	Hiring charge of 5 KVA Diesel generator per day for attending OFC break down work	each	917.00
24	Hiring charge of 230V Ac inverter(2kVA) battery back up for attending OFC breakdown work	each	917.00
25	Hiring charge of tent 8*8*10 cubic fit close tent shutter for attending splicing work for attending OFC breakdown work	each	645.00
	<b>UFG cableing works rates</b>		
26	Survey of route providing as built drawing documentation for unarmoured underground optical fibre cable	KM	3,828.00
27	Excavation and Backfilling		
28	All types of soil, road, footpath,including PCC, sand, warning brick/ stone, semi circular RCC split cover etc. For underground fibre optic cable	km	1,53,003.00
29	warning tape including supply and installation	km	22,957.00
30	laying of PLB HDPE pipe O.D. 40mm	km	10,871.00
31	<b>Installation of HDPE pipe by trenchless drigging</b>		
i	0-10 mtrs	mtr	612.00
ii	>10 and upto 30 mtrs	mtr	689.00
iii	More than 30 mtrs	mtr	765.00
32	Laying of GI pipe 100mm nominal bore , including accessories	mtr	195.00
33	laying of RCC hume pipe (NP3), 100mm diameter(inside), including accessories	mtr	292.00
34	Laying of unarmoured underground optical fibre cale 24F DWMSM	km	22,959.00
35	Installation of joint box in underground (including splicing and testing) 24 Fibre	no	4,786.00
36	Erection of RCC Joint Chambers	no	4,076.00
37	Installation of PLB HDPE pipe on wall in building premises including routing of OFC through it	mtr	386.00
38	Reinstatement of excated area/damage (in road, footpath etc.)	sq.mtrs	194.00
39	Erection of RTU panel	No.	14,404.00
40	Erection of OLTE/ MUX	No.	5,669.00
41	Comprehensive Annual maintenance charge of RTU including repair of faulty cards etc.	No.	50,000.00
42	Comprehensive Integration of new bays in the RTU &control centres(Main, Back-up & ERLDC) including supply of MFT, cables, CMR etc /any hardwares	No.	1,00,000.00
43	Comprehensive Integration of new RTU at the control centres (Main, Back-up & ERLDC)	No.	50,000.00
44	Comprehensive annual Maintenance of Wideband system of BSPTCL including repair of faulty cards etc.	No.	1,41,733.00
45	Pre Connectorized Optical fibre Patch Cords(10mtrs)-Pack of six(6) patch cord	Set	11,764.00
46	IP Phone	Nos	6,157.00

Sl. No.	Description of Item	Unit	Unit Erection Price (in Rs.)
47	SOR for Auxiliary Power Supply Equipments		
a	15A SMPS based 48V DC Power Supply (DCPS) System including installation charges	Nos.	1,09,648.00
b	200Ah VRLA type Battery Bankn for above DCPS system including installation charges	Nos.	70,932.00
c	MCCB/MCB-2P/Contactor/Timer/Relay of each type & rating	Set	12,026.00
d	Single Pole MCB( for outgoing DC feeders)	Nos.	496.00
e	Electronic Printed circuit board/ card of each type (all cards/modules including SMPS module, DC Power supply controller, various interface)	set	66,499.00
48	Installation, testing & commissioning of complete communication equipments	Nos	15,651.00
49	Services charges for Engineers on Call Basis for RTU/OPGW/FOTE/GPRS Modem/PLCC etc.		
a	Fixed Cost per call (one time) (Inclusive of Travelling,Boarding,Lodging and fooding charges etc.)	per engineer/ per call	25,000.00
b	Engineer Service charge	per engineer/day	10,000.00

<b>BIHAR STATE POWER TRANSMISSION COMPANY LIMITED</b>			
<b>SCHEDULE OF RATES (SUPPLY) OF GSS/ TRANSMISSION LINE ITEMS FOR O&amp;M WORKS</b>			
<b>(ALL PRICES ARE WITHOUT TAXES AND GST SHALL BE PAID EXTRA AS APPLICABLE)</b>			
<b>Sl. No.</b>	<b>Description of items</b>	<b>Unit</b>	<b>Unit Supply Price (in Rs.)</b>
1	Supply of 33 kV male contact of Isolator 800 A	Nos.	6,700.00
2	Supply of 33 kV male contact of Isolator 1250 A	Nos.	7,700.00
3	Supply of 33 kV female contact of Isolator 1250 A	Nos.	8,200.00
4	Supply of 132 kV female contact of Isolator 1250 A	Nos.	8,700.00
5	Supply of 220 kV female contact of Isolator 1600 A	Nos.	9,700.00
6	Copper terminal plate for 132 kV female contact	Nos.	1,525.00
7	PG clamp for Moose to Moose	Nos.	1,085.00
8	T-connector for Moose to Moose	Nos.	1,050.00
9	Palm connector for Moose to Moose	Nos.	1,478.00
10	PG clamp for Zebra to Zebra	Nos.	825.00
11	T-connector for Zebra to Zebra	Nos.	880.00
12	Palm connector for Zebra to Zebra	Nos.	1,150.00
13	PG clamp for Panther to Panther	Nos.	1,050.00
14	T-connector for Panther to Panther	Nos.	805.00
15	Palm connector for Panther to Panther	Nos.	540.00
16	Single suspension fittings for panther	Nos.	2,250.00
17	Double suspension fittings for panther	Nos.	4,250.00
18	Suspension fittings for Earth wire	Nos.	615.00
19	Double suspension fittings for Zebra	Nos.	5,490.00
20	Single tension fittings for Zebra(Compression type)	Nos.	4,090.00
21	Double tension fittings for Panther(bolted type)	Nos.	4,390.00
22	Mid span joint for panther	Nos.	710.00
23	Mid span joint for Zebra	Nos.	1,065.00
24	Mid span joint for Earth wire	Nos.	320.00
25	T-connector for Zebra to Zebra	Nos.	880.00
26	T-connector for Moose to Panther	Nos.	998.00
27	T-connector for Moose to Dog	Nos.	1,090.00
28	T-connector for Zebra to Dog	Nos.	880.00
29	T-connector for Zebra to Moose	Nos.	1,150.00
30	PG clamp for Zebra to Moose	Nos.	1,050.00
31	PG clamp for Moose to Wolf	Nos.	1,115.00
32	PG clamp for Moose to Wolf(Horizontal)	Nos.	1,115.00
33	220 kV CT connector for zebra conductor with Bronze mounting	Nos.	2,850.00
34	132 kV CT connector for zebra conductor with Bronze mounting	Nos.	2,650.00
35	33 kV CT connector for Moose conductor with Bronze mounting	Nos.	2,850.00
36	33 kV CT connector for Moose conductor T type with Bronze mounting	Nos.	2,850.00
37	33 KV Tripping Coil (with flange)	Nos.	2,200.00
38	132 KV Tripping Coil (with flange)	Nos.	2,200.00
39	33 KV Closing Coil (with flange)	Nos.	2,200.00
40	132 KV Closing Coil (with flange)	Nos.	2,200.00
41	Supply of Silica gel	per kg	375.00
42	Supply of 33 kV cable termination kit for 1CX630 Sq mm copper XLPE	Nos.	5,591.00
43	Tounge tester clamp meter Range 0 to 300 A	Nos.	23,000.00
44	Multimeter range current 0 to 10 A, 60 Mohm, Frequency 60 Hz - 60 MHz	Nos.	12,400.00
45	AC Gas Filling (Charging)	Nos.	2,200.00
46	AC Compressor supply and installation	Nos.	9,500.00
47	Supply of Stabilizer of AC	Nos.	4,580.00

BIHAR STATE POWER TRANSMISSION COMPANY LIMITED			
SCHEDULE OF RATES (SUPPLY) OF GSS/ TRANSMISSION LINE ITEMS FOR O&M WORKS			
(ALL PRICES ARE WITHOUT TAXES AND GST SHALL BE PAID EXTRA AS APPLICABLE)			
Sl. No.	Description of items	Unit	Unit Supply Price (in Rs.)
1	S.S.T 315 KVA 33/0.4 kV	Nos.	5,10,000.00
	S.S.T 630 KVA 33/0.4 kV	Nos.	9,80,000.00
2	<b>Circuit Breaker</b>		
	220KV SF-6 Circuit breaker	sets	11,43,442.00
	132KV SF-6 Circuit breaker	sets	5,81,000.00
	33KV Vacuum Circuit breaker	sets	2,05,000.00
	25KV VCB	sets	1,90,000.00
3	<b>Isolators:-</b>		
	(i) 220KV L/L Isolator With E/S	Nos.	4,51,214.00
	(ii) 220KV L/L tandem Isolator	Nos.	3,75,770.00
	(iii) 220KV H/L Isolator	Nos.	4,10,941.00
	(iv) 132KV L/L Isolator With E/S	Nos.	2,22,600.00
	(v) 132KV L/L Isolator w/o E/S	Nos.	1,76,400.00
	(vi) 132KV H/L Isolator	Nos.	2,20,500.00
	(vii) 33KV L/L Isolator With E/S	Nos.	83,000.00
	(viii) 33KV L/L Isolator w/o E/S	Nos.	70,000.00
	(xi) 33KV H/L Isolator	Nos.	78,000.00
4	<b>LA:-</b>		
	(i) 220KV LA	Nos.	46,152.00
	(ii) 132KV LA	Nos.	26,573.00
	(iii) 33KV LA	Nos.	7,500.00
	(iv) 25 KV LA	Nos.	7,500.00
5	<b>CT:-</b>		
	(i) 220KV 1600/800/400/200/1 A	Nos.	2,58,385.00
	(ii) 220KV 1200/600/300/150/1 A	Nos.	2,50,000.00
	(iii) 132KV 1600/800/400/200/1 A	Nos.	1,36,451.00
	(iv) 132KV 1200/600/300/150/1 A	Nos.	1,32,939.00
	(v) 33KV 1600/800/400/200/1 A	Nos.	59,472.00
	(vi) 33KV 1200/600/300/150/1 A	Nos.	56,522.00
	(vii) 25 kV CT	Nos.	42,162.00
6	<b>PT:-</b>		
	(i) 220KV PT	Nos.	2,16,950.00
	(ii) 132KV PT	Nos.	1,00,000.00
	(iii) 33KV PT	Nos.	39,600.00
	(iv) 25KV PT	Nos.	38,000.00
7	<b>CVT:-</b>		
	220 kV CVT	Nos.	2,00,000.00
	132 kV CVT	Nos.	1,50,000.00
8	Capacitor Bank 12 MVAR		18,60,000.00
9	SF-6 Gas		
	(a) 52 Kg Gas cylinder	Nos.	46,028.00
	(b) 26 Kg Gas Cylinder	Nos.	25,261.00
10	Protective Relays		
	(a) Differential relay	Nos.	1,57,500.00
	(b) Distance prot. Relay	Nos.	1,35,000.00
	(c) O/C & E/F relay	Nos.	94,000.00
11	Control & Relay Panel		

Sl. No.	Description of items	Unit	Unit Supply Price (in Rs.)
	(i) 220/132KV Transformer control & protection Panel	Nos.	13,60,430.00
	(ii) 220 KV Bus coupler control & protection Panel	Nos.	7,52,430.00
	(iii) 220KV Line control & protection panel	Nos.	7,55,430.00
	(iv) 132/33KV Transformer Panel	Nos.	9,07,430.00
	(v) 132 KV Bus coupler control & protection Panel	Nos.	4,04,430.00
	(vi) 132KV Line control & protection panel	Nos.	4,05,430.00
	(vii) 132/25KV Transformer Panel B/C Panel	Nos.	9,00,000.00
	(vii) 25 KV line feeder Panel	Nos.	3,00,000.00
	(viii) 33KV Line control & protection panel	Nos.	3,00,660.00
	(ix) 33KV Bus coupler control & protection panel	Nos.	2,87,660.00
<b>12</b>	<b>Measuring Instrument</b>		
	(a) Digital multimeter	Nos.	12,400.00
	(b) Tongue tester/ Clamp meter	Nos.	23,000.00
	(c) Battery resistance tester	Nos.	2,80,000.00
	(d) Battery specific gravity tester	Nos.	800.00
	(e) IR tester (Megger) 5 KV	Nos.	2,80,000.00
	(f) BDV oil test kit(100KV)	Nos.	6,00,000.00
	(g) Leakage current analyser for surge arrestor(LA)	Nos.	5,69,000.00
	(h) Tower footing impedance/resistance test kit	Nos.	3,04,000.00
	(i) DC earth fault locator	Nos.	2,70,000.00
	(j) Punctured insulator disk detection test kit	Nos.	11,00,000.00
	(k) CT & PT test kit	Nos.	21,41,000.00
	(l) Transformer winding resistance meter	Nos.	3,57,000.00
	(m) Transformer turns ratio meter	Nos.	5,40,000.00
	(n) CB time interval meter	Nos.	1,00,000.00
	(o) Contact resistance meter 100A ( CB, Isolators etc)	Nos.	3,12,000.00
	(p) Digital earth resistance meter	Nos.	91,000.00
	(q) CB analyser with dynamic contact resistance meter(DCRM)	Nos.	22,00,000.00
	(r) Automatic relay test kit	Nos.	25,00,000.00
	(s) Phase sequence meter	Nos.	5,000.00
	(t) sf6 gas leakage detector	Nos.	59,000.00
	(u) sf6 gas refilling device	Nos.	4,90,000.00
	(v) sf6 gas evacuation and, drying, filling plant	Nos.	29,80,000.00
	(w) Thermovision Camera High end	Nos.	23,05,000.00
	(x) Thermovision Camera Low end	Nos.	10,54,000.00
	(y) Capacitance and tan delta test kit	Nos.	23,00,000.00
	(z) Primary current injection test kit upto 1000A	Nos.	4,00,000.00
	(aa) Relay Tool Kit	Nos.	5,50,000.00
<b>13</b>	Rechargeable long range search light model-AEL 5W-LED-5 model	Nos.	21,000.00
	<b>HT Cable &amp; Connector</b>		
<b>14</b>	132kV XLPE Copper Power Cable 1C x 630 sq.mm.	KM	78,07,928.00
<b>15</b>	132kV 1C x 630 sq.mm. Cable End Termination kits	Nos.	2,50,183.00
<b>16</b>	132kV 1C x 630 sq.mm. Cable Jointing kits (Straight Through Joints)	Nos.	2,32,825.00
<b>17</b>	33kV XLPE Copper Power Cable 1C x 630 sq.mm.	KM	37,91,185.00
<b>18</b>	33kV XLPE Copper Power Cable 1C x 240 sq.mm.	KM	28,10,980.00
<b>19</b>	33kV 1C x 630 sq.mm. Cable End Termination kits	Nos.	16,790.00
<b>20</b>	33kV 1C x 240 sq.mm. Cable End Termination kits	Nos.	13,070.00

BIHAR STATE POWER TRANSMISSION COMPANY LIMITED			
SCHEDULE OF RATES FOR MAINTENANCE WORK OF GRID SUB STATION AND TRANSMISSION LINES			
(ALL PRICES ARE WITHOUT TAXES AND GST SHALL BE PAID EXTRA AS APPLICABLE)			
Sl. No.	Name of Work	Unit	Unit Erection Price (in Rs.)
<b>A</b>	<b>GRID SUB STATION</b>		
1	Erection, testing and commissioning of 132 KV SF6 Breakers excluding foundation.	Nos.	35,244.00
2	Erection, testing and commissioning of 132 KV CVT/PT	Nos.	6,266.00
3	Erection of 132 KV LL Isolator	Nos.	9,105.00
4	Erection, testing and commissioning of 132 KV Transformer's control & Relay panel.	Nos.	6,266.00
5	Erection, testing and commissioning of 33 KV VCB	Nos.	13,706.00
6	Erection, testing and commissioning of 33 KV CT	Nos.	2,056.00
7	Erection, testing and commissioning of 33 KV LA	Nos.	1,175.00
8	Erection, testing and commissioning of 33 KV LL Isolator.	Set	2,447.00
9	Erection, testing and commissioning of 220 KV CB	Nos.	83,215.00
10	Erection, testing and commissioning of 220 KV CT	Nos.	8,811.00
11	i) Erection, testing and commissioning of 220 KV Isolator.	Set	9,105.00
	ii) Erection, testing and commissioning of 132 KV Isolator	Set	9,105.00
12	i) Erection, testing and commissioning of 220 KV LA.	Nos.	2,741.00
	ii) Erection, testing and commissioning of 132 KV LA.	Nos.	2,741.00
13	<b>Laying of cables</b>		
	i) 10C X 2.5mm <sup>2</sup> to 18C X 2.5mm <sup>2</sup> and 10C X 6 mm <sup>2</sup>	Per mtr.	33.00
	ii) 2 C X 2.5mm <sup>2</sup> to 4C X 2.5mm <sup>2</sup>	Per mtr.	26.00
14	Erection of Sub-station structure	Per MT	5,384.00
15	Erection of 33 KV Post Insulator	Nos.	1,175.00
16	Jumper connection in GSS.	Per Jumper	113.00
17	Replacement of 33 KV bushing of 33 KV VCB	Nos.	3,280.00
18	Replacement of 132 KV bushing of 145 KV breaker	Nos.	8,517.00
19	Dismantling of Sub-station structures	Per MT	11,748.00
20	Dismantling of cables.	Per mtr.	20.00
21	Improvement of earthing of Sub-station	Per mtr.	36.00
22	Erection, testing and commissioning of 33/0.4KV, 315 KVA Transformer (SST).	1No.	11,258.00
23	Replacement of bus-bar 220/132 KV	Per mtr.	171.00
24	Spray painting of Power Transformers	per sq m	89.80
25	Filtration of Transformer Oil, if m/c supplied by firm	per ltr.	5.68
26	Filtration of Transformer Oil, if m/c is supplied by BSPTCL (25% deduction)	per ltr.	4.26
27	Connection of jumper of HV and LV bushing.	Per Jumper	115.00
28	Erection, testing and commissioning of 10 MVA Power transformer	Nos.	3,49,125.00
29	Dismantling of 10 MVA Power transformer	Nos.	1,96,383.00
30	Dismantling of 20 MVA Power transformer	Nos.	2,28,425.00
31	Dismantling of 50 MVA Power transformer	Nos.	2,63,622.00
32	Dismantling of 100 MVA Power transformer	Nos.	3,16,346.00
33	Dismantling of 150 MVA/160 MVA Power transformer	Nos.	4,87,505.00
34	Construction of Trated Earth Pit (including supply of all materials)	Nos.	26,100.00
35	Replacemnt of Gasket of main tank top cover	Nos.	2,34,000.00
36	Rate for replacement of gasket of the Transformer along with supply of gasket of :		
	a) Radiator	Nos.	5,310.00
	b) HV Bushing	Nos.	11,560.00
	c) LV Bushing	Nos.	6,560.00
	d) HV/LV Neutral Bushing	Nos.	8,750.00

Sl. No.	Name of Work	Unit	Unit Erection Price (in Rs.)
	e) Tertiary bushing	Nos.	5,310.00
	f) Conservator Tank	Nos.	9,060.00
	g) Oil level guage	Nos.	750.00
	h) Silica gel	Nos.	1,250.00
	i) Replacement of gasket of door of marshalling box & OLTC control cable	job	11,250.00
	j) Inspection cover, manhole cover, valves, connecting pipes, Tightening & terminal arrangement of Bucholz relay, OTI, WTI	job	69,710.00
35	Dismantling of GSS Equipments etc.	job	60% of Erection, testing and commissioning Charges mentioned above/ under Turnkey Rates to be considered
<b>B</b>	<b>TRANSMISSION LINES</b>		
1	Replacement of Insulator String in Transmission Lines		
a	In 220 KV lines	Each string	8,003.00
b	In 132 KV lines	Each string	7,203.00
2	Repairing of damaged conductor.	1No.	3,573.00
3	Repairing of broken conductor.	1No.	8,003.00
4	Repairing of cross arm.	1No.	5,336.00
5	Repairing of stub.	1No.	11,307.00
6	Dismantling of tower (including conductor) during tower collapse.	Per MT	14,685.00
7	Erection of Tower	Per MT	5,874.00
8	Fabrication of Tower members	Per MT	7,832.00
9a	Restoration (Opening and closing both) of Jumper in lines.	per jumper	4,000.00
9b	Tightening of jumper of transmission tower	per jumper	2,000.00
10	Replacement of conductor (Including Lowering & Re-stringing both work) Per conductor per span		
a	1 no. Moose conductor	per span	13,273.00
b	1 no. Zebra conductor	per span	10,479.00
c	1 no. Panther conductor	per span	8,382.00
11	Stringing and other associated work of Earth wire	per span	5,963.00
12	Minor repairing of conductors	per conductor	3,231.00
13a	Mobilisation of Labourers	LS	10,769.00
13b	Demobilisation of Labourers	LS	10,769.00
14	Nut-bolts tightening of 220 KV towers	Per Tower	1,520.00
15	Nut-bolts tightening of 132 KV towers	Per Tower	1,220.00
16	Tack welding of the 220 KV towers	Per Tower	2,266.00
17	Tack welding of the 132 KV towers	Per Tower	1,866.00
18	First coat Painting of tower footings including cost of paint & brush	Per Tower	3,979.00
19	Second coat Painting of towers including cost of paint & brush	Per Tower	2,329.00
20	First coat Painting of tower footings without cost of paint & brush	Per Tower	1,115.00
21	Second coat Painting of towers without cost of paint & brush	Per Tower	632.00
22	Rate for ERS installation (Erection, Jointing, Jumpering) per set complete in all respect.	Nos.	1,97,000.00
23	Rate for ERS Dismantling including conductor lowering per set complete in all respect.	Nos.	1,97,000.00

BIHAR STATE POWER TRANSMISSION COMPANY LIMITED									
RATE FOR TRANSPORTATION OF POWER TRANSFORMERS OF VARIOUS CAPACITIES AND OTHER ASSOCIATED WORK.									
(ALL PRICES ARE WITHOUT TAXES AND GST SHALL BE PAID EXTRA AS APPLICABLE)									
Sl. No.	Description	RATES FOR VARIOUS CAPACITIES OF POWER TRANSFORMER - UNIT PRICES (IN RS.)							
		10 MVA	12.5 MVA	20 MVA	50 MVA	80 MVA	100 MVA	150 MVA / 160 MVA	200 MVA
1	Removal from plinth/existing position and dragging of transformer from its position to the point of loading (dragging up to 100 feet).	61000.00	63000.00	66000.00	79000.00	82000.00	85000.00	90000.00	95000.00
2	Dragging of transformers beyond 100 feet. (Rate per feet):								
	(i) Beyond 100 feet upto 300 feet, per feet @ .....	350.00	350.00	350.00	400.00	435.00	475.00	475.00	500.00
	(ii) Beyond 300 feet upto 700 feet, per feet @ .....	330.00	330.00	330.00	375.00	400.00	425.00	425.00	450.00
	(iii) Beyond 700 feet, per feet @ .....	310.00	310.00	310.00	350.00	375.00	400.00	400.00	425.00
3	Unloading of the transformer from Railway wagon and dragging to the point of loading (dragging upto 100 feet).	53000.00	53000.00	53000.00	63000.00	66500.00	70000.00	70000.00	72000.00
4	Loading of transformer on low bed Trailor and making arrangement against skidding & tilting of the transformer from its position during transportation.	50000.00	50000.00	50000.00	60000.00	60000.00	60000.00	65000.00	70000.00
5	Safe transportation of transformer from point of loading to the place of destination (including inter state transportation):								
	(i) Upto first 50 Kms.	60000.00	60000.00	70000.00	88000.00	96000.00	104000.00	115000.00	120000.00
	(ii) Beyond 50 Km upto 150 Kms (rate per Kms).	210.00	210.00	260.00	315.00	330.00	350.00	370.00	400.00
	(iii) Beyond 150 Kms upto 300 Kms (rate per 10 Kms).	2100.00	2100.00	2600.00	3150.00	3325.00	3500.00	3700.00	4000.00
	(iv) Beyond 300 Kms upto 500 Kms (rate per 20 Kms).	4000.00	4000.00	5000.00	6000.00	6250.00	6500.00	7000.00	7500.00
	(v) Beyond 500 Kms (rate per 50 Kms).	8000.00	8000.00	8000.00	9500.00	10000.00	10500.00	11500.00	12000.00
6	Unloading of transformer from low bed trailer and placing safely on wooden sleepers/nearby place.	53000.00	53000.00	56000.00	63000.00	69000.00	75000.00	80000.00	85000.00
7	Removal of transformer from sleepers, dragging (upto 100 feet) and placing it on plinth including fixing and fitting of wheels etc.	56000.00	56000.00	60000.00	71000.00	73000.00	75000.00	85000.00	90000.00
8	Transportation of accessories/fittings etc. per truck (9 MT capacity) per Km including loading & unloading as well as packing of bushing.								
	(i) In side state (Rate per Km).	350.00	350.00	350.00	350.00	350.00	350.00	350.00	350.00
	(ii) Out side state (Inter state) (Rate per Km).	375.00	375.00	375.00	375.00	375.00	375.00	375.00	375.00



## SOR FOR CIVIL WORKS UNDER BSPTCL

Civil Engineering wing of Bihar State Power Transmission Company Limited has under taken various civil construction works. For preparation of DPRs and Estimates under different projects Civil Engineering wing adopts the Schedule of Rates (SOR) of Building Construction Department (BCD), Road Construction Department (RCD), Rural Works Department (RWD), Water Resources Department (WRD) and Public Health Engineering Department (PHED) of Govt. of Bihar. The items for which Rates are not available in the state SORs, the Schedule of Rates of Delhi and CPWD are followed.

These SORs are yearly revised by the concerned departments, which are consequently followed by our company. The SORs adopted by BSPTCL for various civil works can be categorized as follows:

### 1. Grid Sub Stations:

- (a) Construction of Boundary wall -- SOR of BCD (Govt. Of Bihar)
- (b) Earth Filling in premises of GSS- SOR of BCD (Govt. Of Bihar)
- (c) Construction of foundation of Transformers and equipment inside switchyards - SOR of BCD (Govt. Of Bihar)
- (d) Construction of structural buildings such as Residential Quarter, Control Rooms, Inspection Bungalows etc- SOR of BCD & PHED (Govt. Of Bihar & Delhi)
- (e) Construction of RCC and PCC Roads- SOR of RCD& RWD (Govt. Of Bihar)

### 2. Transmission Lines:

- (a) Construction of Foundation of Transmission Towers - SOR of BCD (Govt. Of Bihar)
- (b) Construction Foundation of River Crossing Transmission Line Tower - SOR of BCD (Govt. Of Bihar)

### 3. Other Allied Structures:

- (a) Training Institute Building - SOR of BCD (Govt. Of Bihar)
- (b) Others - As per nature of works