



# BIHAR STATE POWER TRANSMISSION COMPANY LTD., PATNA

(A subsidiary company of Bihar State Power (Holding) Company Ltd., Patna)

CIN – U74110BR2012SGC018889

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Letter No...../ Patna  
CE./Trans.(O&M)/Misc-12/2024

Dated .....

From,

**Deepak Kumar Jha,**  
Chief Engineer, Trans. (O&M)

To,

**GM (F&A), BSPTCL, Patna**  
**Chief Engineer (System Operation)**  
**Chief Engineer (Telecom & OPGW)**  
**Chief Engineer (Planning & Engineering)**  
**Chief Engineer (Project-I)**  
**Chief Engineer (Project-II)**  
**Chief Engineer (O&M)**  
**Chief Engineer (Civil)**  
**Chief Engineer (Training)**  
**GM-cum-CE, TRZ Patna**  
**GM-cum-CE, TRZ Muzaffarpur**  
**GM-cum-CE, TRZ Bhagalpur**  
**Electrical Superintending Engineer, Transmission Circle, Patna (East)/Patna (West)**  
**/Dehri-on-Sone/Bhojpur/Gaya/Biharsharif/Bhagalpur/Begusarai/Purnea/**  
**Muzaffarpur/Hajipur/Darbhanga/Motihari/Saran/Koshi.**

**Sub:** Schedule of Rate (SOR) of BSPTCL for the FY 2024-25

Sir,

This is to inform that the Schedule of Rate (SOR) of BSPTCL for the FY 2024-25 has been approved by competent authority. The same is enclosed for reference and further necessary action.

Yours' faithfully,

Sd/-

(Deepak Kumar Jha)

Chief Engineer, Trans. (O&M)

Dated.....02/07/24...../

Memo No .....315...../

Copy forwarded to DBA/IT , BSPTCL for uploading the SOR on BSPTCL website.

(Deepak Kumar Jha)

Chief Engineer, Trans. (O&M)



# BIHAR STATE POWER TRANSMISSION COMPANY LIMITED

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**PREAMBLE**

1	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.
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	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.
4	Civil Works:-
i)	Rates of civil works are to be taken from curent SOR of BCD, Govt. Of Bihar. If required item rate is not available in SOR of BCD, rate of RCD, Govt. Of Bihar shall be applicable.
ii)	SOR of WRD is applicable for tower protection from flood water/river water.
iii)	For river crossing works, SOR of RCD, GOB shall be applicable.
iv)	If rates are not available in the aforesaid SOR, then rates shall be guided by CPWD SOR.

<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	114,049.95
1.2	Mild steel	MT	110,558.70
1.3	Hexagonal bolts and nuts including Step bolts	MT	145,873.35
1.4	Anti Theft Bolt	MT	145,873.35
<b>2</b>	<b>Tower Earthing</b>		
2.1	Pipe Type	Nos.	9,550.80
<b>3</b>	<b>Tower Accessories</b>		
3.1	Danger Plate	Nos.	450.45
3.2	Number Plate	Nos.	450.45
3.3	Phase Plate (set of 3)	Sets	350.70
3.4	Circuit Plate(set of 2)	Sets	350.70
3.5	Bird Guard (set of 3)	Sets	2,490.60
3.6	Anti Climbing Device	Sets	10,539.90
	<b>132 KV Transmission Lines with ACSR Panther Conductor</b>		
<b>4</b>	<b>CONDUCTOR</b>		
4.1	ACSR Panther Conductor	KM	253,100.40
<b>5</b>	<b>LONG ROD POLYMER INSULATOR</b>		
5.1	Long Rod Polymer Insulator 70 KN of light weight	Nos.	5,163.90
5.2	Long Rod Polymer Insulator 90 KN of light weight	Nos.	5,539.80
<b>6</b>	<b>HARDWARE FITTINGS FOR ACSR PANTHER CONDUCTOR</b>		
6.1	Single Suspension 'I' Fittings	Set	3,341.10
6.2	Single Suspension Pilot Fittings	Set	2,394.00
6.3	Double Suspension Fittings	Set	6,884.85
6.4	Single Tension Fittings	Set	3,552.15
6.5	Double Tension Fittings	Set	7,398.30
<b>7</b>	<b>CONDUCTOR ACCESSORIES FOR ACSR PANTHER CONDUCTOR</b>		
7.1	MSCJ for Conductor	Nos.	959.70
7.2	Repair Sleeve for conductor	Nos.	399.00
7.3	Vibration Damper for conductor	Nos.	994.35
7.4	PA Rod (complete set) for conductor	Nos.	1,334.55
	<b>220 KV Transmission Lines with ACSR Zebra Conductor</b>		
<b>8</b>	<b>CONDUCTOR</b>		
8.1	ACSR Zebra Conductor	KM	436,453.50
<b>9</b>	<b>LONG ROD POLYMER INSULATOR</b>		
9.1	Long Rod Polymer Insulator 90 KN of light weight	Nos.	5,539.80
9.2	Long Rod Polymer Insulator 120 KN of light weight	Nos.	5,914.65
<b>10</b>	<b>HARDWARE FITTINGS FOR ACSR ZEBRA CONDUCTOR</b>		
10.1	Single Suspension 'I' Fittings	Set	3,489.15
10.2	Single Suspension Pilot Fittings	Set	3,122.70
10.3	Double Suspension Fittings	Set	7,250.25
10.4	Single Tension Fittings	Set	4,646.25
10.5	Double Tension Fittings	Set	8,766.45
<b>11</b>	<b>CONDUCTOR ACCESSORIES FOR ACSR ZEBRA CONDUCTOR</b>		
11.1	MSCJ for Conductor	Nos.	1,316.70
11.2	Repair Sleeve for conductor	Nos.	531.30
11.3	Vibration Damper for conductor	Nos.	1,332.45
11.4	PA Rod (complete set) for conductor	Nos.	2,396.10

Sl. No.	Description of items	Unit	Unit Supply Price (in Rs.)
	<b>132/220 KV Transmission Lines with ACSR Moose Conductor</b>		
<b>12</b>	<b>CONDUCTOR</b>	Unit	
12.1	ACSR Moose Conductor	KM	487,792.20
<b>13</b>	<b>LONG ROD POLYMER INSULATOR</b>		
13.1	Long Rod Polymer Insulator 120 KN of light weight	Nos.	7,344.75
13.2	Long Rod Polymer Insulator 160 KN of light weight	Nos.	8,949.15
<b>14</b>	<b>HARDWARE FITTINGS FOR ACSR MOOSE CONDUCTOR</b>		
14.1	Double I Suspension-400kv QUAD Moose	Set	30,273.60
14.2	Single I SUS Pilot -400 kv QUAD Moose	Set	55,191.15
14.3	QUAD Tension String -400 kv QUAD Moose	Set	70,540.05
14.4	Single Suspension 'I' Fittings	Set	5,340.30
14.5	Single Suspension Pilot Fittings	Set	5,340.30
14.6	Double Suspension Fittings	Set	8,808.45
14.7	Single Tension Fittings	Set	17,178.00
14.8	Double Tension Fittings	Set	19,343.10
<b>15</b>	<b>CONDUCTOR ACCESSORIES FOR ACSR MOOSE CONDUCTOR</b>		
15.1	MSCJ for Conductor	Nos.	2,179.80
15.2	Repair Sleeve for conductor	Nos.	782.25
15.3	Vibration Damper for conductor	Nos.	1,688.40
15.4	PA Rod (complete set) for conductor	Nos.	3,145.80
15.5	Bundle Spacer for conductor	Nos.	1,672.65
15.6	Rigid Spacer	Nos.	2,192.40
	<b>132 KV Transmission Lines with HTLS Conductor</b>		
<b>16</b>	<b>HTLS CONDUCTOR</b>		
16.1	HTLS Conductor Capacity - 240 MVA, 1050 A (equivalent to Panther)	KM	1,152,100.00
<b>17</b>	<b>HARDWARE FITTINGS &amp; ACCESSORIES FOR HTLS CONDUCTOR</b>		
17.1	Single Suspension 'I' Fitting w/o Clamp	Set	5,215.00
17.2	Single Suspension Pilot Fittings w/o Clamp	Set	8,029.00
17.3	Double Suspension Fittings w/o Clamp	Set	11,736.00
17.4	Single Tension Fittings w/o Clamp	Set	5,360.00
17.5	Double Tension Fittings w/o Clamp	Set	13,432.00
17.6	Single Suspension Clamp	Set	9,955.00
17.7	Double Suspension Clamp	Set	26,516.00
17.8	Dead End Tension Clamp	Set	63,600.00
17.9	Double Tension Clamp	Set	63,600.00
18	Terminal Pad without Holes	Set	1,980.00
18.1	Terminal Pad with Holes	Set	1,980.00
18.2	MSCJ	Nos.	73,600.00
18.3	Repair Sleeve	Nos.	920.00
18.4	Vibration Damper	Nos.	3,620.00
18.5	Come along clamp	Nos.	121,420.00
	<b>Earth Wire</b>		
<b>19</b>	<b>GI Earthwire</b>		
19.1	GI(7/10) SWG Earth Wire	KM	69,925.80
<b>20</b>	<b>GI Earthwire accessories</b>		
20.1	Mid span compression joint for Earthwire conductor	Nos.	225.75
20.2	Flexible copper bonds for Earthwire	Nos.	771.75
20.3	Vibration damper for earth wire	Nos.	551.25
20.4	Suspension clamp assembly for Earthwire	Set	686.70
20.5	Tension clamp assembly for earthwire	Set	677.25

Sl. No.	Description of items	Unit	Unit Supply Price (in Rs.)
<b>OPGW</b>			
21	24Fibre (DWSM) OPGW FO Cable	Km	191,297.40
21.1	Hardware set for above 24 Fibre OPGW Fibre Optic cabling incl. all cable fittings& accessories except Joint Box	Set	39,073.65
21.2	2/3/4 way Joint Box (24 Fiber) including Coiling bracket as per requirement for looping/coiling of 30 meters of cable as per technical requirement	No.	31,683.75
21.3	48Fibre (DWSM) OPGW FO Cable	Km	200,406.80
21.4	Hardware set for above 48 Fibre OPGW Fibre Optic cabling incl. all cable fittings& accessories except Joint Box	Set	39,073.65
21.5	2/3/4 way Joint Box (48 Fiber) including Coiling bracket as per requirement for looping/coiling of 30 meters of cable as per technical requirement	No.	31,683.75
22	<b>UGFO cabling</b>		
22.1	Unarmoured underground fiber optic cable-48 fibre DWSM	kM	96,049.80
22.2	2/3/4 way Joint Box (48 Fiber) including Coiling bracket as per requirement for looping/coiling of 30 meters of cable as per technical requirement		31,683.75
22.3	Unarmoured underground fiber optic cable-24 fibre DWSM	Km	84,479.85
22.4	2/3/4 way Joint Box (24 Fiber) including Coiling bracket as per requirement for looping/coiling of 30 meters of cable as per technical requirement	No.	5,799.15
23	GI pipe 100mm(nominal bore), medium class including accessories as per technical specification	m	1,030.05
24	RCC hume pipe(NP3), 100mm diameter(inside) including accessories as per technical specification	m	1,174.04
25	PLB HDPE pipe O.D. 40mm including accessories as per technical specification	Km	72,790.28
26	Suspension Assembly (Grounding clamps are part of Suspension assembly )	Set	1,801.80
27	Tension Assembly (Dead end clamps and Grounding clamps are part of Tension assembly )	Set	2,742.60
28	Vibration Dampers for OPGW Cable	Nos.	416.85
29	Downlead clamps	Nos.	191.10
30	<b>FODP</b>		
30.1	FODP 48F Indoor type, rack mounted with FCPC coupling and pigtails	No.	72,483.60
30.2	FODP 96F Indoor type, rack mounted with 32U floor mounted network rack (front & back opening facility & with PDU) and FCPC coupling and pigtails along with panel	Nos.	70,561.05
31	<b>Fibre Optic Approach Cable including Hardware set(like ties, clips, cleats,conduits, ducts supports , fittings)</b>		
31.1	24 Fibre (DWSM)	Km	137,014.50
31.2	48 Fibre(DWSM)	Km	137,014.50
32	Hardware set for 24 Fiber optic approach cable	set	110,533.50
33	Hardware set for 48 Fiber optic approach cable	set	144,028.50
<b>Communication Equipments</b>			
34	<b>SDH Equipment(STM-4 MADM upto 5 MSP protected directions)</b>		
34.1	Base Equipment (Common cards, Cross connect/control cards, Optical base card, Power supply cards, power cabling, other hardware& accessories including sub-racks, patch cords,DDF etc. fully equipped including Cabinet etc. excluding (2)&(3) below)	No.	1,147,815.90
34.2	<b>SDH Equipment(STM-16 MADM upto 3 MSP protected directions)</b>		
34.2.1	Base Equipment (Common cards, Cross connect/control cards, Optical base card, Power supply cards, power cabling, other hardware& accessories including sub-racks, patch cords,DDF etc. fully equipped including Cabinet etc. excluding (2)&(3) below)	No.	840,183.75

Sl. No.	Description of items	Unit	Unit Supply Price (in Rs.)
35	<b>Optical cards</b>		
35.1	S4.1	No.	9,304.83
35.2	L4.1	No.	21,258.30
35.3	L4.2	No.	51,655.80
35.4	Optical Line Interface <150 KM	No.	421,234.24
35.5	Optical Line Interface upto 250 KM	No.	870,664.20
36	<b>Tributary Cards</b>		
36.1	E1 interface card(Min. 32 nos.)	No.	96,322.80
36.2	Ethernet interfaces 10/100 Mbps with Layer-2 switching (Min.16 nos. ports)	No.	107,535.75
37	<b>Drop &amp; Insert Multiplexer</b>	No.	382,231.50
37.1	2 wire (sub/sub) voice channel card	No.	55,902.00
37.2	2 wire (sub/exch) voice channel card	No.	67,597.95
37.3	4 wire E & M Voice channel card	No.	59,872.05
37.4	Asynchronous sub-channel data card	No.	57,450.75
37.5	Synchronous data card N*64 kbps	No.	58,939.65
38	Digital Access cross connect switch (DACS), 16*16 ports matrix , full equipped for minimum 16E-1 ports	No.	365,976.45
39	Equipment cabinets for SDH equipment, primary multiplexer, drop/insert and DACS/ Digital Protection coupler	No.	71,468.25
40	Laptop PC for above software tools alongwith interfacing hardware (Intel Core i7, 16GB RAM,1TB HDD, 15.6" display, Windows-10 professional with licensed MS office and Antivirus (Latest Version)	Nos.	109,078.20
41	<b>Network Manager &amp; Element Manager System</b>		
41.1	Hardware	Set	384,268.50
41.2	Software	Set	34,637.40
41.3	Printer (Laser jet)	No	73,195.50
41.4	Furniture for NMS hardware	No	27,012.30
42	<b>Remote Work Station</b>		
42.1	Hardware	Set	147,322.35
42.2	Software	Set	34,637.40
43	<b>Synchronization Equipment</b>		
43.1	GPS clock including all hardware & accessories	Set	529,589.55
43.2	VOIP telephone with license of existing exchange	Set	48,951.00

BIHAR STATE POWER TRANSMISSION COMPANY LIMITED					
SCHEDULE OF RATES (SUPPLY OF MONOPOLE) FOR CONSTRUCTION OF TRANSMISSION LINES					
(ALL PRICES ARE WITHOUT TAXES AND GST SHALL BE PAID EXTRA AS APPLICABLE)					
S. N.	Description of items	Unit	Weight in kg	Unit Supply Price (in Rs.)	Unit Erection Price
<b>220kV Monopole</b>					
1	Design, Fabrication, Galvanising and supply of transmission line steel monopole including anchor plate, amchor bolt, templates suitable for 220kV D/C line with ACSR zebra conductor having pole type-D/C PC+0 (15 to 30d) with span of 300mtr and bottom cross arm at 15.4 mtr.	EA	13522	3,950,735.25	444,874.50
2	Design, Fabrication, Galvanising and supply of transmission line steel monopole including anchor plate, amchor bolt, templates suitable for 220kV D/C line with ACSR zebra conductor having pole type-D/C PC+6 (15 to 30d) with span of 300mtr and bottom cross arm at 21.4 mtr.	EA	17922	5,295,069.15	603,603.00
3	Design, Fabrication, Galvanising and supply of transmission line steel monopole including anchor plate, amchor bolt, templates suitable for 220kV D/C line with ACSR zebra conductor having pole type-D/C PC+9 (15 to 30d) with span of 300mtr and bottom cross arm at 24.4 mtr.	EA	20812	5,802,795.60	728,122.50
4	Design, Fabrication, Galvanising and supply of transmission line steel monopole including anchor plate, amchor bolt, templates suitable for 220kV D/C line with ACSR zebra conductor having pole type-D/C PA+0 (0d) with span of 300mtr and bottom cross arm at 15.4 mtr.	EA	-	2,733,930.15	444,874.50
5	Design, Fabrication, Galvanising and supply of transmission line steel monopole including anchor plate, amchor bolt, templates suitable for 220kV D/C line with ACSR zebra conductor having pole type-D/C PD+0 (30 to 60d) with span of 300mtr and bottom cross arm at 15.4 mtr.	EA	18618	4,947,130.65	521,230.50
6	Design, Fabrication, Galvanising and supply of transmission line steel monopole including anchor plate, amchor bolt, templates suitable for 220kV D/C line with ACSR zebra conductor having pole type-D/C PD+6 (30 to 60d) with span of 300mtr and bottom cross arm at 21.4 mtr.	EA	25261	6,836,416.65	709,411.50



S. N.	Description of items	Unit	Weight in kg	Unit Supply Price (in Rs.)	Unit Erection Price
7	Design, Fabrication, Galvanising and supply of transmission line steel monopole including anchor plate, anchor bolt, templates suitable for 220kV D/C line with ACSR zebra conductor having pole type-D/C PD+9 (30 to 60d) with span of 300mtr and bottom cross arm at 24.4 mtr.	EA	28243	7,482,893.25	793,107.00
8	Design, Fabrication, Galvanising and supply of transmission line steel monopole including anchor plate, anchor bolt, templates suitable for 220kV D/C line with ACSR zebra conductor having pole type-D/C PE+0 (90d) with span of 300mtr and bottom cross arm at 15.4 mtr.	EA	-	5,738,622.75	771,151.50
9	Design, Fabrication, Galvanising and supply of transmission line steel monopole including anchor plate, anchor bolt, templates suitable for 220kV D/C line with ACSR zebra conductor having pole type-M/C MC+0 (0 to 40d) with span of 200mtr and bottom cross arm at 15.4 mtr.	EA	41760	12,338,842.95	1,305,486.00
10	Design, Fabrication, Galvanising and supply of transmission line steel monopole including anchor plate, anchor bolt, templates suitable for 220kV D/C line with ACSR zebra conductor having pole type-M/C MD+0 (90d) with span of 200mtr and bottom cross arm at 15.4 mtr.	EA	62770	16,801,157.10	2,066,778.00
11	Design, Fabrication, Galvanising and supply of transmission line steel monopole including anchor plate, anchor bolt, templates suitable for 220kV D/C line with ACSR zebra conductor having pole type-M/C MC+3 (0 to 40d) with span of 200mtr and bottom cross arm at 18.4 mtr.	EA	45395	13,287,029.70	1,414,318.50

S. N.	Description of items	Unit	Weight in kg	Unit Supply Price (in Rs.)	Unit Erection Price
	<b>132kV Monopole</b>				
12	DESIGN, FABRICATION, GALVANIZING AND SUPPLY OF TRANSMISSION LINE STEEL MONO POLE INCLUDING ANCHOR PLATE, ANCHOR BOLTS, TEMPLATES SUITABLE FOR 132kV-DC-PC(15-30D)_BXA@30m (SPAN=320M, ACSR PANTHER, OPGW, OLF=1.12, TENSION=22%)	EA	22810	5,915,773.50	1,173,574.50
13	DESIGN, FABRICATION, GALVANIZING AND SUPPLY OF TRANSMISSION LINE STEEL MONO POLE INCLUDING ANCHOR PLATE, ANCHOR BOLTS, TEMPLATES SUITABLE FOR 132kV-DC-PC30(15-30D)_BXA@20m (SPAN=320M, ACSR PANTHER, OPGW, OLF=1.12, TENSION=22%)	EA	15940	4,134,039.00	820,113.00
14	DESIGN, FABRICATION, GALVANIZING AND SUPPLY OF TRANSMISSION LINE STEEL MONO POLE INCLUDING ANCHOR PLATE, ANCHOR BOLTS, TEMPLATES SUITABLE FOR 132kV-DC-PC(15-30D)_BXA@16m (SPAN=320M, ACSR PANTHER, OPGW, OLF=1.12, TENSION=22%)	EA	10280	2,666,118.00	528,906.00
15	DESIGN, FABRICATION, GALVANIZING AND SUPPLY OF TRANSMISSION LINE STEEL MONO POLE INCLUDING ANCHOR PLATE, ANCHOR BOLTS, TEMPLATES SUITABLE FOR 132kV-DC-PC(15-30D)_BXA@13m (SPAN=320M, ACSR PANTHER, OPGW, OLF=1.12, TENSION=22%)	EA	9740	2,526,069.00	501,123.00
16	DESIGN, FABRICATION, GALVANIZING AND SUPPLY OF TRANSMISSION LINE STEEL MONO POLE INCLUDING ANCHOR PLATE, ANCHOR BOLTS, TEMPLATES SUITABLE FOR 132kV-DC-PB(2-15D)_BXA@15m (SPAN=320M, ACSR PANTHER, OPGW, OLF=1.12, TENSION=22%)	EA	9200	2,386,020.00	473,340.00
17	DESIGN, FABRICATION, GALVANIZING AND SUPPLY OF TRANSMISSION LINE STEEL MONO POLE INCLUDING ANCHOR PLATE, ANCHOR BOLTS, TEMPLATES SUITABLE 132kV-DC-PB(2-15D)_BXA@14m (SPAN=320M, ACSR PANTHER, OPGW, OLF=1.12, TENSION=22%)	EA	8680	2,251,158.00	446,586.00

<b>BIHAR STATE POWER TRANSMISSION COMPANY LIMITED</b>			
<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	33,269.25
1.2	Soil Investigation in all kinds of Soil except HR & FR	Location	20,580.00
<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	1,575,000.00
2.1	Proto assembly charges for all types of 132 KV Towers (suitable for Single ACSR Moose Conductor)	LS	2,625,000.00
2.1	Proto assembly charges for all types of 220 KV Towers (suitable for ACSR Zebra Conductor)	LS	2,520,000.00
2.1	Proto assembly charges for all types of 220 KV Towers (suitable for Twin ACSR Moose Conductor)	LS	4,565,217.30
2.2.A	Type test charges for ACSR Panther Conductor	LS	56,298.90
2.2.B	Type test charges for ACSR Zebra Conductor	LS	342,120.45
2.2.C	Type test charges for ACSR Moose Conductor	LS	376,331.55
2.2.D	Type test charges for HTLS Conductor	LS	413,964.60
2.3	Type test charges for Long Rod Polymer Insulator	LS	889,297.50
2.4	Type test charges for Hardware Fittings	LS	335,734.35
2.5	Type test charges for Conductor Accessories	LS	488,190.15
<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	17,106.60
<b>4</b>	<b>Tower Earthing</b>		
4.1	Pipe Type	Nos.	5,565.00
<b>5</b>	<b>Tower Accessories</b>		
5.1	Danger Plate	Nos.	115.50
5.2	Number Plate	Nos.	115.50
5.3	Phase Plate (set of 3)	Sets	115.50
5.4	Circuit Plate(set of 2)	Sets	115.50
5.5	Bird Guard (set of 3)	Sets	346.50
5.6	Anti Climbing Device	Sets	2,205.00
<b>6</b>	<b>STRINGING</b>		
<b>A</b>	<b>STRINGING - 132 KV - Panther</b>		
6.1	STRINGING of 132 KV S/C DCSS transmission line with 03 Phase ACSR Panther Conductor (without OPGW/ Eartwire) complete with all works including stringing of Conductor, Fitting of Hardwares, Hoisting of Insulators etc.	RKM	137,997.30
6.1(a)	STRINGING of 132 KV S/C DCSS transmission line with 02 Phase ACSR Panther Conductor (without OPGW/ Eartwire) complete with all works including stringing of Conductor, Fitting of Hardwares, Hoisting of Insulators etc.	RKM	93,840.60
6.2	2nd Circuit STRINGING (without 1st Circuit Live) of 132 KV S/C DCSS transmission line with 03 Phase ACSR Panther Conductor (without OPGW/ Eartwire) complete with all works including stringing of Conductor, Fitting of Hardwares, Hoisting of Insulators etc.	RKM	137,997.30

6.2(a)	2nd Circuit STRINGING (with 1st Circuit Live) of 132 KV S/C DCSS transmission line with 03 Phase ACSR Panther Conductor (without OPGW/ Eartwire) complete with all works including stringing of Conductor, Fitting of Hardwares, Hoisting of Insulators etc.	RKM	344,996.40
6.3	STRINGING of 132 KV D/C transmission line with 06 Phase ACSR Panther Conductor (without OPGW/ Eartwire) complete with all works including stringing of Conductor, Fitting of Hardwares, Hoisting of Insulators etc.	RKM	275,997.75
6.4	STRINGING of 132 KV M/C transmission line with 12 Phase ACSR Panther Conductor complete with all works including stringing of Conductor, Fitting of Hardwares, Hoisting of Insulators etc.	RKM	413,997.15
<b>B</b>	<b>STRINGING - 132 KV - Single Moose</b>		
6.1	STRINGING of 132 KV D/C transmission line with 06 Phase ACSR Moose Conductor (without OPGW/ Eartwire) complete with all works including stringing of Conductor, Fitting of Hardwares, Hoisting of Insulators etc.	RKM	413,997.15
<b>C1</b>	<b>STRINGING - 132 KV - HTLS</b>		
6.1	STRINGING of 132 KV D/C transmission line with 06 Phase HTLS Conductor (without OPGW/ Eartwire) complete with all works including stringing of Conductor, Fitting of Hardwares, Hoisting of Insulators etc.	RKM	959,011.50
6.2	Reconductoring of 132 KV S/C transmission line with 03 Phase HTLS Conductor (without OPGW/ Eartwire) complete with all works including stringing of Conductor, Fitting of Hardwares, Hoisting of Insulators etc.	RKM	639,339.00
6.3	Reconductoring of 132 KV D/C transmission line with 06 Phase HTLS Conductor (without OPGW/ Eartwire) complete with all works including stringing of Conductor, Fitting of Hardwares, Hoisting of Insulators etc.	RKM	959,013.00
<b>C2</b>	<b>STRINGING - 220 KV - HTLS</b>		
6.1	De-Stringing of 220 KV D/C transmission line with 06 Phase ACSR Zebra Conductor (without OPGW/ Eartwire) complete in all respect. The contractor shall retain the dismantled materials with them .The tenderer shall quote the rates in bid adusting the scrap value of dismantled materials.	RKM	276,700.00
6.2	De-Stringing of 220 KV S/C transmission line with 03 Phase ACSR Zebra Conductor (without OPGW/ Eartwire) complete in all respect. The contractor shall retain the dismantled materials with them .The tenderer shall quote the rates in bid adusting the scrap value of dismantled materials.	CKM	138,400.00
6.3	STRINGING of 220 KV D/C transmission line with 06 Phase HTLS Conductor ( With re-sagging of OPGW / Earthwire) complete with all works including stringing of Conductor, Fitting of Hardwares, Hoisting of Insulators etc.	RKM	2,569,400.00
6.4	STRINGING of 220 KV S/C transmission line with 03 Phase HTLS Conductor ( With re-sagging of OPGW / Earthwire) complete with all works including stringing of Conductor, Fitting of Hardwares, Hoisting of Insulators etc.	CKM	1,284,700.00

<b>D</b>	<b>STRINGING - 220 KV - Zebra</b>		
6.1	STRINGING of 220 KV D/C transmission line with 06Phase ACSR Zebra Conductor (without OPGW/ Eartwire) complete with all works including stringing of Conductor, Fitting of Hardwares, Hoisting of Insulators etc.	RKM	330,799.35
6.2	STRINGING of 220 KV M/C transmission line with 12 Phase ACSR Zebra Conductor (without OPGW/ Eartwire) complete with all works including stringing of Conductor, Fitting of Hardwares, Hoisting of Insulators etc.	RKM	496,198.50
<b>E</b>	<b>STRINGING - 220 KV - Twin Moose</b>		
6.1	STRINGING of 220 KV D/C transmission line with 06 Phase ACSR Twin Moose Conductor (total 12 nos. of Conductor) (without OPGW/ Eartwire) complete with all works including stringing of Conductor, Fitting of Hardwares, Hoisting of Insulators etc.	RKM	661,598.70
6.2	STRINGING of 220 KV M/C transmission line with 12 Phase ACSR Twin Moose Conductor (total 24 nos. of Conductor) (without OPGW/ Eartwire) complete with all works including stringing of Conductor, Fitting of Hardwares, Hoisting of Insulators etc.	RKM	992,398.05
<b>F</b>	<b>DE-STRINGING - 220 KV - Zebra</b>		
6.1	De-Stringing of 220 KV S/C transmission line with 03 Phase ACSR Zebra Conductor (without OPGW/ Eartwire) complete in all respect including transportation and handing over the dismantled materials to the BSPTCL Stores.	RKM	93,828.00
6.2	De-Stringing of 220 KV D/C transmission line with 06 Phase ACSR Zebra Conductor (without OPGW/ Eartwire) complete in all respect including transportation and handing over the dismantled materials to the BSPTCL Stores.	RKM	187,658.10
<b>G</b>	<b>DE-STRINGING - 132 KV - Panther</b>		
6.1	De-Stringing of 132 KV S/C transmission line with 03 Phase Panther Conductor (without OPGW/ Eartwire) complete in all respect including transportation and handing over the dismantled materials to the BSPTCL Stores.	RKM	79,065.00
6.2	De-Stringing of 132 KV D/C transmission line with 06 Phase Panther Conductor (without OPGW/ Eartwire) complete in all respect including transportation and handing over the dismantled materials to the BSPTCL Stores.	RKM	158,130.00
<b>H</b>	<b>STRINGING / DE-STRINGING - Earth-Wire</b>		
6.1	Stringing of Earthwire only for 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	27,599.25
6.2	De-Stringing of Earthwire only 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	11,039.70
<b>7</b>	<b>OPGW &amp; Communication</b>		
7.1	Installation/Stringing of 24 F OPGW CABLE complete with all works excluding hardware assemblies and joint boxes (Rate per route KM)	RKM	99,051.75
7.2	Installation of Hardware assembly	Set	15,032.85
7.3	Installation of 24 F Joint Box	Nos	45,802.05
7.4	Installation, Testing & commissioning of complete OPGW and communication equipments	LS	58,014.60

<b>7(a)</b>	<b>De-Stringing of OPGW &amp; Communication</b>		
7.1	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	39,620.70
<b>8</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	664,125.00
2	Forest clearance/ compensation including NPV, Cost of compensatory afforestation etc.	Hectare	1,597,522.50
3	Railway Crossing including Railway Block Charges, Cost of ROW, Required Clearance etc.	Nos. (Per Crossing)	7,245,000.00

<b>BIHAR STATE POWER TRANSMISSION COMPANY LIMITED</b>				
<b>SCHEDULE OF RATES (SUPPLY AND ERECTION/COMMISSIONING) FOR CONSTRUCTION OF GRID SUB-STATIONS</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 Supply Price (in Rs.)</b>	<b>Unit Erection price (in Rs.)</b>
<b>A-1</b>	<b>TRANSFORMER</b>			
	500 MVA Three phase power transformer 400/220/33 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.	249,614,561.00	1,375,000.00
	Transformer oil for the above with 10% extra oil.	Lot	18,428,459.00	906,125.00
	Type test charges including service tax etc. to be conducted on only one Transformer	LS		486,564.75
<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.	111,061,341.00	1,030,160.25
1.1.1	Transformer oil for the above with 10% extra oil.	Lot	12,444,415.00	617,100.00
1.1.2	Type test charges including service tax etc. to be conducted on only one Transformer	LS		307,540.80
<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.	98,155,750.00	1,023,760.50
1.2.1	Transformer oil for the above with 10% extra oil.	Lot	8,951,350.00	562,837.00
1.2.2	Type test charges including service tax etc. to be conducted on only one Transformer	LS		246,033.90
<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.	72,000,000.00	636,646.50
1.3.1	Transformer oil for the above with 10% extra oil.	Lot	5,944,050.00	300,000.00
1.3.2	Type test charges including service tax etc. to be conducted on only one Transformer	LS		234,158.40
<b>1.4</b>	50 MVA Three phase 132 /33 KV Transformer Complete with all accessories, marshaling boxes, terminal connectors etc.	Nos	40,750,243.80	472,176.60
1.4.1	Transformer oil for the above with 10% extra oil.	Lot	2,865,496.20	38,810.10
1.4.2	Type test charges including service tax etc. to be conducted on only one Transformer	LS		222,083.40
<b>A-2</b>	<b>LT TRANSFORMER</b>			
1	630 KVA, 33/0.433kV LT transformer with oil, accessories and terminal connectors	Nos.	1,533,087.15	17,883.60
2	315KVA, 33/0.433KV LT, Sub station transformer with terminal connectors	No.	1,219,628.55	17,883.60

Sl. No.	Description of Item	Unit	Unit Supply Price (in Rs.)	Unit Erection price (in Rs.)
<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	1,923,673.50	22,409.10
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.	716,864.40	20,647.04
ii)	1600 A, 40 kA with one earth switch (Double break Isolator)	Nos.	607,280.10	20,097.63
iii)	1600 A, 40 kA without earth switch (Double break Isolator) (Tandem arrangement)	Nos.	505,741.95	19,549.43
iv)	2500 A, 40 kA with two earth switch (Double break Isolator)	Nos.	803,504.10	19,549.43
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.	553,077.00	19,549.43
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, 0.2S class 5 core	Nos.	469,006.65	4,906.07
ii)	1600-800-400-200/1-1-1-1-1 A, 150% extended current rating, 40 kA, 0.2S class 5 core	Nos.	486,354.75	4,906.07
4	220 KV CVT 4400 pF CVTs (1 phase) for phase to phase coupling with all accessories, terminal connectors etc.	Nos.	330,576.75	4,906.07
5	216 kV Surge Arresters (1 phase) class-III with terminal connectors.	Nos.	72,551.85	2,721.71
6	Portable discharge rods	Nos.	14,910.00	61.58
<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	1,545,716.55	94,987.99
ii	Transformer bay	Set	1,774,956.75	104,061.14
iii	TBC bay	Set	1,714,742.40	90,241.31
iv	BC bay	Set	1,851,355.80	101,886.44
v	Bus (for fourteen bays-10 bays now and 4 bays for future extn) (one no each for main I, main II & trasfer bus)	Set	1,539,485.85	173,480.32



Sl. No.	Description of Item	Unit	Unit Supply Price (in Rs.)	Unit Erection price (in Rs.)
1.2	220 kV Solid Core, Bus post Insulators (including requirement for wave trap) (break up of quantity to be furnished by bidder)	Nos	31,887.45	729.33
<b>C-1</b>	<b>132 kV EQUIPMENT</b>			
1	Circuit breaker (3 phase)			
i)	1250 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 circuit test reports shall be furnished.) (Spring- Spring )	Nos.	1,011,677.70	16,673.97
i)a	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.	965,692.35	15,916.06
2	ISOLATORS (3 phase), with solid core insulators, marshaling boxes, terminal connectors (Motor Operated) with moving contact of HDEC copper only.			
i)	1250 A, 40 kA with one earth switch (Double break Isolator)	Nos.	382,617.40	15,888.40
i)a	1250 A, 31.5 kA with one earth switch (Double break Isolator)	Nos.	365,225.70	15,166.20
ii)	1250 A, 40 kA without earth switch (Double break Isolator)	Nos.	287,686.30	15,346.98
ii)a	1250 A, 31.5 kA without earth switch (Double break Isolator)	Nos.	274,609.65	14,649.39
iii)	1250 A, 40 kA without earth switch (Double break Isolator)(Tandem arrangement)	Nos.	292,673.70	15,346.98
iii)a	1250 A, 31.5 kA without earth switch (Double break Isolator)(Tandem arrangement)	Nos.	279,370.35	14,649.39
iv)	1600 A, 40 kA without earth switch (Double break high level beam mounted Isolator)	Nos.	334,943.40	15,346.98
iv)a	1600 A, 31.5 kA without earth switch (Double break high level beam mounted Isolator)	Nos.	319,718.70	14,649.39
3	Portable discharge rods ( 1 phase)	Nos.	16,802.10	61.58
4	Current Transformers 5 core (1 phase)			
i)	1200 -600-300-150/1-1-1-1-1 A, 5 core 0.2S class ,40 kA with 120% extended current rating with marshalling boxes, terminal connectors etc.	Nos.	353,618.10	4,074.57
i)a	1200 -600-300-150/1-1-1-1-1 A, 5 core 0.2S class ,31.5 kA with 120% extended current rating with marshalling boxes, terminal connectors etc.	Nos.	337,544.55	3,889.36
ii)	600-300-150/1-1-1-1-1 A, 5 core 0.2S class ,40 kA with 120% extended current rating with marshalling boxes, terminal connectors etc.	Nos.	353,618.10	4,074.57
ii)a	600-300-150/1-1-1-1-1 A, 5 core 0.2S class ,31.5 kA with 120% extended current rating with marshalling boxes, terminal connectors etc.	Nos.	337,544.55	3,889.36
5	8800 pF CVTs (1 phase) with marshalling boxes, terminal connectors etc .	Nos.	265,342.35	4,109.12

Sl. No.	Description of Item	Unit	Unit Supply Price (in Rs.)	Unit Erection price (in Rs.)
6	120 kV Surge arresters SH class-IV ( 1 phase) with marshalling boxes, terminal connectors etc.	Nos.	51,383.85	1,442.96
7	132 KV, 0.2S Class Potential Transformer (1 Ph.)with marshalling boxes, terminal connectors etc.	Nos.	407,676.15	5,690.95
<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			
i	Line bay	Set	722,977.50	75,782.70
ii	Transformer bay	Set	843,593.10	75,782.70
iii	TBC Bay	Set	564,149.25	51,417.77
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	728,440.65	38,205.30
1.2	132 kV Solid Core, Bus post Insulators for erection hardware	Nos.	13,006.35	653.26
<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	326,630.85	6,702.83
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.	213,020.85	5,445.83
ii)	1250 A, 25 kA without earth switch (Double break Isolator)	Nos.	213,020.85	5,445.83
iii)	1250 A, 25 kA without earth switch (Double break Isolator)(Tandem arrangement)	Nos.	213,020.85	5,445.83
iv)	2500 A, 25 kA without earth switch (Double break high level beam mounted Isolator)	Nos.	213,020.85	5,445.83
3	1200A, Horn gap fuse ( 1 phase)	Nos.	32,340.00	1,721.90
4	Current Transformers (1 phase)			
i)	600-300-150/1 A, 5 core 0.2S class 25 kA with 120% extended current rating with marshalling boxes terminal connectors	Nos.	82,077.45	1,500.92
ii)	1200 -600-300/1A, 5 core 0.2S class 25 kA with 120% extended current rating with marshalling boxes terminal connectors	Nos.	84,518.70	1,500.92
5	33 KV, 0.2S class Potential Transformer (1 phase) with marshalling boxes terminal connectors	Nos.	53,001.90	1,500.92
6	30 kV Surge arresters class 3 ( 1 phase) with marshalling boxes terminal connectors	Nos	13,629.00	5,226.06
7	Portable discharge rods.	Nos.	15,120.00	61.58

Sl. No.	Description of Item	Unit	Unit Supply Price (in Rs.)	Unit Erection price (in Rs.)
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	399,231.00	12,002.55
ii)	Transformer Bay	Set	349,021.05	12,071.38
iii)	TBC Bay	Set	349,021.05	11,345.67
iv)	Bus (For eighteen bays-13 bays now and 5 bays for future extn)	Set	408,556.05	7,977.95
8.2	33 kV Solid core Bus post Insulators for erection hardware	Nos.	2,716.35	566.32
<b>E</b>	<b>LT Switchgear</b>			
i	415 V Main switch Board	Set	1,747,870.43	6,334.30
ii	415 V ACDB (no of feeders shall be asper the requirement of the project plus 20% extra feeders)	Set	1,500,605.03	6,334.30
iii	415V MLDB	Set	1,194,728.54	6,334.30
iv	415V Emergency LDB	Set	639,395.98	3,922.81
v	250V DCDB (no of feeders shall be asper the requirement of the project plus 20% extra feeders)	Set	429,814.04	5,223.65
vi	48V DCDB	Set	368,821.53	3,922.81
<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	810,573.75	6,362.92
1.2 a)	CB relay panel with A/R	Nos.	705,633.08	5,124.03
1.2 b)	CB relay panel without A/R	Nos.	613,185.30	5,124.03
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.	1,629,920.25	5,124.03
1.4	Transformer protection panel HV and LV sides) with numerical differential protecton 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.	1,407,475.13	5,124.03
1.5	Transfer bus coupler panel with distance protection relay scheme with all relays	Nos.	973,365.75	5,124.03
1.6	Bus coupler panel with all necessary relays etc.	Nos.	843,209.33	5,124.03
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. Protocolas as and where applicable.	Set	6,308,439.00	15,125.00

Sl. No.	Description of Item	Unit	Unit Supply Price (in Rs.)	Unit Erection price (in Rs.)
1.8	Time Synchronization equipment will have dual ethernet with RJ-45 port.	Set	280,743.75	2,198.86
<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.	1,768,956.53	9,458.35
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.	2,229,357.38	9,458.35
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.	2,426,511.00	9,458.35
d)	Transformer ( CB relay Panel without A/R )	Nos.	914,731.65	9,458.35
<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.	632,628.15	4,241.95
b)	TBC with numerical type E.F & O/C relays complying to IEC 61850 protocol	Nos.	529,421.55	4,241.95
4	Other / common equipment pertaining to C&R system			
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	2,287,375.65	5,271.95
ii)	Relay test kit (Reputed manufacturer) Megger or Omicron make (Please furnished break up scheduls )	Nos.	2,927,073.45	3,249.38
<b>H-1</b>	<b>BATTERIES (VRLA TYPE )</b>			
<b>1.1</b>	<b>250 V</b>			
a)	250V, 300 AH	Sets.	593,033.70	16,274.69
b)	250V, 500 AH	Sets.	1,258,872.30	18,932.39
c)	220V ,800 AH	Sets.	1,899,367.05	21,521.27
<b>1.2</b>	<b>48 V</b>			
a)	48V, 300 AH	Sets.	110,288.85	15,377.51
b)	48V, 500 AH	Sets.	398,934.90	22,102.08
c)	48V, 800 AH	Sets.	398,934.90	25,945.55
<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	820,260.00	8,175.98
b)	250 V, 60A/50A Float and float Cum Boost Charger	Nos.	441,865.20	10,091.08

Sl. No.	Description of Item	Unit	Unit Supply Price (in Rs.)	Unit Erection price (in Rs.)
c)	250 V, 80A/80A Float and float Cum Boost Charger	Nos.	621,576.90	16,566.90
<b>1.2</b>	<b>48 V</b>			
a)	48V, 30A/20 A float and Float Cum Boost	Set	468,038.55	6,394.92
b)	48 V, 60A/50A Float and float Cum Boost Charger	Nos.	363,905.85	11,267.18
c)	48V, 100A Float and float Cum Boost Charger	Nos.	554,664.60	17,786.48
I-1	Diesel Generator Set along with control panel (40 kVA)	Set	1,044,823.50	15,090.13
I-2	Diesel Generator Set alongwith Control panel (100 kVA/125 kVA)	Set	2,200,418.85	31,897.32
I-3	Diesel Generator Set alongwith Control panel (250 kVA)	Set	3,432,957.15	110,918.54
I-4	Diesel Generator Set alongwith Control panel (500 kVA)	Set	4,508,877.45	115,459.94
J	Air conditioning of control room with High wall type 5 star rated Split Air conditioner Units of 2 TR capacity with stablizer.	Nos.	63,748.65	6,998.67
<b>K</b>	<b>FIRE PROTECTION SYSTEM</b>			
1.1	Portable Fire Extinguishers			
a	4.5 Kg DCP Type	Nos.	7,528.50	474.55
b	4.5 Kg CO2 Type	Nos.	10,544.10	474.55
c	22.5 Kg CO2 type	Nos.	26,750.96	887.51
d	12 Fire buckets with stand	Nos.	1,938.04	72.45
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	3,058,461.05	158,370.87
1.3	Smoke detection system with all accessories and fittings	Set	525,488.30	66,424.58
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	1,406,522.57	204,650.72
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 200/160 MVA, 2 Nos, 220/132/33 KV power transformers as per tender specification.	LS	2,473,627.75	125,063.19
1.6	FIRE PROTECTION SYSTEM - 132KV, 80 MVA, 3 PH T/F	LS	887,227.53	133,084.61
1.7	09 Litre high pressure water Mist system, Backpack type,(09 Litre main vessel made by ultralite carbon composite with PET Liner with an additional high pressure compressed air cylinder, volume 02 Lit, also made by ultralite carbon composite with PET Liner) with all accessories	Set	252,000.00	1,050.00

Sl. No.	Description of Item	Unit	Unit Supply Price (in Rs.)	Unit Erection price (in Rs.)
1.8	50 Litre high pressure water Mist system, Trolley mounted type,(09 Litre main vessel made by light weight anti-corrosive aluminium alloy with an additional high pressure compressed air cylinder, volume 06 Lit, also made by ultralite carbon composite with PET Liner) with all accessories	Set	315,000.00	1,050.00
L	<b>ILLUMINATION SYSTEM</b>			
L-1	CONTROL ROOM BUILDING:			
1	Lighting Panel			
a	Lighting Panel (Indoor) Type ACP-1 as per Tech. Specification	Nos.	37,269.75	3,016.34
b	Lighting Panel (Indoor) Type DCP as per Tech. Specification	Nos.	37,355.85	3,016.34
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.	2,157.75	149.73
b	Lighting fixture Type- FF: as per Tech. Specification	Nos.	2,901.15	149.73
c	Lighting fixture Type- IF: as per Tech. Specification	Nos.	908.25	149.73
d	Lighting fixture Type- FB: as per Tech. Specification	Nos.	895.65	149.73
e	Lighting fixture Type- PF: as per Tech. Specification	Nos.	4,672.50	149.73
f	<b>LED type</b>			

Sl. No.	Description of Item	Unit	Unit Supply Price (in Rs.)	Unit Erection price (in Rs.)
(i)	Lighting fixture Type- F1 as per Tech. Specification (BLRB218 LED+ 2 LED Tubes)	Nos.	1,888.95	525.26
(ii)	Lighting fixture Type- FF: as per Tech. Specification (BZBRSL GX 34W CW)	Nos.	3,426.15	525.26
(iii)	Lighting fixture Type- IF: as per Tech. Specification (BZSLO 18 W LED)	Nos.	1,150.80	525.26
(iv)	Lighting fixture Type- FB: as per Tech. Specification (BICDO 40W LED)	Nos.	2,899.05	525.26
(v)	Lighting fixture Type- PF: as per Tech. Specification (BRTEG 72W LED)	Nos.	6,851.25	525.26
g	5/15 A, 240V: Indoor Receptacles 3 pin type (type RI)	Nos.	1,446.90	149.73
h	15A, 240V: Out door receptacles 2 pole, 3 pin type (Type RO)	Nos.	3,972.15	178.71
i	63A, 415V : Interlocked switch socket outdoor Receptacles (Type RP)	Nos.	14,710.50	521.64
<b>3</b>	<b>Switchboards</b>			
a	Modular switch board with 4 nos. 5Amp. Switches and 1 no. 5/15 Amp. receptacles	Nos.	1,037.40	170.26
b	Modular switchboard with 6 nos. 5Amp. Switches	Nos.	1,069.95	170.26
c	Modular switchboard with 2 nos. 5Amp. Switches	Nos.	779.10	170.26
d	Modular switchboard with 6 nos. 32 Amp MCB	Nos.	5,717.25	315.16
e	Modular switchboard with 1 no. 32 Amp. MCB	Nos.	1,166.55	315.16
4	Ceiling fans			
a	1400 mm sweep with electronic step regulator	Nos.	2,663.85	303.08
5	Exhaust fans	Nos.	4,372.20	326.03
6	Wall mounted fans 400 mm sweep	Nos.	2,814.00	303.08
<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	298,443.60	83,906.76

Sl. No.	Description of Item	Unit	Unit Supply Price (in Rs.)	Unit Erection price (in Rs.)
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	303,160.20	68,532.87
c	Telephone sockets			
c.1	Single socket outlet comprising RJ-11 socket	Nos.	622.65	92.98
c.2	Dual socket outlet comprising RJ-45 socket	Nos.	942.90	92.98
8	Junction boxes with 4 nos. of terminal blocks for indoor lighting excluding junction box supplied alongwith lighting fixture	Nos.	4,830.00	254.78
9	Lighting Transformer 40 kVA, 415/415, 3 phase, 50 Hz dry type as per Tech. Specification.	Nos.	317,445.45	9,994.48
10	Lighting Transformer 100 kVA, 415/415, 3 phase, 50 Hz dry type as per Tech. Specification.	Nos.	362,980.80	14,993.53
11	Self supported aluminium ladder as per technical specification	Nos.	48,018.60	76.07
<b>L-2</b>	<b>FFPH Building</b>			
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.	2,157.75	149.73
b	Lighting fixture Type- IF: as per Tech. Specification	Nos.	908.25	149.73
c	Lighting fixture Type- FB: as per Tech. Specification	Nos.	895.65	149.73
d	Lighting fixture Type- PF: as per Tech. Specification	Nos.	4,672.50	149.73
e	5/15 A, 240V: Indoor Receptacles 3 pin type (type RI)	Nos.	2,174.55	149.73
2	Switchboards			
a	Modular switch board with 4 nos. 5Amp. Switches and 1 no. 5/15 Amp. receptacles	Nos.	1,037.40	160.60
b	Modular switchboard with 6 nos. 5Amp. Switches	Nos.	1,021.65	160.60
c	Modular switchboard with 2 nos. 5Amp. Switches	Nos.	779.10	149.73
3	Ceiling fans			
a	1400 mm sweep with electronic step regulator	Nos.	2,808.75	303.08
4	Exhaust fans	Nos.	4,372.20	532.51
5	Wall mounted fans 400 mm sweep	Nos.	2,765.70	303.08
<b>6</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	69,569.85	35,117.72



Sl. No.	Description of Item	Unit	Unit Supply Price (in Rs.)	Unit Erection price (in Rs.)
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	68,554.50	22,197.47
7	Junction boxes with 4 nos of terminal blocks for indoor lighting excuding junction box supplied alongwith lighting fixtures.	Nos.	4,685.10	254.78
L-3	Outdoor lighting (Switchyard and street lighting)			
1	Lighting panel			
a	Lighting panel (Outdoor) Type ACP - 2	Nos.	40,880.70	3,016.34
b	Lighting panel (Outdoor) Type ACP - 3	Nos.	40,142.55	3,016.34
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.	22,093.05	348.97
b	Lighting fixture Type- SF2: as per Tech. Specification	Nos.	13,076.70	348.97
c	Lighting fixture Type- MP: as per Tech. Specification	Nos.	2,953.65	164.22
d	Lighting fixture Type- SC: as per Tech. Specification	Nos.	4,039.35	164.22
e	15A, 240V : Outdoor receptacles 2 pole, 3 pin type (Type RO)	Nos.	3,972.15	235.46
f	63A, 415V: Interlocked switch socket outdoor receptacles (Type RP)	Nos.	14,710.50	590.47
3	Lighting poles Type A1	Nos.	17,235.75	3,493.30
4	Lighting poles Type E1	Nos.	9,480.45	2,777.25
5	Cart wheel mounted aluminium ladder as per Tech. Specification	Nos.	71,033.55	241.50
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	1,050,984.90	34,714.42
b	3.5C X 300 mm <sup>2</sup>	Km	1,548,408.75	89,958.75
c	3.5C X 150 mm <sup>2</sup>	Km	1,032,157.35	44,979.38
d	3.5C X 95 mm <sup>2</sup>	Km	694,504.65	41,356.88
e	1CX300 mm <sup>2</sup>	Km	528,543.75	28,556.17
f	1C X 150 mm <sup>2</sup>	Km	433,994.40	28,556.17
1.2	Power cables (PVC) 1.1 kV			
a	3.5C X 70 mm <sup>2</sup>	Km	392,927.85	41,069.49
b	3.5C X 35 mm <sup>2</sup>	Km	325,014.90	32,641.14
c	4C X 16 mm <sup>2</sup>	Km	182,807.10	26,958.65
d	4C X 6 mm <sup>2</sup>	Km	119,957.25	21,863.00
e	2C X 6 mm <sup>2</sup>	Km	67,395.30	13,141.22
1.3	Control cable (PVC) 1.1 kV			
a	2C X 2.5 mm <sup>2</sup>	Km	113,739.15	22,166.08
b	3C X 2.5 mm <sup>2</sup>	Km	145,578.30	25,874.31
c	5C X 2.5 mm <sup>2</sup>	Km	216,371.40	29,108.00
d	7C X 2.5 mm <sup>2</sup>	Km	277,902.45	32,368.25

Sl. No.	Description of Item	Unit	Unit Supply Price (in Rs.)	Unit Erection price (in Rs.)
e	10C X 2.5 mm2	Km	368,901.75	35,576.57
f	14C X 2.5 mm2	Km	515,986.80	40,428.31
g	19C X 2.5 mm2	Km	678,016.50	40,428.31
h	27C X 2.5 mm2	Km	944,527.50	43,661.99
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	104,196.75	5,823.77
2	75x12 mm G.I Flats for risers for equipments, columns and structures	MT	109,032.00	6,665.40
3	50x6 mm G.I flats for risers for all other equipments etc.	MT	109,032.00	12,652.19
4	Materials for Earthing pits with supply of all earthing materials including base plate.	LS	1,617,378.00	207,320.51
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	114,051.00	3,419.64
2	Lattice structure with fasteners etc.(MS)	MT	110,559.75	3,419.64
3	Standard structure for equipment support (other than CB)-(HT)	MT	114,051.00	3,419.64
4	Standard structure for equipment support (other than CB)-(MS)	MT	110,559.75	3,419.64
5	Pipe Type Structure	MT	114,051.00	3,419.64
P	Cable Racks as per design requirement.	MT	121,309.65	4,209.35
Q	11KV Disc Insulators (120/90KN)	Nos.	846.30	51.92
R	Sub- Station automation system comprising of necessary equipments & materials wth 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	13,676,878.95	41,211.98
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	3,675,000.00	61,216.63
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	196,123.20	29,793.86
2	Lighting cum lightning masts as per design	Sets.	1,649,049.15	48,252.91
3	GI Earthwire	KM	72,966.60	27,599.83
4	Earth Pit (Treated )	Nos.	18,519.90	13,767.92
5	Earth Pit (Non Treated )	Nos.	7,963.20	5,228.48
U	<b>132KV XLPE Cable</b>			
1	132KV grade,1Cx1200sqmmXLPE insulated copper cable as per technical specification	km	18,900,000.00	630,000.00
2	132KV grade,1Cx630sqmmXLPE insulated copper cable as per technical specification	Km	12,627,642.30	334,341.05

Sl. No.	Description of Item	Unit	Unit Supply Price (in Rs.)	Unit Erection price (in Rs.)
3	Cable termination as per technical specification for interconnection with overhead transmission line for 132KV cables (including support insulators)	Nos.	381,349.50	60,906.30
4	Normal Straight Through Joint suitable for 132KV, 1200 sqmm X 1 Core Copper Cable as per technical specification.	Set	176,830.50	26,250.00
5	Cross Bonded Type Straight Through Joint suitable for 132KV, 1200 sqmm X 1 Core Copper Cable as per technical specification.	Set	180,197.85	26,250.00
6	Insulated Straight Through Joint suitable for 132KV, 1200 sqmm X 1 Core Copper Cable as per technical specification.	Set	180,197.85	26,250.00
7	Insulated Straight Through Joint suitable for 132KV, 630 sqmm X 1 Core Copper Cable as per technical specification.	Set	305,583.60	26,250.00
8	Aluminum Clamp for fixing Cable in Structure	No	2,223.90	1,050.00
9	Trifoil clamp used during laying of cable	No	1,320.90	1,050.00
10	<b>LINK BOXES</b>			
i)	Single phase link boxe without SVL	No	21,770.70	5,250.00
ii)	Single phase link boxe with SVL	No	28,247.10	5,250.00
iii)	Three Phase link boxes without SVL	No	48,375.60	5,250.00
iv)	Three Phase link boxes with SVL	No	67,880.40	5,250.00
11	33KV XLPE 1 Core, 630 sqmm cables (from Incomer gantry to outgoing feeder gantry),	Km	5,681,084.85	140,700.00
12	33KV Cable Sealing End termination system located at the gantry	Nos.	52,500.00	2,835.00
13	1Cx240 sqmm XLPE cable	Km	3,635,052.75	42,000.00
	Supply of HDPE Pipe (PN6 PE63 GRADE) through HDD Pipe of required Dimension and thickness	Mtr	1,890.00	1,575.00
	Alumunium Pipe tube (3inch) for arrangement of spare cables.	Mtr	3,097.50	189.00
	Sheath Bonding and earthing Cable, 300 sqmm X 1 Core, Cu Conductor, XLPE Insulated and PVC Shetahed suitable to carry short ckt rating of 40kA for 1 sec.	Mtr	2,835.00	168.00
	1100 Volts Grade 500 sqmm x 1 Core, Cu/XLPE/PVC Earth Continuty Cable	Mtr	4,305.00	126.00
	Cable Route Marker	Mtr	1,260.00	210.00

Sl. No.	Description of Item	Unit	Unit Supply Price (in Rs.)	Unit Erection price (in Rs.)
<b>V</b>	<b>Supply of Godrej make furnitures for Control Room and Office etc.</b>			
1	Chairs	Nos.	32,821.06	
2	Steel Table	Nos.	19,957.56	
3	Table with chairs for confrence room with sitting capacity of 8 (eight) persons.	LS	77,220.83	
4	Godrej B266 make Steel Almira	Nos.	36,970.03	
<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	1,290,659.32	
2	132/33 KV 50 MVA Transformer	LS	738,200.30	
3	220 kV CB	LS	1,059,298.70	
4	132 kV CB	LS	395,131.43	
5	33 kV CB	LS	245,116.46	
6	220 kV Isolator	LS	452,054.19	
7	132 kV Isolator	LS	256,812.31	
8	33 KV Isolators	LS	153,872.93	
9	220 kV CT, 1600A, 120% extended current rating	Nos.	403,749.36	
10	220 kV CT, 1600A, 150% extended current rating	Nos.	415,047.94	
11	132 kV CT, 1200A, 120% extended current rating	Nos.	258,828.83	
12	132 KV CT 600A 120% extended	Nos.	196,101.62	
12	33 KV CT, 1200A,	Nos.	65,023.88	
13	33 KV CT, 600A,	Nos.	69,369.67	
14	220 kV CVT, 4400 pF	Nos.	275,492.33	

Sl. No.	Description of Item	Unit	Unit Supply Price (in Rs.)	Unit Erection price (in Rs.)
15	132 kV CVT, 8800 pF	Nos.	232,186.55	
16	216 kV surge arrester	Nos.	67,286.73	
17	120 kV surge arrester	Nos.	47,655.20	
18	30 kV Surge arresters	Nos.	12,638.90	
19	C&R Panels	LS	3,102,231.72	
20	PLCC	LS	1,511,572.65	
21	LT Transformer, 630 KVA	LS	81,235.77	
22	Batteries (250V & 48V)	LS	181,278.35	
23	Battery Charger (250 V & 48 V)	LS	250,436.71	
24	DG Set	LS	143,941.25	
25	LT Switchgear	LS	352,214.47	
26	Fire fighting System	LS	294,656.57	
27	Erection Hardware	LS	1,202,628.95	
28	33 KV Potential Transformer	Nos.	41,831.42	
29	Illumination	LS	310,106.53	
X	<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.	740,106.94	
2	Megger 5 kV /Insulation tester, Micro processor based of Meggar make	No.	299,987.68	
3	Digital multimeter (3½ digit)	No.	17,128.39	
4	Oil sampling bottle	Nos.	10,814.37	
5	Portable SF6 gas refilling device	No.	751,515.40	
6	Capacitance and tan delta kit of Meggar/Eq. make	No.	2,491,276.57	
7	Transformer winding resistance meter	No.	1,043,962.24	
8	Automatic Transformer turns ratio meter (Micro processor based) of Meggar make.	No.	891,605.93	
9	Kalfisher Dew point kit for SF6 gas.	No.	772,558.50	
10	SF6 gas evacuating, filtering and drying plant	No.	2,552,897.71	
11	Transformer oil filtration plant (4 KL / Hr. capacity) complete with all accessories	No.	1,945,842.78	
12	Circuit breaker analyser	No.	3,302,703.29	
13	Primary current injection kit	No.	832,753.58	
14	Secondary current injection kit	No.	1,608,347.74	
15	Relay operation timer	No.	306,789.53	
16	Selective level meter	No.	499,268.65	
17	Selective level generator	No.	410,638.15	

<b>BIHAR STATE POWER TRANSMISSION COMPANY LIMITED</b>				
<b>SCHEDULE OF RATES (SUPPLY AND ERECTION/COMMISSIONING) FOR CONSTRUCTION OF GRID SUB-STATIONS</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 Supply Price of (in Rs.)</b>	<b>Unit Erection price (in Rs.)</b>
<b>A-I 420kV Bus Reactors</b>				
1	125MVAR, 420kV, 3-Ph, Shunt Reactor (Excluding Insulating oil) with all accessories	Nos.	106,535,071.00	721,875.00
2	Insulating oil for 125MVAR, 420kV, 3-Ph, Shunt Reactor with 10% extra Oil	Lot	9,728,147.00	550,000.00
3	On line insulating oil drying system (Cartridge type) (As per technical specification)	Sets	926,843.00	13,750.00
4	On line Dissolved Gas (Multigas) & Moisture analyser	Sets	3,670,299.00	13,750.00
<b>B. SWITCHYARD EQUIPMENT</b>				
<b>BLA 400kV GIS EQUIPMENTS</b>				
1	420kV, 3150 A, 63 kA, SF6 GIS ICT feeder bay module as per Technical specification.	Sets	29,163,750.00	454,480.95
2	420kV, 3150 A, 63 kA, SF6 GIS Reactor bay module as per Technical specification.	Sets	24,646,020.00	557,285.40
3	420 kV, 3150 A, 63 kA, SF6 GIS Line feeder bay module (without PIR) as per Technical specification	Sets	32,151,525.00	482,604.15
4	420kV, 3150 A, 63 kA, SF6 GIS Bus bar module as per Technical specification	Sets	12,327,000.00	493,402.35
5	420kV, 3150 A, 63 kA, SF6 GIS Tie bay module (without PIR) as per Technical specification	Sets	31,342,500.00	482,604.15
6	420kV, 3150 A, 63kA, Single phase, SF6 Gas Insulated Bus Duct (GIB) GIS Hall for line, Transformer and Reactor from GIS unit.	M	77,910.00	2,845.50
8(a)	Controlled switching device for 420 kV, 500 MVA ICT	Sets	478,248.75	3,150.00
8(b)	Controlled switching device for 420 kV, 125 MVAR Reactor	Sets	478,248.75	3,150.00
8(c)	Controlled switching device for 420 kV, Tie Bay	Sets	478,248.75	3,150.00
9	420KV, 3150A, 63KA, 1 Sec Single Phase SF6 to Air Bushing	Set	652,512.00	255,028.20
<b>BLB 400kV AIS EQUIPMENTS</b>				
11	Surge Arrester, 1-PH, 336 KV with terminal connectors and Surge Counter & Corona Ring	Nos.	239,847.30	6,048.00
12	420 kV, 4400 pF Capacitive Voltage Transformer (1-Phase)	Nos.	409,426.50	6,727.35
13	420 kV, 1 phase Bus Post Insulator	Nos.	47,114.55	2,108.40
<b>420kV Circuit Breakers (3-Phase) with support structure</b>				
	3150A, 63KA without closing resistor	Nos.	5,737,841.55	35,380.80
	Control Switching Device	Nos.	968,064.30	7,478.10
<b>420kV (6 Core) Current Transformer (1-Phase)</b>				
	3000A, 63KA with 120% extended current rating	Nos.	820,392.30	5,896.80
<b>ISOLATORS -420kV Isolator (3-phase) (Double Break)</b>				
	2000A, 63KA, isolator with one E/S	Nos.	1,451,315.25	9,450.00
	3150A, 63KA, isolator with one E/S	Nos.	1,470,115.50	20,602.05
	3150A, 63KA, isolator with two E/S	Nos.	1,673,305.20	23,349.90
<b>BIIA 220 kV GIS EQUIPMENTS</b>				
1	245kV, 3000 A, 50 kA, SF6 GIS ICT feeder bay module as per Technical specification	Sets	24,204,600.00	355,859.70
2	245kV, 3000 A, 50 kA, SF6 GIS Line feeder bay module as per Technical specification	Sets	23,569,350.00	342,783.00
3	245 kV, 3000A, 50kA, SF6 GIS Bus bar module as per Technical specification	Sets	10,920,000.00	356,717.55
4	245kV, 3000 A, 50 kA, SF6 GIS Bus coupler bay module as per Technical specification	Sets	18,942,000.00	360,151.05
5	245kV,3000A, 50kA, Single phase, SF6 Gas Insulated Bus Duct (GIB) GIS Hall Associated Accessories from GIS Unit.	M	89,250.00	2,328.90
7	245kV, 3000A, 50kA 1 Sec Single Phase SF6 to Air Bushing	Set	861,000.00	20,321.70
<b>BIIIA 132 kV GIS EQUIPMENTS</b>				
1	145 KV, 2000A, 40 KA for 1 Sec, SF6 GAS-INSULATED Metal Enclosed Line ICT Bay Module as per Technical Specification	Sets	15,300,000.00	153,720.00
2	145 KV, 2000A, 40 KA for 1 Sec SF6 GAS-INSULATED Metal Enclosed Line Feeder Bay Module as per Technical Specification	Sets	13,500,000.00	153,720.00
3	145 KV, 2000A, 40KA, SF6 GIS BUS BAR Module as per Technical Specification	Sets	4,500,000.00	109,168.50
4	145KV, 2000 A, 40 KA, SF6 GIS Bus Coupler Bay Module as per Technical Specification	Sets	9,720,000.00	156,226.35
5	145KV, 2000A, 40KA, 3 Phase, SF6 Gas Insulated Bus Duct (GIB) GIS Hall Associated Accessories from GIS Unit.	M	86,400.00	1,575.00
6	145KV, 2000A, 40KA, 1 Sec Single Phase SF6 to Air Bushing	Nos.	720,000.00	18,375.00
<b>BIV</b>	<b>33 kV GIS EQUIPMENTS( Double bus system each having 3000 A as per technical specification for 31.5kA/3sec) @40degC</b>			

Sl. No.	Description of Item	Unit	Unit Supply Price of (in Rs.)	Unit Erection price (in Rs.)
1	36KV (3-Phase) Indoor Switch Gear Panel, 2500A for Transformer Module ABT Energy Meter of CR Panels	Set	6,660,000.00	30,063.60
2	36KV (3-Phase) Indoor Switch Gear Panel, 1250A for Line Module ABT Energy Meter of CR Panels	Set	5,400,000.00	30,063.60
3	36KV (3-Phase) Indoor Switch Gear Panel for PT Module with suitable protective system & associated relays to be provided for protection of PT module in case of fault in incoming level	Set	3,600,000.00	30,063.60
4	36KV (3-Phase), 3000A Indoor Switch Gear Panel for Bus Sectionalizer Module with all necessary protection and provision of integration	Set	6,300,000.00	30,063.60
5	36KV, 3000A, SF6 GIS Bus Coupler Bay Module as per Technical Specification	Set	4,500,000.00	30,063.60
6	36KV, 31.5KA/3sec (3-Phase) Indoor Switch Gear Panel for LT Transformer Module.	Set	3,420,000.00	30,063.60
<b>BV</b>	<b>33kV Indoor AIS Panel</b>			
	<b>'36KV, 25kA/3 sec, Indoor switchgear Assembly with VCB, including protection relays and control equipment's and other accessories as per specification.</b>			
1	160MVA, Tertiary bays connection	Nos	824,032.95	10,786.82
2	33kV feeder bays	Nos	824,032.95	10,786.82
3	Outgoing bays, for Station Transformer connection	Nos	824,032.95	10,786.82
4	Bus sectionalizer	Nos	912,468.33	10,786.82
5	36 KV ( 3-Phase) ,Inddor Switchgear Panel for PT Module	Sets	464,188.12	10,786.82
<b>C</b>	<b>TESTING AND MAIN EQUIPMENT FOR GIS</b>			
1	only one set of SF6 Gas Processing Unit having Minimum capacity as per technical specification is to be supplied against this project and the same shall be used for 400kV or 220KV or 132KV GIS station (DILO Make) (with all accessories suitable for 400KV, 220KV and 132KV) In case of 132KV system i.e. for three bus system the capacity of the temporary storage facilities shall at least be sufficient for storing the maximum quantity of gas for one complete bay (switchgear and associated equipment)	Sets	6,715,094.15	604.27
2	<b>Partial Discharge Monitoring System</b>		-	-
a	online Partial Discharge Monitoring System for 400KV System with all accessories	Sets	16,939,642.76	604.27
b	Portable type Partial Discharge Monitoring System common for 220KV & 132KV system with all accessories	Sets	2,687,519.58	604.27
3	Dew Point Meter	Sets	400,729.46	604.27
4	SF6 Gas Leak Detector	Sets	64,310.97	604.27
5	EOT Crane for GIS Building for 400kV GIS station	Sets	2,864,764.35	296,770.95
6	EOT Crane for GIS Building for 220kV GIS Station	Sets	2,864,764.35	296,770.95
7	EOT Crane for GIS Building for 132kV GIS Station	Sets	1,922,063.85	126,612.15
<b>D</b>	<b>RELAY AND PROTECTION PANEL</b>			
1	400kV Circuit Breaker Relay Panel with Auto Reclose (with Automation)	Nos.	907,358.00	16,500.00
2	400kV Circuit Breaker Relay Panel without Auto Reclose (withAutomation)	Nos.	890,450.00	16,500.00
3	400kV Line Protection Panel (with Automation)	Nos.	5,211,873.00	16,500.00
4	400kV Transformer Protection Panel (For both HV & MV side)-(withAutomation)	Nos.	2,413,621.00	16,500.00
5	Reactor Protection Panel	Nos.	1,495,499.00	16,500.00
6	400kV Bus Bar Protection Panel (Duplicate)-(with Automation)	Sets	10,741,310.00	16,500.00
7	Time synchronisation equipment	Nos.	97,008.57	3,073.17
8	Three phase Automatic Relay measurement test kit with all necessary accessories,Industrial Grade Laptop and licensedsoftware as per Technicalspecification.	Sets	3,347,711.32	3,073.17
<b>H</b>	<b>ERECTION HARDWARE</b>			
	Insulator strings antifog type & hardware, spacers, conductor (S), Bus bar material, 4"IPS Tube, BMK (Bay Marshalling Kiosk-One no. for each bay), Clamps, Connectors (Compression type except for IPS Tube, which may be bolted type) including, Junction box, heavy duty -PVC pipes for equipment and lighting, all accessories etc. for the following: (The Main-I & Main-II Buses, BC, Jumper & Jack Bus in BC bay shall be of Quad ACSR Moose Conductor. TBC as well as other Feeder & Jumper will be of double Moose conductor). ( The BMK & Junction Boxes shall be erected 4ft above FGL and all cable connectors shall be supplied & erected accordingly ) <b>ACSR Moose conductor to be supplied by Tenderer.</b> (Note - It is mandatory to furnish Billing Breakup Unit (BBU) schedule for each and every item during engineering and approval by ordering authority without which payment shall not be released.)			

Sl. No.	Description of Item	Unit	Unit Supply Price of (in Rs.)	Unit Erection price (in Rs.)
	<b>400 kV I-Type Layout (One &amp; Half Breaker Scheme)</b>			
	Line bay	Set	3,321,935.40	398,164.20
	Transformer bay	Set	3,321,935.40	398,164.20
	Bus reactor bay	Set	3,321,935.40	398,164.20
	Bus Work (For two diameters)	Set	3,321,935.40	398,164.20
	Bus for 13 bays (10 bays now and 1 transformer bay as well as 2 nos. Line bays for future extn) (one set each for Main-I, Main-II & Transfer Bus)	Set	3,321,935.40	398,164.20
	<b>Erection Hardware for GIS</b>			
	Insulator strings, Disc Insulators, Hardware, Conductor, bus-bar materials, IPS Tube, Cable trays, clamps, spacers, connectors including equipment connectors, Junction box, earthwire, earthing material risers and all accessories etc. for the following: (Note:- (i) It is mandatory to furnish Billing Breakup Unit (BBU) schedule for each and every item during engineering and approval by ordering authority without which payment shall not be released.)			
1	400 KV - ICT Bays	Sets	282,720.43	23,875.77
2	400 KV - Reactor Bays	Sets	278,890.73	23,875.77
3	400 KV - Line/Feeder Bays	Sets	417,605.88	23,875.77
4	220 KV - ICT Bays	Sets	223,825.93	21,250.77
5	220 KV - Line/Feeder Bays	Sets	309,304.33	21,250.77
6	132 KV - ICT Bays	Sets	180,143.83	19,938.27
7	132 KV - Line/Feeder Bays	Sets	233,777.13	19,938.27
8	630kVA, 33/0.433kV LT Transformer	Sets	109,551.28	18,625.77
	<b>JII GIS Switchgear and GIS building Earthing.</b>			
1	100x10 mm Al Flat (For GIS Switchgear earthing, and HF Earthing)	Metre	1,012.20	402.32
2	Bimetallic connectors and other accessories for HF earthing and GIS earthing	Lot	222,364.53	105,673.22
	<b>K FIRE PROTECTION SYSTEM</b>			
K.I	HVWS system, Hydrant system and complete U/G & O/G piping and accessories etc. out side the pump house for Transformer / Reactor :			
1	500MVA, 400/220kV 3-phase Auto-Transformer	Nos.	866,161.81	40,215.17
2	125 MVAR, 420 kV 3-phase Bus Reactor	Nos.	713,076.95	37,111.37
K.II	<b>Hydrant system, complete U/G piping and accessories etc. outside the Pump House for GIS Hall.</b>			
1	For 400KV GIS Hall	Sets	1,727,210.33	30,031.57
2	For 220KV GIS Hall	Sets	1,438,138.71	30,031.57
3	For 132KV GIS Hall	Sets	793,262.84	30,031.57
	Note: The Hydrant shall cover SST & Store also.		-	-
K.III	<b>Portable and Wheel/ Trolley mounted Fire Extinguishers:</b>			
1	For Control Room Building (including ACDB, DCDB, MLDB, Battery Room etc.)	Sets	139,590.28	766.32
2	For 400KV GIS Hall	Sets	113,972.64	766.32
3	For 220KV GIS Hall	Sets	83,602.76	766.32
4	For 132KV GIS Hall	Sets	60,555.02	766.32
K.IV	<b>Smoke Detection System</b>			
1	For Control Room Building	Sets	167,774.78	4,311.12
2	For 400KV GIS Hall	Sets	147,406.72	5,058.72
3	For 220KV GIS Hall	Sets	99,534.94	4,586.22
4	For 132KV GIS Hall	Sets	82,947.42	4,043.02
5	Fire Fighting Pump House Building	Sets	56,685.77	3,302.77
K.V	<b>Fire Detection and Alarm System</b>			
1	For Control Room Building	Sets	59,183.02	3,982.47
2	For 400KV GIS Hall	Sets	60,704.59	4,776.62
3	For 220KV GIS Hall	Sets	53,054.76	4,411.22
4	For 132KV GIS Hall	Sets	36,173.27	3,619.87
5	Fire Fighting Pump House Building	Sets	29,464.71	3,109.22
M	<b>Visual Monitoring System for Watch &amp; Ward</b>			
1	For complete Substation Area (Indoor & Outdoor)	Sets	3,200,933.01	1,050.00
N	<b>WAMS System</b>			
1	WAMS Hardware - Time System (GPS receiver)	LS	179,511.64	5,250.00
2	WAMS Hardware - Substation Grade Layer-3 LAN Switches with minimum 4 x10/100 Mbps Ethernet ports and 2 x 1 Gbps Ethernet ports	LS	783,380.30	5,250.00
3	WAMS Miscellaneous - Armored Fibre Optic Cable and associated termination (e.g. L2 Switch) for connecting PMU panels located in different control room of a station	LS	85,547.04	5,250.00
4	Phasor Measurement Unit for 400 KV System	Nos.	410,707.22	5,250.00
5	TRIBUTARY INTERFACE- E1 INTERFACE (MINIMUM 16 NOS.)	Sets	341,844.61	5,250.00



Sl. No.	Description of Item	Unit	Unit Supply Price of (in Rs.)	Unit Erection price (in Rs.)
6	ETHERNET INTERFACE 10/100 BASE T WITH LAYER-2 SWITCHING (MIN 8INTERFACES PER CARD)	Nos.	116,750.24	5,250.00
7	VOIP TELEPHONE INSTRUMENT WITH ONE COMMON SWITCH (MIN. 8 PORT)	SET	1,146,248.78	5,250.00
<b>O</b>	<b>Mandatory spares (L.S items break up of spares furnished separately at Annexure-I).</b>		-	-
1	Spare for 400/200/132kV GIS	LS	8,781,522.83	-
10	Spares for 500MVA, 400/220/33 kV, Auto Transformer	LS	2,311,764.70	-
12	Spares for 125 MVAR, 420kV, Reactor	LS	1,053,065.65	-

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	2,881,900.00	-
2	Numerical type differential protection scheme complete with all materials & relays suitable for :			
	(a) 220 KV	Sets	523,638.70	19,260.20
	(b) 132 KV	Sets	494,770.25	19,260.20
3	Numerical type Distance Protection Scheme with required relays for :			
	(a) 220 KV	Sets	354,968.20	16,120.70
	(b) 132 KV	Sets	354,968.20	16,120.70
4	Electronic/Static type of Trivector Meter of 0.2S Class.	Nos.	23,908.50	2,998.05
5	Other Supervision Relay.			
	(a) D.C. Supervision Relay.	Nos.	7,245.00	456.55
	(b) A.C. Supervision Relay.	Nos.	7,245.00	456.55
	(c) Trip Circuit Supervision Relay	Nos.	11,845.00	456.55
	(d) Circuit Breaker D.C Supply fail alarm Relay	Nos.	5,060.00	456.55
	(e) Circuit Breaker A.C Supply fail alarm Relay	Nos.	5,060.00	456.55
	(f) VAX-31	Nos.	5,060.00	456.55
	(g) ODS (10 Way)	Nos.	8,189.15	456.55
	(h) Tripping relay	Nos.	11,500.00	456.55
	(i) Under voltage relay	Nos.	5,060.00	456.55
	(j) Under & over frequency relay	Nos.	5,060.00	456.55
	(k) REF relay	Nos.	5,060.00	456.55
	(l) LBB relay	Nos.	5,060.00	456.55
6	Numerical Non-Directional E/F & O/C Relay.	Nos.	46,953.35	7,249.60
7	Numerical type Directional E/F & O/C Relay.	Nos.	62,554.25	7,248.45
8	Master Trip Relay Type:			
	VAJHM - 23	Nos.	7,094.35	456.55
	VAJHM - 33	Nos.	14,795.90	456.55
	VAJHM - 53	Nos.	18,665.65	456.55
9	Aux Relays Type:			
	VAA - 11	Nos.	7,590.00	456.55
	VAA - 12	Nos.	7,590.00	456.55
	VAA - 13	Nos.	7,590.00	456.55
	VAA - 33	Nos.	7,590.00	456.55
10	Electromech Non Directional E/F & O/C Relay CDG-11.	Nos.	7,186.35	652.05
11	Electromech Directional E/F & O/C Relay CDD21	Nos.	25,551.85	652.05
12	TNC Switch.	Nos.	4,899.00	129.95
13	Selector Switch for carrier.	Nos.	1,661.75	129.95
14	Selector Switch for Protection Transfer.	Nos.	8,189.15	129.95
	<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.	114,568.75	27,149.50

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.	114,568.75	27,149.50
17	Metering panel suitable to mount 4 nos of rack mounted meters	Nos.	115,632.50	57,907.26
18	DCU with Box as per specification	Sets	183,827.50	115,433.21
19	Network Switch 8 port 10/100 Mbps	Nos.	12,522.35	1,541.00
20	Router for Grid sub stations	Nos.	112,666.65	18,670.25
21	UPS - 2 KVA online with 60 min back up on 100% load	Nos.	108,668.10	18,317.20
22	Industrial Grade Client PC as per specification	Sets	159,993.75	25,719.75
23	7 core 2.5 sq mm armoured control cable for CT connection	Mtrs.	356.50	63.78
24	4 core 2.5 sq mm armoured control cable for PT connection	Mtrs.	227.47	55.64
25	2 core 2.5 sq mm armoured cable for AC/DC Aux supply	Mtrs.	144.56	51.57
26	Communication cable	Mtrs.	43.82	51.57
27	GPRS Modem suitable for AMR of Existing SEM Type energy meter (DLMS-ICS Compliant)	Nos.	5,232.50	7,637.20
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.	979,415.90	56,136.10
(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.	1,178,922.50	59,878.20
(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.	629,127.05	56,136.10
(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.	707,353.50	59,878.20
(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.	193,085.00	49,898.50
(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.	226,353.35	49,898.50

(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.	120,792.55	49,898.50
(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.	135,811.55	49,898.50
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.			
A.	Suitable for charging of VRLA Type battery bank			
a.	250V,60/50 A	Sets.	363,493.15	10,603.00
b.	250V, 45/30 A	Sets.	291,031.65	10,603.00
B.	Suitable for charging of Tubular Type battery bank			
a.	250V,60/50 A	Sets.	383,592.85	10,603.00
b.	250V, 45/30 A	Sets.	301,204.55	10,603.00

<b>BIHAR STATE POWER TRANSMISSION COMPANY LIMITED</b>				
<b>SCHEDULE OF RATES FOR AUTOMATED SYSTEM BALANCING MECHANISM PROJECT, INVOLVING RATE OF HARDWARE &amp; SOFTWARE ITEMS AND SERVICES FOR INTEGRATING A GRID SUBSTATION (GSS) FOR STATE LOAD DISPATCH CENTRE (SLDC) CONTROL ROOM</b>				
<b>(ALL PRICES ARE WITHOUT TAXES AND GST SHALL BE PAID EXTRA AS APPLICABLE)</b>				
<b>SN</b>	<b>Description of item</b>	<b>Unit</b>	<b>Unit Supply Price of (in Rs.)</b>	<b>Unit Erection price (in Rs.)</b>
1	2x1 configuration of 80" diagonal rear projection Video Wall with full HD resolution (1920x1080) with 2000 luminus brightness & with auto switch over facility to HDMI- DVI advance power cooling system auto colour adjustment & hot swappable power supply.	Nos.	2,435,400.00	184,471.74
2	Mounting Stand	set	220,836.00	16,727.44
3	Video wall controller	No.	1,382,802.00	104,741.68
4	DVI Copper Cables length of suitable to connect controller to video wall	set	73,656.00	5,579.15
5	UPS with Battery	No.	420,000.00	73,515.93
6	Software for viewing all parameters with Display & programming device cum tools		495,000.00	86,643.78
7	Digital input cards of Remote I/Os for above 22 inputs , each I/O should have 16 inputs	Nos.	60,192.00	10,535.88
8	Base module plate of above Remote input modules OF 8 SLOT ,as per attached spec	Nos.	84,480.00	14,787.21
9	Power module of above Remote input modules	Nos.	84,480.00	14,787.21
10	CPU module of above Remote input modules	Nos.	84,480.00	14,787.21
11	Programmable controller for generating alarm annunciation confirming to technical specifications attached.	Nos.	110,220.00	19,292.68
12	Ethernet Adopter, as per attached spec.	Nos.	59,400.00	10,397.25
13	Smart Power transducer with modbus protocol as per attached spec	Nos.	59,400.00	10,397.25
14	Cable (1C x 2.5 sqmm)- meters for CT, PT Connection	Meters	248.00	43.41
15	Cable (1C x 0.75 sqmm)- meters	Meters	165.00	28.88
16	Shilded twisted pair cable (0.5 sqmm)- meters , make lapp	Meters	250.00	43.76
17	Optical Fibre Cable armoured - meters with connectors	Meters	356.00	62.31
19	2.5 sqmm Teminal blocks	Nos.	198.00	34.66
20	CT Terminals	Nos.	270.00	47.26
21	LIU Box for optical fibre cable junction	Nos.	7,260.00	1,270.78
22	Media Converter for OFC to LAN	Nos.	19,536.00	3,419.54
23	Ethernet s/w	Nos.	13,200.00	2,310.50
24	Power supply Unit (24VDC/5 Amps)	Nos.	13,200.00	2,310.50
25	Moulded patch Cord	Nos.	264.00	46.21
26	CMR	Nos.	1,980.00	346.58
27	Cable Glands	Nos.	396.00	69.32
28	Panel(for Installation of DAQ Module)	No.	69,600.00	12,182.64

29	Laying & Termination of various sizes(2C, 3C, 4C, 7C, 10C, 12C, 19C, X 2.5Sqmm) PVC Armored copper control cables from different panels to LVS panel as per site requirement with all cost of men, consumable and T&P etc.	Mtr	NA	60.00
<b>PA System</b>				
1	8" In-Wall/In-Ceiling PoE+ IP Loudspeaker Endpoint with	No.	240,922.00	39,543.93
2	Surface Mount Straight Enclosure for IP-8SCM, IP-SDM, IP-SDMF, IP-	No.	23,970.00	3,934.34

<b>BIHAR STATE POWER TRANSMISSION COMPANY LIMITED</b>			
<b>SCHEDULE OF RATES FOR ULDC EQUIPMENTS (SUPPLY)</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 Supply Price (in Rs.)</b>
	<b>RTU</b>		
1	RTU base equipment comprising panels, racks, sub-racks, Power Supply modules, Communication Modules, interfacing equipment, required converters & all other required items/accessories including complete wiring for all modules.	No.	780,565.03
2	LDMS system alongwith software including Anti virus( Min 8 core Intel latest processor, Clock speed 3.0 Ghz or more ),15 MB or more Cache, RAM 16 GB, Two 24" wide screen ( 16:9 aspect ratio) , Full HD with min Resolution (1920* 1080) resolution with anti-glare coating ,LED monitor, keyboard & optical mouse, Two nos. 1 Gbps Ethernet ports, USB Ports (2 nos.), HDMI Port, Display Port, Universal Audio Jack )	Set	390,778.24
3	Furniture for LDMS system (One table and One chair suitable for Computer operation of Godrej make)	Set	28,214.55
4	Inverter( min 2 kva)	No.	49,117.95
5	MODEMs	No.	81,800.05
6	Weather sensor	No.	250,428.20
7	OLTC transducer	No.	6,613.09
8	Heavy Duty Relay	No.	465.76
9	Contact Multiplying Relay (CMRs)	No.	344.40
10	Multi Function Meters (MFMs)	No.	11,173.27
11	Time Synchronisation equipment without display	No.	63,488.79
12	CPU	No.	40,196.10
13	Analog Input Module (4 channels/card)	No.	11,420.85
14	Digital Input Module (16 channels/card)	No.	11,361.03
15	Digital Output Module (8 channels/card)	No.	12,023.90
16	PVC Conduit (Suitable size as per site requirement)	Nos.	22,990.74
17	48V DC to 12V DC Converter	Nos.	4,104.45
18	<b>Test Equipment for RTU</b>		
18(a)	Master Station cum RTU simulator & Protocol Analyser Software tool	No.	9,968.70
18(b)	Laptop PC for above software tools alongwith interfacing hardware (Intel Core i7, 16GB RAM,1TB HDD, 15.6" display, Windows-10 professional with licensed MS office and Antivirus (Latest Version)	No.	109,078.20
19	<b>1.1KV Control Cables (Copper) for each C&amp;R panels connection with RTU</b>		
19(a)	Communication Cable armoured (0.22 sq. mm) for MFT	KM	45,885.00
19(b)	14Cx1.5 sq.mm armoured control cable (Digital Input )	KM	625,094.36
19(c)	7Cx1.5 sq.mm armoured control cable (Digital Input )	KM	332,022.87
19(d)	4Cx2.5 sq.mm armoured control cable (Digital Output Trip/Close)	KM	217,582.66
20	PVC Conduit (Suitable size as per site requirement)	KM	115,403.90

<b>BIHAR STATE POWER TRANSMISSION COMPANY LIMITED</b>			
<b>SCHEDULE OF RATES (SERVICES/ERECTION) OF ULDC/RTU 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>
<b>1</b>	<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.	65,625.00
(a)	Splitter for RTU Communication	No.	Included in above cost.
(b)	MODEMS	No.	
(d)	Weather sensor	No.	
(d)	OLTC transducer	No.	
(e)	Heavy Duty Relay	No.	
(f)	Contact Multiplying Relay (CMRs)	No.	
(g)	Multi Function Transducers (MFTs)	No.	
(h)	Supervisory Interface cubicles(SIC) panel for mounting MFTs, relays etc	No.	
(i)	Time Synchronisation equipment without display	No.	
(j)	CPU	No.	
(k)	Analog Input Module	No.	
(l)	Digital Input Module	No.	
(m)	Digital Output Module	No.	
(n)	LDMS system alongwith software	Set	
(i)	Furniture for LDMS system (one table and One chair)	Set	
(ii)	Inverter	No.	
<b>2</b>	<b>Test Equipment for RTU</b>		
(a)	Master Station cum RTU simulator & Protocol Analyser Software tool	No.	29,251
(b)	Laptop PC for above software tools alongwith interfacing hardware (Intel Core i7, 16GB RAM,1TB HDD, 15.6" display, Windows-10 professional with licensed MS office and Antivirus (Latest Version)	No.	11,505
<b>3</b>	<b>1.1KV Control Cables (Copper) for each C&amp;R panels connection with RTU</b>		
(a)	Communication Cable armoured (0.22 sq. mm) for MFT	mts	33.60
(b)	14Cx1.5 sq.mm armoured control cable (Digital Input )	mts	33.60
(c)	7Cx1.5 sq.mm armoured control cable (Digital Input )	mts	33.60
(d)	4Cx2.5 sq.mm armoured control cable (Digital Output Trip/Close)	mts	33.60
(e)	PVC Conduit (Suitable size as per site requirement)	mts	33.60
<b>4</b>	<b>GPRS based Modem for data connectivity from RTU to SLDC</b>		
(a)	<b>For control centre location</b>		
(i)	Industrial grade 16 port serial server, 230V AC Power Input(19" Rack mount type)	No.	35,675.85
(ii)	Ethernet Module	No.	
(b)	<b>For remote location(Grid Sub-stations)</b>		
(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.	37,300
(ii)	48V DC to 12V DC Supply	No.	



<b>BIHAR STATE POWER TRANSMISSION COMPANY LIMITED</b>		
<b>SCHEDULE OF RATES (SERVICES/ERECTION) OF RTU INTEGRATION</b>		
<b>(ALL PRICES ARE WITHOUT TAXES AND GST SHALL BE PAID EXTRA AS APPLICABLE)</b>		
<b>BAYS OF RTU INTEGRATION AT FIELD</b>		
<b>S.N.</b>	<b>Service Description</b>	<b>Unit rate (in Rupees)</b>
1	RTU Data Integration 220KV Bays	47,068.25
2	RTU Data Integration 132KV Bays	42,865.73
3	RTU Data Integration RTCC	20,172.11
<b>BAYS OF RTU INTEGRATION AT SLDC</b>		
4	Integration of New RTUs of BSPTCL at SLDC Control Center	75,000.00
5	Integration of New Bays of BSPTCL at SLDC Control Center	13,000.00
6	Integration of New RTUs / SAS of 3rd Party [other than BSPTCL Substation supplier to the SCADA System of BSPTCL within 1000 IO points	450,000.00
7	Integration of New Bays of 3rd Party [ other than BSPTCL] to the SCADA System of BSPTCL	125,000.00
8	Integration of RTU/SAS channels with software license for BSPTCL at SLDC Control Centre	20,000.00

<b>BIHAR STATE POWER TRANSMISSION COMPANY LIMITED</b>			
<b>SCHEDULE OF RATES FOR TELECOM EQUIPMENT (SUPPLY) 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>
<b>1</b>	<b>OPGW cable</b>		
1(a)	24Fibre (DWSM) OPGW FO Cable	Km	182,188.00
1(b)	48Fibre (DWSM) OPGW FO Cable	Km	182,188.00
2	Hardware set for above 24 Fibre OPGW Fibre Optic cabling incl. all cable fittings& accessories except Joint Box	Set	37,213.00
3	2/3/4 way Joint Box (24 Fiber) including Coiling bracket as per requirement for looping/coiling of 30 meters of cable as per technical requirement	No.	30,175.00
4	Hardware set for above 48 Fibre OPGW Fibre Optic cabling incl. all cable fittings& accessories except Joint Box	Set	37,213.00
5	2/3/4 way Joint Box (48 Fiber) including Coiling bracket as per requirement for looping/coiling of 30 meters of cable as per technical requirement	No.	30,175.00
<b>6</b>	<b>UGFO cabling</b>		
6(a)	Unarmoured underground fiber optic cable-48 fibre DWSM	kM	91,476.00
6(b)	Unarmoured underground fiber optic cable-24 fibre DWSM	Km	80,457.00
6(c)	Armoured underground fiber optic cable 48 F DWSM type	km	122,375.00
6(d)	Armoured underground fiber optic cable 24 F DWSM type	km	83,235.00
7	2/3/4 way Joint Box (48 Fiber) including Coiling bracket as per requirement for looping/coiling of 30 meters of cable as per technical requirement		30,175.00
8	2/3/4 way Joint Box (24 Fiber) including Coiling bracket as per requirement for looping/coiling of 30 meters of cable as per technical requirement	No.	5,523.00
9	GI pipe 100mm(nominal bore), medium class including accessories as per technical specification	m	981.00
10	RCC hume pipe(NP3), 100mm diameter(inside) including accessories as per technical specification	m	1,118.13
11	PLB HDPE pipe O.D. 40mm including accessories as per technical specification	Km	69,324.07
12	Suspension Assembly (Grounding clamps are part of Suspension assembly )	Set	1,716.00
13	Tension Assembly (Dead end clamps and Grounding clamps are part of Tension assembly )	Set	2,612.00
14	Vibration Dampers for OPGW Cable	Nos.	397.00
15	Downlead clamps	Nos.	182.00
<b>16</b>	<b>FODP</b>		
16(a)	FODP 48F Indoor type, rack mounted with FCPC coupling and pigtails	No.	69,032.00
16(b)	FODP 96F Indoor type, rack mounted with 32U floor mounted network rack (front & back opening facility & with PDU) and FCPC coupling and pigtails along with panel	Nos.	79,538.00
<b>17</b>	<b>Fibre Optic Approach Cable including Hardware set(like ties, clips, cleats,conduits, ducts supports , fittings)</b>		
17(a)	24 Fibre (DWSM)	Km	130,490.00
17(b)	48 Fibre(DWSM)	Km	130,490.00
18	Hardware set for 24 Fiber optic approach cable	set	105,270.00
19	Hardware set for 48 Fiber optic approach cable	set	137,170.00
<b>20</b>	<b>SDH Equipment(STM-4 MADM upto 5 MSP protected directions)</b>		

21(a)	Base Equipment (Common cards, Cross connect/control cards, Optical base card, Power supply cards, power cabling, other hardware& accessories including sub-racks, patch cords,DDF etc. fully equipped including Cabinet etc. excluding (2)&(3) below)	No.	1,093,158.00
22	<b>SDH Equipment(STM-16 MADM upto 3 MSP protected directions)</b>		
22(a)	Base Equipment (Common cards, Cross connect/control cards, Optical base card, Power supply cards, power cabling, other hardware& accessories including sub-racks, patch cords,DDF etc. fully equipped including Cabinet etc. excluding (2)&(3) below)	No.	800,175.00
23	<b>Optical cards</b>		
23(a)	S4.1	No.	24,315.00
23(b)	L4.1	No.	27,056.00
23(c)	L4.2	No.	49,196.00
23(d)	S 16.1	No.	28,404.00
23(e)	L 16.1	No.	44,198.00
23(f)	L 16.2	No.	55,363.00
23(g)	Optical Line Interface <150 KM	No.	401,175.47
23(h)	Optical Line Interface upto 250 KM	No.	829,204.00
24	<b>Tributary Cards</b>		
24(a)	E1 interface card(Min. 32 nos.)	No.	91,736.00
24(b)	Ethernet interfaces 10/100 Mbps with Layer-2 switching (Min.16 nos. ports)	No.	102,415.00
25	<b>Drop &amp; Insert Multiplexer</b>	No.	364,030.00
25(a)	2 wire (sub/sub) voice channel card	No.	53,240.00
25(b)	2 wire (sub/exch) voice channel card	No.	64,379.00
25(c)	4 wire E & M Voice channel card	No.	57,021.00
25(d)	Asynchronous sub-channel data card	No.	54,715.00
25(e)	Synchronous data card N*64 kbps	No.	56,133.00
26	Digital Access cross connect switch (DACS), 16*16 ports matrix , full equipped for minimum 16E-1 ports	No.	348,549.00
27	Equipment cabinets for SDH equipment, primary multiplexer, drop/insert and DACS/ Digital Protection coupler	No.	68,065.00
28	Laptop PC for above software tools alongwith interfacing hardware (Intel Core i7, 16GB RAM,1TB HDD, 15.6" display, with latest operating system and licensed MS office and Antivirus (Latest Version)	Nos.	103,884.00
29	<b>Synchronization Equipment</b>		
29(a)	GPS clock including all hardware & accessories	Set	504,371.00
30	VOIP telephone with license of existing exchange	Set	46,620.00
31	<b>Cat -6 Cable</b>	mtr	38.00
32	<b>RJ 45 connector</b>	no	10.00
33	<b>6 core FOC without armour</b>	mtr	14.50
34	Optical Time Domain relector (OTDR) for 1310/1550 nm with laser source ( relevant accessories)	Nos.	494,993.00
35	SDH analyser	No.	1,298,823.00
36	Fusion Splicing Machine (FSM) along with standard accessories	Nos.	234,023.00
37	Optical Power Meter	Nos.	53,000.00
38	Handheld 2Mbps BER Tester	No.	257,472.00
39	Ethernet Tester	No.	430,661.00
40	Laser Light source (1310/1550 nm)	No.	56,726.00
41	Patch Cords (LC to LC/FC/PC) type 10 Mtrs length	Nos.	399.00
42	EPAX (16/16) with 2 E1 card wired for 128 ports along with 4 ft height stand	Nos.	123,718.00
43	2 Wire Telephone set	Nos.	5,322.00
44	Optical (1000 Mbps) to Ethernet converter	Nos.	21,200.00
45	Training on SDH equipment,UX,DAC & NMS( for complete package)	Man-days	60,000.00

46	<b>Maintenance Charges</b>		
46(a)	SDH for one year	year	90,000.00
47	<b>Repair of SDH faulty cards</b>	per unit per year	
47(a)	Power supply card		37,500.00
47(b)	OAM & Fan Tray Unit		40,000.00
47(c)	Cross-connect & Timing Card -4*STM-16 interfaces		87,500.00
47(d)	SDH Optical Interface card		60,000.00
47(e)	Ethernet Interface card		52,500.00
47(f)	63* E1 2Mbps Interface card		50,000.00
48	<b>CVT/CC with connecting clamps</b>		
48(a)	420 KV , 4400 pF	No.	389,929.00
48(b)	245 KV , 4400 pF	No.	258,313.00
48(c)	145 KV , 4400 pF	No.	237,192.00
49	<b>Wavetrap along with connecting clamps, connector, insulators and structure suitable for pedestal mounting etc.</b>		
49(a)	400 kV, 0.5 mH, 3150A	No.	401,036.00
49(b)	220 kV, 0.5 mH, 1600A	No.	329,913.00
49(c)	132 kV, 0.5 mH, 1250 A	No.	328,809.00
50	<b>75 ohms/125 ohms Co-axial cable</b>	KM	168,501.00
51	Single Channel PLCC Panel (with Speech and Data support and inbuilt Protection)		581,479.00
52	Twin Channel PLCC Panel (with Speech and Data support and inbuilt Protection)		675,911.00
53	VFT Modem	No.	188,460.00
54	Protection Signalling Equipment		
55(a)	Analog Protection Coupler	No.	190,851.00
55(b)	Digital Protection Coupler	No.	437,179.00
56	Print Testing Kit	No.	101,027.00
57	EPAX (24/8) with 24 telephones	No.	488,601.00
58	Telephone set		
59	Four Wire Telephone Set	Set	8,376.00
60	Two Wire Telephone Set	Set	2,233.00
61	48V DCDB	Set	235,251.00
62	<b>VRLA BATTERY SET</b>		
62(a)	48V/200AH VRLA Battery	No.	62,004.00
62(b)	48V/300AH VRLA Battery	No.	114,142.00
62(c)	48 V/400AH VRLA Battery	No.	131,231.00
62(d)	48 V/500AH VRLA Battery	No.	197,745.00
63	<b>FLOAT CUM BOOST CHARGER(SCR TYPE)</b>		
63(a)	50 V/50Amps	No.	179,889.00
63(b)	50 V/75Amps	No.	220,498.00
63(c)	50 V/100Amps	No.	255,888.00
63(d)	50 V/125Amps	No.	281,294.00
64	SMPS based Battery charger of 50A suitable for 48 volt VRLA battery and upgradation facilities	No.	135,378.00
65	SMPS based Battery charger of 75A suitable for 48 volt VRLA battery and upgradation facilities	No.	154,909.00
66	SMPS based Battery charger of 125A suitable for 48 volt VRLA battery and upgradation facilities	No.	199,423.00
67	VHF Transreceiver with battery charger	No.	7,512.00
68	<b>25sq.mm Multistrand Single Core DC Power Supply Cable</b>	Mtr.	210.00
69	<b>Jelly Filled Armoured Telephone Cable</b>		
70(a)	25 pair	Mtr.	240.00
70(b)	10 pair	Mtr.	147.00
70(C)	5 pair	Mtr.	89.00
71	<b>Coupling Device</b>	No.	129,043.00

72	<b>Armoured control Cable</b>		
72(a)	2Core, 2.5 mm2	KM	95,173.00
72(b)	5 Core, 2.5 mm2	KM	176,260.00
72( c)	14 Core,2.5mm2	KM	416,840.00
73	<b>Isolation Transformer</b>		
73(a)	Rated capacity minimum 10 kVA	No.	72,412.00
73 (b)	Rated capacity minimum 20kVA	No.	106,749.00
74	Earthing for communication equipments		11,897.00
75	Selective Level Meter-cum-Level Generator/Oscillator (Make " ELECTRONIKA" or Equivalent)	No.	567,737.00
76	Digital Multimeter(Make " FLUKE" or Equivalent)	No.	114,472.00
77	Level Generator/Oscillator	No.	316,787.00
78	Frequency Counter	No.	111,680.00
79	Dual Trace Oscilloscope	No.	256,865.00
80	Tools & Tackle (Make " TAPARIA"/ Equivalent)		
80(a)	Screw Driver set no. with neon type	Each	312.00
80(b)	Digital line tester	Each	187.00
80(c)	Insulated Cutting Plier	Each	312.00
80(d)	Long Nose Plier 1430 6"	Each	262.00
80(e)	Wire stripping WS06	Each	80.00
80(f)	Double Ended Spanner	set	375.00
80(g)	Small Screw Driver Bit 31 Nose Bit Set BS-31	set	500.00
81	Nut bolts and screw(small size)	per cent	125.00
82	Toggle Switches	No.	37.00
83	Push Button switch	No.	37.00
84	3 to 27 v DC buzzer	No.	62.00
85	Hookup wire	Mtr.	12.00
86	Flexible wire	Mtr.	12.00
87	PVC Adhesive tape	No.	50.00
88	Solder wire	kg	5,000.00
89	Tweezer	No.	62.00
90	Wire cutter	No.	187.00
91	Multimeter SANWA N-300(Analog)	No.	2,500.00
92	AC millivoltmeter Analog	No.	6,250.00
93	Soldering Iron 65 watt,35 watt	Each	500.00
94	Desoldering wick	kg	1,250.00
95	Desoldering Pump "TONY " Make	Each	250.00
96	Loop Bracket		262.00
97	Pigtail		1,447.00
98	Zero DB coupling (Square type)	no.	662.00
99	Zero DB coupling (Round type)	no.	550.00
100	Rx Media converter	each	2,200.00
101	Wall mount Rack 4U	each	2,500.00

<b>BIHAR STATE POWER TRANSMISSION COMPANY LIMITED</b>			
<b>SCHEDULE OF RATES FOR TELECOM RELATED 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 Item</b>	<b>Unit</b>	<b>Unit Erection Price (in Rs.)</b>
1	Laying of optical fibre approach cable in swithyard of 400kV,220kV,132kv including hardware:24 fiber	km	53,199.00
2	Laying of optical fibre approach cable in swithyard of 400kV,220kV,132kv including hardware: 48 Fiber	km	55,835.00
3	Laying of HDPE pipe in trenches in 400kV,220kV,132kv gss	km	11,958.10
4	<b>Stringing of DWSM type optical fibre cable on 132kV, 220kV line sections:</b>		
4(a)	For plane area	km	34,651.80
4(b)	For agency or tribal area(25% extra on plane area)	km	43,313.60
4(c)	For Hill area(40% extra on plane area)	km	48,512.75
4(d)	For interior area(40% extra on plane area)	km	48,512.75
4(e)	for municipal corporation area(upto 12 km from municipality)(25% extra for plane area)	km	43,313.60
4(f)	for municipalites (upto 12 km from municipality)(20% extra for plane area)	km	41,581.70
5	Fixing of tension clamp set of OFC on 132kV & 220 kV towers	per set	2,374.75
6	Fixing of suspension clamp set of OFC on 132kV & 220 kV towers	per set	1,956.15
7	Fixing of tension clamp set of OPGW on 400kV lines	per set	2,873.85
8	Fixing of suspension clamp set of OPGW on 400kV lines	per set	2,454.10
9	Fixing of splice box on 132kV & 220 kV towers	each	3,574.20
10	Fixing of splice box on 400kV towers	each	4,467.75
11	Fixing of vibration dampers on 132kV & 220 kV towers	per set	1,110.90
12	Fixing of vibration dampers on 400 kV towers	per set	1,415.65
13	Splicing charges for OFC fibers laid on 132kV, 220kV, 400 kV lines in plane areas/forest/ Hill areas/ municipal areas separetaly for each		
13(a)	For plane area	each fibre splicing	564.65
13(b)	For agency or tribal area		706.10
13(c)	For Hill area		788.90
13(d)	For interior area		788.90
13(e)	for municipal corporation area(upto 12 km from municipality)		706.10
13(f)	for municipalites (upto 12 km from municipalities)		677.35
14	Erection of RCC Joint Chambers	no	4,687.40
15	Blowing(laying) unarmoured UG OFC 24/48 (DWSM) in the existing HDPE duct in the case of underground works	km	26,402.85
16	Fixing of DWSM type Ofc to the tower members with ties , clamps etc		
16(a)	for 220kV/132kV	each	1,949.25
16(b)	for 400kV	each	2,436.85
17	Laying of areal type OFC on 33kV/11kV/ HT/LT poles	km	11,479.30
18	Laying of Cat5E/6 cables	km	8,688.25
19	Laying of Cat5E/6 cables in with conduit pipes along with accessories	each	13,365.30
20	Fixing of 6U*19 inch rack in offices	each	371.45
21	Loading/unloading charges for RTU/OLTE/Mux equipment	each	1,039.60
22	<b>Dismantling of RTU/OLTE/Mux equipment:</b>		
22(a)	RTU	each	9,060.85
22(b)	OLTE/Mux	each	3,565.00
22(c)	Dismantling of 24/48F ADSS cable from 132kV, 220kV S/S line	each	17,325.90
22(d)	Dismantling of 24/48F OPGW cable from 132kV, 220kV, 400kV S/S line	each	36,810.35
22(e)	Dismantling of bringing down splice box on 132kV, 220kV towers	each	1,785.95
22(f)	Dismantling of bringing down splice box on 400kV towers	each	2,233.30

23	Hiring charge of 5 KVA Diesel generator per day for attending OFC break down work	each	1,054.55
24	Hiring charge of 230V Ac inverter(2kVA) battery back up for attending OFC breakdown work	each	1,054.55
25	Hiring charge of tent 8*8*10 cubic fit close tent shutter for attending splicing work for attending OFC breakdown work	each	741.75
26	<b>UFG cableing works rates</b>		
26(a)	Survey of route providing as built drawing documentation for unarmoured underground optical fibre cable	KM	20,315.00
27	<b>Excavation and Backfilling</b>		
27(a)	All types of soil, road, footpath,including PCC, sand, warning brick/ stone, semi circular RCC split cover etc. For underground fibre optic cable	km	162,500.00
27(b)	warning tape including supply and installation	km	25,252.70
27(c)	laying of PLB HDPE pipe O.D. 40mm	km	27,130.00
28	<b>Installation of HDPE pipe by trenchless drigging</b>		
28(a)	0-10 mtrs	mtr	775.00
28(b)	>10 and upto 30 mtrs	mtr	775.00
28(c)	More than 30 mtrs	mtr	775.00
29	Laying of GI pipe 100mm nominal bore , including accessories	mtr	214.50
30	laying of RCC hume pipe (NP3), 100mm diameter(inside), including accessories	mtr	321.20
31	Laying of unarmoured underground optical fibre cale 24F DWSM	km	146,250.00
32	Installation of joint box in underground (including splicing and testing) 24 Fibre	no	5,503.90
33	Erection of RCC Joint Chambers	no	32,500.00
34	Installation of PLB HDPE pipe on wall in building premises including routing of OFC through it	mtr	424.60
35	Reinstatement of excated area/damage (in road, footpath etc.)	sq.mtrs	1,700.00
36	Erection of RTU panel	No.	16,564.60
37	Comprehensive Annual maintenance charge of RTU including repair of faulty cards etc.	No.	57,500.00
38	Pre Connectorized Optical fibre Patch Cords(10mtrs)-Pack of six(6) patch cord	Set	13,528.60
39	Services charges for Engineers on Call Basis for RTU/OPGW/FOTE/GPRS Modem/PLCC etc.		
39(a)	Fixed Cost per call (one time) (Inclusive of Travelling,Boarding,Lodging and fooding charges etc.)	per engineer/ per call	28,750.00
39(b)	Engineer Service charge	per engineer/day	11,500.00
40	<b>OPGW cable &amp; Accessories</b>		
40 (a)	Installation of 24 Fibre OPGW (Live Line) including Hardware sets for above 24 Fibre OPGW Fibre Optic cabling incl. all cable fittings& accessories except Joint Box	Km	88,142.00
40(b)	Installation of 24 Fibre OPGW (Off-Line) including Hardware sets for above 24 Fibre OPGW Fibre Optic cabling incl. all cable fittings& accessories except Joint Box	km	53,818.00

40(c)	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.	km	37,734.00
40(d)	2/3/4 way Joint Box (24 Fiber) including Coiling bracket as per requirement for looping/coiling of 30 meters of cable as per technical requirement	No.	6,928.00
40(e)	Installation of 48 Fibre OPGW (Live Line) including Hardware sets for above 48 Fibre OPGW Fibre Optic cabling incl. all cable fittings& accessories except Joint Box	Km	6,928.00
40(f)	2/3/4 way Joint Box (48 Fiber) including Coiling bracket as per requirement for looping/coiling of 30 meters of cable as per technical requirement	No.	9,850.00
41	<b>FODP</b>		
41(a)	FODP 48F Indoor type, rack mounted with FCPC coupling and pigtails	No.	17,176.00
41(b)	FODP 96F Indoor type, rack mounted with FCPC coupling and pigtails	No	28,450.00
42	<b>SDH Equipment (STM-4 MADM upto 5 MSP protected directions)</b>		
42(a)	Base Equipment (Common cards, Cross connect/control cards, Optical base card, Power supply cards, power cabling, other hardware& accessories including sub-racks, patch cords, DDF etc. fully equipped including Cabinet etc. & excluding (2) to (8) below	No.	7,158.00
43	<b>SDH Equipment(STM-16 MADM upto 3 MSP protected directions)</b>		
43(a)	Base Equipment (Common cards, Cross connect/control cards, Optical base card, Power supply cards, power cabling, other hardware& accessories including sub-racks, patch cords,DDF etc. fully equipped including Cabinet etc. excluding (2)&(3) below)		57,347.00
44	<b>Optical cards</b>		
44(a)	S4.1	No.	2,854.00
44(b)	L4.1	No.	2,854.00
44(c)	L4.2	No.	2,854.00
44(d)	Optical Line Interface <150 KM	No.	5,546.00
45	<b>Tributary Cards</b>		
45(a)	E1 interface card(Min. 63 nos.)	No.	10,960.00
45(b)	Ethernet interfaces 10/100 Mbps with Layer-2 switching (Min.16 nos. )	No.	495.00
46	<b>Synchronization Equipment</b>		
46(a)	GPS clock including all hardware & accessories	Set	6,056.00
47	Ip phone ( Alcatel/Lucent make alogwith license) (installaton at control room table and laying of CAT 6 cable for IP Phone from SDH equipment to Control room table)	Set	2,656.00
48	installation of indoor type joint box (6F/12F/24 F)	no.	50.00
49	laying of 6F optical cable	mtr	12.00
50	punching of RJ45 connector	no	12.00
51	Erection of Wavetrap		
51(a)	Fixing of Wavetrap on pedastal mounting insulator stack in 400KV	Each	6,664.00
51(b)	Fixing of Wavetrap on pedastal mounting insulator stack in 220KV	Each	5,400.00
51(c)	Fixing of Wavetrap on suspension mounting including jumpering in 132KV	Each	3,218.00
52	Erection of PLCC Panel		
53	Erection of Single channel PLCC Panel	Each	7,820.00



54	Erection of Twin channel PLCC Panel	Each	7,976.00
55	Erection of LMU	Each	1,150.00
56	Erection of 48V DCDB	Each	8,050.00
57	Erection of 48V DC/50A,75A Charger	Each	7,820.00
58	Erection of 48V DC/100A, 125A Charger	Each	9,578.00
59	EPAX (24/8) with 24 telephones	Each	6,361.00
60	Erection of Protection Signalling Equipment		
60(a)	Analog Protection Coupler	Each	5,180.00
60(b)	Digital Protection Coupler	Each	6,209.00
61	Erection,Commissioning and testing of 48V/200AH,300AH Battery Set	Each	8,050.00
62	Erection,Commissioning and testing of 48V/400AH,500AH Battery Set	Each	9,925.00
63	Laying of Coaxial Cable from switchyard gantry tower to communication room in existing trench	KM	15,806.00
64	Laying of 6 pair telephone cable in the trenches in 132KV, 220KV, 400KV	KM	11,500.00
65	Laying of cat 5E/6 cables in offices	KM	6,900.00
66	Laying of cat 5E/6 cables with conduit pipes along with accessories in offices	KM	13,365.00
67	Fixing of 6UX19 inch rack in offices for ERP works	Each	371.00
68	Laying of single pair telephone cable in the trenches in 132KV, 220KV, 400KV	KM	11,500.00
69	Laying of 25 sq.mm battery cable in control room in 132KV, 220KV, 400KV	KM	18,934.00
70	Laying of 5 pair telephone cable on overhead poles LT & HT	KM	11,500.00
71	Laying of single pair telephone cable on overhead poles LT & HT	KM	11,500.00
72	Laying of RF cable in 132KV, 220KV, 400KV SS	KM	18,176.00
73	Erection of Earth pit as per standards in 132KV, 220KV SS for communication purpose	Each	14,343.00
74	Erection of Earth pit as per standards in 400KV SS	Each	14,343.00
75	Erection of VSAT equipments in 132KV, 220KV, 400KV SS	Each	5,906.00
76	Loading/Unloading of DCDB	Each	6,792.00
77	Loading/Unloading charges of PLCC Panel in 132KV,220KV,400KV SS in to vehicle		
78	Single Channel PLCC Panel	Each	1,150.00
79	Twin Channel PLCC Panel	Each	1,150.00
80	Loading/Unloading charges of 48v/50A,75A Battery Charger	Each	1,150.00
81	Loading/Unloading charges of 48v/100A,125A Battery Charger	Each	1,380.00
82	Loading/Unloading charges of 48v Battery Set		
82(a)	200AH	Each	1,150.00
82(b)	300AH	Each	1,150.00
82(c)	400AH	Each	1,380.00
82(d)	500AH	Each	1,380.00
83	Loading/Unloading charges of LMU	Each	346.00

84	Loading/Unloading charges of EPAXs	Each	346.00
85	Loading/Unloading charges of Wavetrap		
85(a)	132KV	Each	690.00
85(b)	220KV & 400KV	Each	1,150.00
86	Dismantling of DCDB	Each	4,830.00
87	Dismantling of 48V PLCC Battery Charger		
87(a)	50A,75A	Each	4,692.00
87(b)	100A,125A	Each	4,789.00
88	Dismantling of 48V/200AH,300AH Battery Set	Each	4,830.00
89	Dismantling of 48V/400AH,500AH Battery Set		4,963.00
90	Dismantling of PLCC Panel	Each	4,692.00
91	Dismantling of LMU	Each	690.00
92	Dismantling of EPBAXs	Each	2,070.00
93	Dismantling of Wavetrap		
93(a)	Wavetrap on pedestal mounting insulator stack in 400KV	Each	3,332.00
93(b)	Wavetrap on pedestal mounting insulator stack in 220KV	Each	2,700.00
93 (c )	Wavetrap on suspension mounting including jumpering in 132KV	Each	1,610.00
94	Battery Set Maintenance Items		
95	Distilled water	liter	17.00
96	petroleum jelly	liter	1,150.00
97	cotton	pcs	46.00
98	maintenance and cleaning labour charge	Each Set	1,150.00
99	services charges for PLCC		
99(a)	Engineer Service charge	per engineer/day	36,000.00
99(b)	services engineer charges for PLCC (including Travelling,Boarding,Lodging and fooding charges)	per engineer/day	50,000.00
99 (c )	services engineer charges for 48V battery charger (including Travelling,Boarding,Lodging and fooding charges)	per engineer/day	20,000.00
100	Installation charge of Air Condition	Each	2,500.00
101	Dismantling charge of Air Condition	each	1,500.00
102	Air Condition Maintenance charges		
102 (a)	Services charge(indoor and outdoor)	Each	1,000.00
102(b)	Gas Filling Charge	Each	4,000.00
102(c )	Annual Maintenance with all spares	Each	8,000.00
102(d)	Annual Maintenance without spares	Each	5,000.00
103	Annual Maintenance of OPGW cable	km	5,130.00
104	OTDR analysis of links	No.	6,250.00

<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.	7,705.00
2	Supply of 33 kV male contact of Isolator 1250 A	Nos.	8,855.00
3	Supply of 33 kV female contact of Isolator 1250 A	Nos.	9,430.00
4	Supply of 132 kV female contact of Isolator 1250 A	Nos.	10,005.00
5	Supply of 220 kV female contact of Isolator 1600 A	Nos.	11,155.00
6	Supply of 220 kV female contact of Isolator 2000 A	Nos.	16,643.00
7	Copper terminal plate for 132 kV female contact	Nos.	1,753.75
8	PG clamp for Moose to Moose	Nos.	1,806.16
9	T-connector for Moose to Moose	Nos.	1,747.89
10	Palm connector for Moose to Moose	Nos.	2,460.37
11	PG clamp for Zebra to Zebra	Nos.	1,373.35
12	T-connector for Zebra to Zebra	Nos.	1,464.90
13	Palm connector for Zebra to Zebra	Nos.	1,914.36
14	PG clamp for Panther to Panther	Nos.	1,747.89
15	T-connector for Panther to Panther	Nos.	1,340.05
16	Palm connector for Panther to Panther	Nos.	898.92
17	Single suspension fittings for panther	Nos.	3,745.49
18	Double suspension fittings for panther	Nos.	7,074.81
19	Suspension fittings for Earth wire	Nos.	1,023.77
20	Double suspension fittings for Zebra	Nos.	9,138.99
21	Single tension fittings for Zebra(Compression type)	Nos.	6,808.47
22	Double tension fittings for Panther(bolted type)	Nos.	7,307.86
23	Mid span joint for panther	Nos.	1,181.91
24	Mid span joint for Zebra	Nos.	1,772.86
25	Mid span joint for Earth wire	Nos.	532.69
26	T-connector for Zebra to Zebra	Nos.	1,464.90
27	T-connector for Moose to Panther	Nos.	1,661.33
28	T-connector for Moose to Dog	Nos.	1,814.48
29	T-connector for Zebra to Dog	Nos.	1,464.90
30	T-connector for Zebra to Moose	Nos.	1,914.36
31	PG clamp for Zebra to Moose	Nos.	1,747.89
32	PG clamp for Moose to Wolf	Nos.	1,856.10
33	PG clamp for Moose to Wolf(Horizontal)	Nos.	1,856.10
34	CT connector for zebra conductor with Bronze mounting	Nos.	4,411.35
35	CT connector for Moose conductor with Bronze mounting	Nos.	4,744.29
36	CT connector for Moose conductor T type with Bronze mounting	Nos.	4,744.29
37	Tripping Coil (with flange)	Nos.	3,662.26
38	Closing Coil (with flange)	Nos.	3,662.26
39	Supply of Silica gel	per kg	624.25
40	Tong tester clamp meter Range 0 to 300 A	Nos.	38,287.21
41	Multimeter range current 0 to 10 A, 60 Mohm, Frequency 60 Hz - 60 MHz	Nos.	20,641.80
42	AC Gas Filling (Charging)	Nos.	2,530.00
43	AC Compressor supply and installation	Nos.	10,925.00
44	Stabilizer of AC	Nos.	5,267.00
45	Copper Condenser Coil	Nos.	5,500.00

<b>BIHAR STATE POWER TRANSMISSION COMPANY LIMITED</b>			
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<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	(i) S.S.T 315 KVA 33/0.4 kV	Nos.	954,750.00
	(ii) S.S.T 630 KVA 33/0.4 kV	Nos.	1,319,450.00
2	<b>Circuit Breaker :-</b>		
	(i) 220KV SF-6 Circuit breaker	sets	1,465,663.96
	(ii) 132KV SF-6 Circuit breaker	sets	744,725.80
	(iii) 33KV Vacuum Circuit breaker	sets	270,497.50
	(iv) 25KV VCB	sets	250,705.00
3	<b>Isolators:-</b>		
	(i) 220KV L/L Isolator With E/S	Nos.	578,366.11
	(ii) 220KV L/L tandom Isolator	Nos.	481,661.99
	(iii) 220KV H/L Isolator	Nos.	526,744.17
	(iv) 132KV L/L Isolator With E/S	Nos.	285,328.68
	(v) 132KV L/L Isolator w/o E/S	Nos.	226,109.52
	(vi) 132KV L/L tandom Isolator	Nos.	266,069.64
	(vii) 132KV H/L Isolator	Nos.	282,636.90
	(viii) 33KV L/L Isolator With E/S	Nos.	109,518.50
	(ix) 33KV L/L Isolator w/o E/S	Nos.	92,365.00
	(x) 33KV L/L tandom Isolator	Nos.	202,878.40
	(xi) 33KV H/L Isolator	Nos.	102,921.00
	(xii) 220 KV Springless EHV Isolator (1600Amp)	Nos.	810,000.00
	(xii) 220 KV Springless EHV Isolator (2500Amp)	Nos.	870,000.00
	(xii) 132 KV Springless EHV Isolator (1600Amp)	Nos.	595,000.00
(xii) 132 KV Springless EHV Isolator (2500Amp)	Nos.	645,000.00	
(xii) 33 KV Springless EHV Isolator (1600Amp)	Nos.	498,000.00	
(xii) 33 KV Springless EHV Isolator (2500Amp)	Nos.	530,000.00	
4	<b>LA (Porcelain):-</b>		
	(i) 220KV LA	Nos.	53,074.80
	(ii) 132KV LA	Nos.	30,558.95
	(iii) 33KV LA	Nos.	8,625.00
	(iv) 25 KV LA	Nos.	8,625.00
5	<b>LA (Polymer):-</b>		
	(i) 220KV LA	Nos.	89,741.00
	(ii) 132KV LA	Nos.	56,563.00
	(iii) 33KV LA	Nos.	15,457.00
6	<b>CT (Porcelain):-</b>		
	(i) 220KV 1600/800/400/200/1 A	Nos.	359,155.15
	(ii) 220KV 1200/600/300/150/1 A	Nos.	347,500.00
	(iii) 132KV 1600/800/400/200/1 A	Nos.	189,666.89
	(iv) 132KV 1200/600/300/150/1 A	Nos.	184,785.21
	(v) 33KV 1600/800/400/200/1 A	Nos.	84,450.24
	(vi) 33KV 1200/600/300/150/1 A	Nos.	80,261.24
	(vii) 25 kV CT	Nos.	59,870.04
7	<b>CT (Polymer):-</b>		
	(i) 220KV 1600/800/400/200/1 A	Nos.	437,122.00
	(ii) 132KV 800/400/200/1 A	Nos.	258,912.00
	(iii) 132KV 1200/600/300/150/1 A	Nos.	258,912.00
	(iv) 33KV 800/400/200/1 A	Nos.	109,617.00
	(v) 33KV 600/300/150/1 A	Nos.	109,617.00

8	<b>PT:-</b>		
	(i) 220KV PT	Nos.	301,560.50
	(ii) 132KV PT	Nos.	139,000.00
	(iii) 33KV PT	Nos.	56,232.00
	(iv) 25KV PT	Nos.	53,960.00
9	<b>CVT:-</b>		
	220 kV CVT	Nos.	275,980.00
	132 kV CVT	Nos.	206,985.00
10	Capacitor Bank 12 MVAR		2,418,000.00
11	<b>SF-6 Gas</b>		
	(a) 52 Kg Gas cylinder	Nos.	68,834.00
	(b) 26 Kg Gas Cylinder	Nos.	36,767.00
12	<b>Protective Relays</b>		
	(a) Differential relay	Nos.	195,389.00
	(b) Distance prot. Relay	Nos.	147,015.00
	(c) O/C & E/F relay	Nos.	94,000.00
	(d) Master Trip Relay (VAJ) 86	Nos.	11,103.00
	(e) Tripping Relay	Nos.	5,453.00
	(f) Auxiliary Relay (Type -VAA)	Nos.	4,203.00
	(g) AC Supervision Relay	Nos.	2,377.00
	(h)DC Supervision Relay	Nos.	2,377.00
	(i) Under Voltage Relay	Nos.	55,779.00
	(j)Over and under frequency Relay	Nos.	55,112.00
	(k)REF Relay	Nos.	51,349.00
	(i) LBB Relay	Nos.	52,290.00
	(m) ODS Switch	Nos.	4,279.00
(n)Trip Ckt. Supervision Relay (VAX) (95)	Nos.	3,540.00	
13	<b>Control &amp;Relay Panel</b>		
	(i) 220/132KV Transformer control & protection Panel	Nos.	1,564,494.50
	(ii) 220 KV Bus coupler control & protection Panel	Nos.	865,294.50
	(iii) 220KV Line control & protection panel	Nos.	868,744.50
	(iv) 132/33KV Transformer Panel	Nos.	1,043,544.50
	(v) 132 KV Bus coupler control & protection Panel	Nos.	465,094.50
	(vi) 132KV Line control & protection panel	Nos.	466,244.50
	(vii) 132/25KV Transformer Panel B/C Panel	Nos.	1,035,000.00
	(viii) 25 KV line feeder Panel	Nos.	345,000.00
	(ix) 33KV Line control & protection panel	Nos.	345,759.00
	(ix) 33KV Bus coupler control & protection panel	Nos.	330,809.00
	<b>Measuring Instrument</b>		
	(a)Digital multimeter	Nos.	14,260.00
	(b)Tong tester/ Clamp meter	Nos.	26,450.00
	(c)Battery impedance tester/ analyser	Nos.	361,670.00
	(d) Battery specific gravity tester	Nos.	920.00
	(e) IR tester 5 KV	Nos.	322,000.00
	(f) IR tester 10 KV	Nos.	625,000.00
	(g)BDV oil test kit(100KV)	Nos.	690,000.00
	(h) Leakage current analyser for surge arrestor(LA)	Nos.	681,500.00
	(i) Tower footing impedance/resistance test kit	Nos.	349,600.00
	(j) DC earth fault locator	Nos.	270,000.00
	(k)Punctured insulator disk detection test kit	Nos.	1,265,000.00
	(l) CT & PT/ CVT test kit	Nos.	2,588,000.00
	(m) Transformer winding resistance meter	Nos.	653,750.00
	(n) Transformer turns ratio meter	Nos.	638,500.00
	(o) CB time interval meter	Nos.	115,000.00

14	(p) Contact resistance meter 100A ( CB, Isolators etc)	Nos.	322,025.00
	(q) Digital earth resistance meter (stakeless)	Nos.	299,300.00
	(r) CB analyser with dynamic contact resistance meter(DCRM)	Nos.	3,317,575.00
	( s ) Automatic relay test kit	Nos.	3,122,846.00
	(t) Phase sequence meter	Nos.	5,750.00
	(u) sf6 gas leakage detector	Nos.	67,850.00
	(v) sf6 gas refilling device with evacuation capacity	Nos.	563,500.00
	(w) sf6 gas evacuation and, drying, filling plant	Nos.	3,427,000.00
	(x) Thermovision Camera High end (640x480 pixels)	Nos.	2,305,000.00
	(y) Thermovision Camera Low end (320x240 pixels)	Nos.	1,054,000.00
	(z) Capacitance and tan delta test kit	Nos.	2,933,147.00
	(aa) Primary current injection test kit upto 2000A (conventional)	Nos.	887,762.00
	(ab) Contactless type Potential detector	Nos.	30,483.00
	(ac) Leakage insulator detector cum Tower footing impedance measuring kit	Nos.	2,321,158.00
	(ad) Multifunction test kit	Nos.	9,160,333.00
	(ae) Contact Resistance meter (200 A)	Nos.	322,000.00
	(af) Contact Resistance meter (600 A)	Nos.	875,000.00
	(ag) Digital earth resistance tester (stakes)	Nos.	110,000.00
	(ah) Automatic Primary current injection test kit (1000 A)	Nos.	2,337,430.00
	(ai) Automatic Primary current injection test kit ( 2000 A)	Nos.	2,732,930.00
(aj) Leakage Insulator Detector with ultrasound partial discharge	Nos.	3,233,333.00	
(ak) Leaky Insulator Detector	Nos.	3,231,800.00	
(al) Insulated Aerial Work Platfom mounted on vehicle for live line	Nos.	200,000,000.00	
(am) Portable Dissolved Gas Analyser	Nos.	4,577,500.00	
(an) Online Dissolved Gas Analyser	Nos.	3,857,000.00	
(ao) Partial Discharge Camera (PD) Test Kit	Nos.	2,150,000.00	
(ap) Complete set of Hotline Maintenance tools set for live line maintenance of GSS/Line	Set	49,400,000.00	
(aq) SF6 Gas Analyzer	Nos.	20,000.00	
(ar) Sweep frequency Analyzer	Nos.	2,252,257.00	
15	Rechargeable long range search light model-AEL 5W-LED-5 model	Nos.	24,150.00
<b>HT Cable &amp; Connector</b>			
16	132kV XLPE Copper Power Cable 1C x 630 sq.mm.	KM	10,873,943.00
17	132kV 1C x 630 sq.mm. Cable End Termination kits	Nos.	262,692.15
18	132kV 1C x 630 sq.mm. Cable Jointing kits (Straight Through Joints)	Nos.	244,466.25
19	132kV 1C x 630 sq.mm. Cable End Termination kits (dry type)	Nos.	750,000.00
20	33kV XLPE Copper Power Cable 1C x 630 sq.mm.	KM	5,454,447.00
21	33kV XLPE Copper Power Cable 1C x 240 sq.mm.	KM	4,474,242.00
22	33kV 1C x 630 sq.mm. Cable End Termination kits	Nos.	16,790.00
23	33kV 1C x 240 sq.mm. Cable End Termination kits	Nos.	13,070.00
24	33kV 1C x 630 sq.mm. Cable Jointing kits (Straight Through Joints)	Nos.	15,626.00
25	33kV 1C x 240 sq.mm. Cable Jointing kits (Straight Through Joints)	Nos.	12,164.00
26	Blockage free dewatering pump ( 5 HP ) with 1000 meter water discharge pipe and 100 meter power cable	Nos.	1,115,000.00
27	Portable LED based Emergency Lighting System with Generator set	Set	380,000.00

<b>BIHAR STATE POWER TRANSMISSION COMPANY LIMITED</b>			
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<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>
28	EHV Grade Transformer Oil (Type-II uninhibited) in non returnable drums	KL	83,266.00
29	<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.)		
	(i) High tensile steel	MT	108,644.59
	(ii) Mild steel	MT	105,318.78
	(iii) Hexagonal bolts and nuts including Step bolts	MT	138,959.05
	(iv) Anti Theft Bolt	MT	138,959.05
30	<b>GI Earth Wire</b> GI(7/10) SWG Earth Wire	KM	66,596.50
31	Emergency restoration system including structures, hardwares, tool sets and storage container ( suitable of 16 suspension/tension towers)	set	195,640,357.00
32	<b>Maintenance free Battery Bank (VRLA )</b>		
	(i) 250V, 300 AH	Nos.	629,127.05
	(ii) 250V, 500 AH	Nos.	979,415.90
33	<b>Lead acid Battery Bank</b>		
	(i) 250V, 300 AH	Nos.	707,353.50
	(ii) 250V, 500 AH	Nos.	1,178,922.50
34	<b>Battery charging equipment comprising of float &amp; float cum boost charger unit for charging 125 nos cells of 2 volt per cell Battery sets.</b>		
	Suitable for charging of VRLA Type battery bank		
	(i) 250V,60/50 A	Sets.	433,245.88
	(ii) 250V, 45/30 A	Sets.	346,879.33
	Suitable for charging of Tubular Type battery bank		
	(i) 250V,60/50 A	Sets.	457,202.62
	(ii) 250V, 45/30 A	Sets.	359,004.37
35	<b>Control Cable :-</b>		
	(i) 2C X 2.5 mm2	KM	108,323.19
	(ii) 3C X 2.5 mm2	KM	138,646.49
	(iii) 5C X 2.5 mm2	KM	206,068.75
	(iv) 7C X 2.5 mm2	KM	264,669.08
	(v) 10C X 2.5 mm2	KM	351,334.78
	(vi) 14C X 2.5 mm2	KM	491,415.85
	(vii) 19C X 2.5 mm2	KM	645,730.10
	(viii) 27C X 2.5 mm2	KM	899,550.97
36	<b>Power Cable:-</b>		
	3.5C X 300 mm2	KM	1,254,509.00
	3.5C X 150 mm2	KM	605,540.00
	3.5C X 70 mm2	KM	374,217.03
	3.5C X 35 mm2	KM	309,538.89
	4C X 16 mm2	KM	174,102.54
	4C X 6 mm2	KM	114,245.79
	2C X 6 mm2	KM	64,187.00

37	<b>Long rod Polymer insulator (ACSR Panther Conductor)</b>		
	(i) Long Rod Polymer Insulator 70 KN of light weight	No.	4,918.89
	(ii) Long Rod Polymer Insulator 90 KN of light weight	No.	5,276.99
38	<b>Long rod Polymer insulator (ACSR Zebra Conductor)</b>		
	(i) Long Rod Polymer Insulator 90 KN of light weight	No.	5,275.75
	(ii) Long Rod Polymer Insulator 120 KN of light weight	No.	5,633.85
39	<b>Long rod Polymer insulator (ACSR Moose Conductor)</b>		
	(i) Long Rod Polymer Insulator 120 KN of light weight	No.	5,633.85
	(ii) Long Rod Polymer Insulator 160 KN of light weight	No.	8,523.51
40	<b>Long rod Porcelain insulator (ACSR Panther Conductor)</b>		
	(i) Long Rod Porcelain Insulator 70 KN of light weight	No.	6,600.00
	(ii) Long Rod Porcelain Insulator 90 KN of light weight	No.	7,800.00
41	<b>Long rod Porcelain insulator (ACSR Zebra Conductor)</b>		
	(i) Long Rod Porcelain Insulator 90 KN of light weight	No.	6,340.00
	(ii) Long Rod Porcelain Insulator 120 KN of light weight	No.	7,000.00
42	<b>Long rod Porcelain insulator (ACSR Moose Conductor)</b>		
	(i) Long Rod Porcelain Insulator 120 KN of light weight	No.	7,042.31
	(ii) Long Rod Porcelain Insulator 160 KN of light weight	No.	10,654.39
43	Diesel Generator Set along with control panel (40 kVA)	Set	995,070.00
44	<b>Portable Fire Extinguisher:-</b>		
	(i) 4.5 kg DCP type	No.	6,097.30
	(ii) 4.5 kg Co2 type	No.	8,585.90
	(iii) 22.5 kg Co2 type	No.	25,477.10
	(iv) Trolley mounted DCP type capacity-25kg with CO2 gas cylinder (capacity-1 kg) fitted outside	No.	27,750.00
	(v) CO2 type wheel mounted capacity-6.5kg	No.	11,712.00
	(vi) 6 Kg DCP type portable fire extinguisher (maintenance free and corrosion free ) composite vessel	No.	42,500.00
	(vii) Complete set of FB5x	No.	13,500.00
	(viii) Mechanical foam of 20 litre capacity	No.	19,460.00
	(ix) Trailer mounted mechanical foam type extinguisher of capacity 150 litre with CO2 gas cylinder (capacity-2 kg) fitted on trailer	No.	81,600.00
	(x) High Pressure Water Mist 9 litre back pack type with composite PET linear vessel and 2 litre composite with PET linear air cylinder	No.	500,000.00
	(xi) High Pressure Water Mist 50 litre trolley mounted carbon composite with PET linear vessel and 6.8 litre composite with PET linear air cylinder	Set	800,000.00
(xii) Combo unit of Fire Fighting with self-contained breathing apparatus (SCBA)	Set	615,000.00	



	<b>Conductor:-</b>		
45	(i) ACSR Panther Conductor	KM	241,048.00
	(ii) ACSR Zebra Conductor	KM	415,668.00
	(iii) ACSR Moose Conductor	KM	464,563.00
	(iv) HTLS Conductor [Capacity - 240 MVA, 1050 A ] (equivalent to Panther)	KM	1,027,447.00
	(v) AL-59 Zebra Conductor	KM	427,000.00
46	<b>HARDWARE FITTINGS &amp; ACCESSORIES FOR HTLS CONDUCTOR</b>		
	(i) Single Suspension T Fitting w/o Clamp	Set	5,215.00
	(ii) Single Suspension Pilot Fittings w/o Clamp	Set	8,029.00
	(iii) Double Suspension Fittings w/o Clamp	Set	11,736.00
	(iv) Single Tension Fittings w/o Clamp	Set	5,360.00
	(v) Double Tension Fittings w/o Clamp	Set	13,432.00
	(vi) Single Suspension Clamp	Set	9,955.00
	(vii) Double Suspension Clamp	Set	26,516.00
	(viii) Dead End Tension Clamp	Set	105,823.00
	(ix) Double Tension Clamp	Set	121,017.00
	(x) Terminal Pad without Holes	Set	11,291.00
	(xi) Terminal Pad with Holes	Set	11,034.00
	(xii) MSCJ	Nos.	121,608.00
	(xiii) Repair Sleeve	Nos.	16,912.00
(xiv) Vibration Damper	Nos.	15,301.00	
47	DLMS compliant 0.2s Class ABT type Energy meter with implementation of 100% metering, data acquisition and online ABT monitoring for transmission & sub-transmission substations upto 33KV level, monthly energy accounting	No.	99,625.00
48	Time Synchronization Equipment	No.	185,370.00
49	200 MVA Three phase power transformer 220/132/33 KV Auto Transformer with oil complete with all accessories, marshalling boxes, terminal connectors etc. with detachable type/portable type on line oil filtration system	No.	100,148,120.00
50	160 MVA Three phase power transformer 220/132/33 KV Auto Transformer with oil Complete with all accessories, marshaling boxes, terminal connectors etc.	No.	83,670,809.00
51	80 MVA Three phase 132/33 KV Power Transformer with oil Complete with all accessories, marshaling boxes, terminal connectors etc.	No.	71,309,000.00
52	50 MVA Three phase 132/33 KV Power Transformer with oil Complete with all accessories, marshaling boxes, terminal connectors etc.	No.	41,538,801.00
53	200 MVA Three phase power transformer 220/132/33 KV Auto Transformer with oil complete with all accessories, marshalling boxes, terminal connectors etc. with detachable type/portable type on line oil filtration system [With Price Variation]	No.	90,133,308.00
54	160 MVA Three phase power transformer 220/132/33 KV Auto Transformer with oil Complete with all accessories, marshaling boxes, terminal connectors etc. [With Price Variation]	No.	75,303,728.10
55	80 MVA Three phase 132/33 KV Power Transformer with oil Complete with all accessories, marshaling boxes, terminal connectors etc. [With Price Variation]	No.	64,178,100.00
56	50 MVA Three phase 132/33 KV Power Transformer with oil Complete with all accessories, marshaling boxes, terminal connectors etc. [With Price Variation]	No.	37,384,920.90
57	Hydraulic Compressor machine (Suitable for ACSR Moose, Zebra & Panther Conductor with separate die sets)	No.	859,342.00
58	3-Pole neutral switch	No.	8,593.00
59	Portable Emergency light with Inflatable ballon	No.	190,112.00

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.)
	<b>Fire extinguisher accessories</b>		
60	(i) Hose pipe for CO2 type (4.5 kg)	Nos.	675.00
	(ii) Hose pipe for CO2 type (22.5 kg)	Nos.	2,338.99
	(iii) Hose pipe for DCP type (25 kg)	Nos.	1,380.00
	(iv) DCP to CO2 pressure pipe (25 kg)	Nos.	922.88
	(v) DCP wheel assembly (25 kg)	Nos.	2,530.00
	(vi) CO2 wheel assembly (22 kg)	Nos.	2,530.00
	(vii) Hose pipe for foam type (50 L)	Nos.	1,380.00
	<b>Clamps and Connectors</b>		
61	(i) 132 kV CT connector for twin moose	Nos.	3,047.50
	(ii) 33 kV BPI connector for twin moose	Nos.	1,685.00
	(iii) 33 kV LA connector for twin moose	Nos.	1,773.60
	(iv) Palm connector for LA to single moose as per sample	Nos.	1,478.00
	(v) Palm connector for double moose	Nos.	2,039.64
	(vi) Palm connector suitable for quad moose	Nos.	3,546.00
	(vii) Interconnector for twin moose to single moose (T type outer horizontal and inner vertical) as per sample	Nos.	2,100.00
	(viii) T-connector for 3" IPS tube ACSR Moose conductor	Nos.	2,415.00
	(ix) T-connector for 3" IPS tube ACSR Panther conductor	Nos.	2,039.64
	(x) T-connector for double ACSR Moose to Single ACSR Moose conductor	Nos.	3,200.00
	(xi) T connector for moose-to-moose 1600 A.	Nos.	1,552.50
	(xii) 33kV 1600 A palm Connector isolator to twin moose.	Nos.	2,039.64
	(xiii) 33kV 1600 A Palm Connector isolator to twin moose (Horizontal take off)	Nos.	2,039.64
	(xiv) 33kV 1600A Palm Connector for isolator to single moose. (Horizontal Take off)	Nos.	1,699.70
	(xv) 33kV 1600 A CT stud to twin moose (Horizontal Take off)	Nos.	3,565.00
	(xvi) Terminal connector suitable for isolator to receive 3" IPS AL Tube Rigid (through type for tandem isolator), 1600 A rated (3" IPS AL Tube dimension OD-88.9mm, Thickness - 7.62mm, Isolator terminal Pad Type (dimension - 100*100*20mm)	Nos.	1,910.00
	(xvii) Palm connector to double ACSR Moose	Nos.	2,000.00
	(xviii) Transformer Bushing connector	Nos.	6,250.00
	132 kV CT Connector (Moose) for Single	Nos.	2,748.00
62	CT/CVT junction box	Nos.	5,000.00
63	BMK	Nos.	20,000.00
64	33 kV 2500 A female contact of HL isolator with Cu terminal	Nos.	10,800.00
65	33 kV 2500 A male contact of HL isolator	Nos.	11,550.00
66	132 kV 2500 A male contact of HL isolator	Nos.	18,050.00
67	132kV 1600A Female contact for high level isolator with Cu terminal	Nos.	9,700.00
68	Aluminium terminal pad straight type for 250x100x12mm for 33/132kV female contact.	Nos.	1,220.00
69	Aluminium terminal L-type for jumper size (125+125)x100x12mm for 132kV female contact	Nos.	1,220.00
70	Aluminium terminal T-type for 33kV 2500A high level isolator size (250+125)x100x12mm for 33kV female contact.	Nos.	1,830.00
71	12 W pathfinder precision pipe & cable locator with GPS/BT	Nos.	311,850.00
72	Silica gel breather(Big size)	Nos.	7,130.00
73	Silica gel breather(small size)	Nos.	5,232.50
74	Hydraulic/Gear conductor cutter suitable for ACSR Moose,Zebra,Panther etc. (Pressure 15kg)	Nos.	65,550.00
75	Top Blade for this cutter	Nos.	14,375.00
76	Cutting Blade	Nos.	5,175.00
77	Safety belt	Nos.	1,610.00
78	Hand Gloves	Nos.	1,207.50
79	Gum Boot	Nos.	1,121.25
80	Rain Coat	Nos.	1,897.50

81	Battery (AH-150 / 12V) suitable for DG Set	Nos.	15,685.00
82	132kv Digital Voltmeter	Nos.	2,300.00
83	33kv Digital Voltmeter	Nos.	2,300.00
84	132kv Digital MVAR meter	Nos.	4,933.50
85	33kV kv Digital MVAR meter	Nos.	4,933.50
86	132kv Digital frequency meter	Nos.	2,530.00
87	33KV Digital ampere meter	Nos.	2,530.00
88	132Kv Digital ampere meter	Nos.	2,530.00
89	132kV Digital Megawatt meter	Nos.	4,933.50
90	33 kV Digital Megawatt meter	Nos.	4,933.50
91	Circuit breaker TNC switch	Nos.	9,200.00
92	Circuit breaker L/R switch	Nos.	5,750.00
93	Indication lamp LED Red	Nos.	402.50
94	Indication lamp LED Green	Nos.	402.50
95	Indication lamp LED Blue	Nos.	402.50
96	Indication lamp LED White	Nos.	402.50
97	32Amp AC TPN	Nos.	1,385.75
98	20Amp AC MCB	Nos.	1,351.25
99	20 Amp DC MCB	Nos.	1,035.00
100	10A DC MCB	Nos.	2,175.80
101	Contactora 63A TPN	Nos.	2,070.00
102	6A MCB Havells make	Nos.	437.00
103	20A MCB Havells make	Nos.	666.54
104	Choke/ ballast 400W	Nos.	2,467.90
105	Ignitor Havells	Nos.	108.10
106	400W HPSV lamp	Nos.	510.00
107	PVC tape (10 mtr.)	Nos.	15.00
108	AC outdoor unit stand	Nos.	2,000.00
109	RO water purifier (10 litre storage)	Nos.	20,000.00
110	Water Cooler (60 litre/hour)	Nos.	30,000.00
111	Safety Rubber Mat 2X1 meter, thickness 6mm	Nos.	5,625.00
112	Gas filling device Universal type	Nos.	56,900.00
113	Capacitor for 400 Watt Sodium Vapour Lamp	Nos.	320.00
114	Ignitor for 400 Watt Sodium Vapour Lamp	Nos.	108.00
115	Street light 45/50 Watt	Nos.	2,900.00
116	Street light 90/100 Watt	Nos.	5,725.00
117	Street light 150 Watt	Nos.	6,480.00
118	Flood light 120 Watt Cool type	Nos.	6,830.00
119	Flood light 50 Watt Cool type	Nos.	3,500.00
120	Flood light 400 Watt Cool type	Nos.	16,200.00
121	Annunciator with inbuilt hooter (18 windows)	Nos.	40,000.00
	<b>C-Wedge Connector for overhead lines</b>		
122	(i) Pather to Panther	Nos.	4,212.00
	(ii) Zebra to Zebra	Nos.	5,994.00
	(iii) Moose to Moose	Nos.	7,371.00
	(iv) Panther to Moose	Nos.	11,232.00
	(v) Zebra to Moose	Nos.	6,237.00
	(vi) HTLS to HTLS Conductor equivalent to Panther & Zebra	Nos.	7,128.00
	(vii) Torque tool for C-Wedge connector installation	Nos.	135,000.00
123	Line Differential Relay	Nos.	526,875.00

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.	42,458.45
2	(i)Erection, testing and commissioning of 220 KV PT	Nos.	10,615.00
	(ii)Erection, testing and commissioning of 132 KV CVT/PT	Nos.	7,548.65
3	Erection of 32 KV LL Isolator	Nos.	10,968.79
4	Erection, testing and commissioning of 132 KV Transformer's control & Relay panel.	Nos.	7,548.65
5	Erection, testing and commissioning of 33 KV VCB	Nos.	16,511.62
6	Erection, testing and commissioning of 33 KV CT	Nos.	2,476.86
7	Erection, testing and commissioning of 33 KV LA	Nos.	1,415.52
8	Erection, testing and commissioning of 33 KV LL Isolator.	Set	2,947.90
9	Erection, testing and commissioning of 220 KV CB	Nos.	100,249.11
10	(i) Erection, testing and commissioning of 220 KV CT	Nos.	10,614.61
	(ii) Erection, testing and commissioning of 132 KV CT	Nos.	7,549.00
11	i) Erection, testing and commissioning of 220 KV Isolator.	Set	10,968.79
	ii) Erection, testing and commissioning of 132 KV Isolator	Set	10,968.79
12	i) Erection, testing and commissioning of 220 KV LA.	Nos.	3,302.08
	ii) Erection, testing and commissioning of 132 KV LA.	Nos.	3,302.08
13	<b>Laying of cables</b>		
	i)10C X 2.5mm2 to 18C X 2.5mm2 and 10C X 6 mm2	Per mtr.	39.76
	ii)2 C X 2.5mm2 to 4C X 2.5mm2	Per mtr.	31.32
14	Erection of Sub-station structure	Per MT	6,486.10
15	Erection of 33 KV Post Insulator	Nos.	1,415.52
16	Jumper connection in GSS.	Per Jumper	136.13
17	Replacement of 33 KV bushing of 33 KV VCB	Nos.	3,951.42
18	Replacement of 132 KV bushing of 145 KV breaker	Nos.	10,260.43
19	Dismantling of Sub-station structures	Per MT	14,152.82
20	Dismantling of cables.	Per mtr.	24.09
21	Improvement of earthing of Sub-station	Per mtr.	43.37
22	Erection, testing and commissioning of 33/0.4KV, 315 KVA Transformer (SST).	No.	13,562.51
23	Erection, testing and commissioning of 33/0.4KV, 630 KVA Transformer (SST).	No.	16,275.00
24	Replacement of bus-bar 220/132 KV	Per mtr.	206.00
25	Spray painting of Power Transformers	per sq m	108.18
26	Filtration of Transformer Oil, if m/c supplied by firm	per ltr.	6.84
27	Filtration of Transformer Oil, if m/c is supplied by BSPTCL (25% deduction)	per ltr.	5.13
28	Connection of jumper of HV and LV bushing.	Per Jumper	138.54
29	Erection, testing and commissioning of 10 MVA Power transformer	Nos.	349,125.00
30	Erection, testing and commissioning of 20 MVA Power transformer	Nos.	425,910.00
31	Erection, testing and commissioning of 50 MVA Power transformer	Nos.	469,244.00
32	Erection, testing and commissioning of 80 MVA Power transformer	Nos.	632,692.00
33	Erection, testing and commissioning of 100 MVA Power transformer	Nos.	722,125.00
34	Erection, testing and commissioning of 150 MVA/160 MVA Power transformer	Nos.	975,010.00
35	Erection, testing and commissioning of 200 MVA Power transformer	Nos.	1,170,000.00
36	(i) Construction of Treated Earth Pit having 4x10ft depth (including supply of all materials) (40 mm dia pipe)	Nos.	31,440.00
	(ii) Construction of 1x10 ft Treated Earth Pit (including supply of all materials) (40 mm dia pipe)	Nos.	8,560.00
37	Replacemnt of Gasket of main tank top cover	Nos.	281,899.80

	<b>Rate for replacement of gasket of the Transformer along with supply of gasket of :</b>		
38	a) Radiator	Nos.	6,396.96
	b) HV Bushing	Nos.	13,926.33
	c) LV Bushing	Nos.	7,902.83
	d) HV/LV Neutral Bushing	Nos.	10,541.13
	e) Tertiary bushing	Nos.	6,396.96
	f) Conservator Tank	Nos.	10,914.58
	g) Oil level guage	Nos.	903.53
	h) Silica gel	Nos.	1,505.88
	i) Replacement of gasket of door of marshalling box & OLTC control cable	job	13,552.88
	j) Inspection cover, manhole cover, valves, connecting pipes, Tightening & terminal arrangement of Bucholz relay, OTI, WTI	job	83,979.64
	39	Erection of Time Synchronization Equipment	Job
<b>B</b>	<b>TRANSMISSION LINES</b>		
1	Replacement of Insulator String in Transmission Lines		
a	In 220 KV lines	Each string	9,641.21
b	In 132 KV lines	Each string	8,677.45
2	Repairing of damaged conductor with repair sleeve	1No.	4,304.39
3	Repairing of broken conductor.	1No.	9,641.21
4	Repairing of cross arm.	1No.	6,428.28
5	Repairing of stub.	1No.	13,621.54
6a	Dismantling of tower (including conductor) during tower collapse for reuse of tower mmbbers.	Per MT	17,691.02
6b	Dismantling of tower (including conductor) during tower collapse for not reuse of tower mmbbers..	Per MT	10,614.00
7	Erection of Tower	Per MT	7,076.41
8a	Fabrication of Tower members for other than missing tower members replacement	Per MT	9,435.21
8b	Fabrication of Tower members for missing tower members replacement	Per MT	18,870.00
9a	Restoration (Opening and closing both) of Jumper in lines.	per jumper	4,818.80
9b	Tightening of jumper of transmission tower		
	(i) Upto 25 jumper	per jumper	2,000.00
	(ii) Beyond 25 jumper to 50 jumper	per jumper	1,500.00
	(iii) Beyond 50 jumper	per jumper	1,000.00
10	Replacement of conductor (Inluding Lowering & Re-stringing and re-sagging work) Per conductor per span		
a	1 no. Moose conductor	per span	15,989.98
b	1 no. Zebra conductor	per span	12,624.05
c	1 no. Panther conductor	per span	10,097.80

11	Stringing and other associated work of Earth wire	per span	7,183.63
12	Minor repairing of conductors without lowering the conductor	per point of defect	3,231.00
13a	Mobilisation of Labourers (one gang should consist of 20 person)	Per Gang	12,973.41
13b	Demobilisation of Labourers (One Gang should consist of 20 persons )	Per Gang	12,973.41
14	Nut-bolts tightening of 220 KV towers	Per Tower	1,831.14
15	Nut-bolts tightening of 132 KV towers	Per Tower	1,469.73
16	Tack welding of the 220 KV towers	Per Tower	3,500.00
17	Tack welding of the 132 KV towers	Per Tower	2,800.00
18	First coat Painting of tower footings without cost of paint & brush	Per Tower	1,170.00
19	Second coat Painting of towers without cost of paint & brush	Per Tower	663.00
20	Rate for ERS installation (Erection, Jointing, Jumpering) per set complete in all respect.	Nos.	237,325.90
21	Rate for ERS Dismantling including conductor lowering per set complete in all respect.	Nos.	237,325.90
22	Erection of cable and joints	Job	3,335.00
23	Lowering of ACSR Moose Conductor	Per Conductor per Span	3,198.00
24	Lowering of ACSR Zebra Conductor		2,525.00
25	Lowering of ACSR Panther Conductor		2,020.00
26	Raising of ACSR Moose Conductor		3,838.00
27	Raising of ACSR Zebra Conductor		3,030.00
28	Raising of ACSR Panther Conductor		2,424.00
29	Dismantling of existing tower for reuse of tower members	Per MT	18,500.00
30	Dismantling of existing tower for not reuse of tower members	Per MT	14,500.00
31	Lowering of HTLS conductor	Per Conductor per Span	4,500.00
32	Stringing of HTLS conductor		6,500.00
33	Dismantling of ACSR Panther conductor during tower collapse		3,500.00
34	Dismantling of ACSR Zebra conductor during tower collapse		4,500.00
35	Dismantling of HTLS Panther conductor during tower collapse		8,500.00
36	Repairing of conductor with Armour Rod	Nos.	5,150.00
37	Destringing of Earthwire/OPGW	Per span	5,300.00
38	Fixing/Dismantling of downlead clamp of OPGW	Per span	350.00

**NOTE:- 1. All above electrical equipments for which erection, testing , commissioning rate has been mentioned , Erection charges and Testing & Commissioning charges shall be 70% and 30% respectively.**

**2. Dismantling of GSS Equipments like Transformer, Breaker, CT, CVT, PT, LA, Panel etc. shall be 60% of Erection charges**

<b>BIHAR STATE POWER TRANSMISSION COMPANY LIMITED</b>			
<b>SCHEDULE OF RATES FOR MAINTENANCE WORK OF GRID SUB STATION AND TRANSMISSION LINES</b>			
<b>(ALL PRICES ARE WITHOUT TAXES AND GST SHALL BE PAID EXTRA AS APPLICABLE)</b>			
<b>Sl. No.</b>	<b>Name of Work</b>	<b>Unit</b>	<b>Unit Erection Price (in Rs.)</b>
	<b>Refilling of fire extinguishers</b>		
39	(i) CO2 type	per kg	320.00
	(ii) DCP type	per kg	218.00
	(iii) Mechanical foam	per ltr.	128.00
	(iv) Water CO2 type	per ltr.	108.00
	(v) 50 L foam	per ltr.	151.00
40	Fixing/Adjustment of vibration damper	Nos.	450.00
41	Jointing of broken conductor/Earth wire	Per conductor per span	9,600.00
42	Fixing/Installation of Dead end fitting	Set	1,800.00
43	Fixing/installation of Suspension fitting	Set	1,200.00
44	Hiring charge of Dry Air plant	Per day	1,500.00
45	Hiring charge of Vaccum Machine	Per day	1,500.00
46	Hiring charge of 20KL oil tanker	Per day	1,100.00
47	Erection of Busbar/jack bus	km	175,000.00
	<b>Jointing of 132kV XLPE Cable</b>		
48	(i) Excavation of wet soil (for identification of damaged cable)	cum	211.00
	(ii) Erection of water proof isolation tent (45'x20') with air conditioning facility to facilitate cable jointing work to maintain moisture/dirt free cool ambience	per day	60,000.00
	(iii) Charges of service engineer with 05 nos. assistant for jointing of 132 kV XLPE cable with straight through jointing tool kit (including travelling charges, fooding and lodging)	per day	90,000.00
	(iv) Provision of site lighting and DG set with round the clock security guard to facilitate cable jointing work	day	10,000.00
	(v) Local sand filling in normal soil trench	cum	192.50
	(vi) 100 A1 grade brick flat soiling	sq. m.	227.60
	(vii) Extra carriage cost of material for local sand	cum	233.16
	(viii) Dismantling and laying of 132 KV XLPE cable	m	500.00
	(ix) Supply of "x1" wooden block for providing support to 132 KV XLPE cable	Nos.	500.00
	(x) Provision of LPG cylinder for heat shrink purpose	Nos.	1,500.00
	(xi) Back filling of soil	cum	66.40
	(xii) 33kV Straight through jointing service rate	per joint	6,750.00
	<b>XLPE Cable Repair</b>		
49	(i) Hiring of Cable Fault Locator machine including service for fault pin pointing	per day	135,000.00
	(ii) Transportation charge of manpower and cable fault locator	per trip	40,000.00
50	Rent charges for 01 no. of ERS	per day	27,000.00
51	Battery Rejuvenation	per cell perAH	6.00
52	Filling of Nitrogen Gas in Power Transformer (52kg cylinder)	Per Cylinder	7,500.00
53	Oil drain from Power Transformer	Per KL	469.00
54	Oil re-filling in Power Transformer	Per KL	469.00
55	Rectification of Oil leakage/seepage problem in Power Transformer by applying high quality sealant and raising base epoxy compound after proper tightening of nuts & bolts	Per meter	16,800.00
56	Erection, testing & commissioning of Line Differential Relay	Nos.	30,000.00
	<b>Battery management system including Remote terminal unit , erection, cloud server maintenance &amp; report generation</b>		
57	(i) 125 cells/250V DC	Nos.	126,650.00
	(ii) 110 cells/220V DC	Nos.	116,900.00
	(iii) 24 cells/48V DC	Nos.	55,700.00

BIHAR STATE POWER TRANSMISSION COMPANY LIMITED								
RATE FOR TRANSPORTATION OF POWER TRANSFORMERS OF VARIOUS CAPACITIES AND OTHER ASSOCIATED								
(ALL PRICES ARE WITHOUT TAXES AND GST SHALL BE PAID EXTRA AS APPLICABLE)								
Sl. No.	Description	All prices in Rupees						
		10/12.5 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).	79,690.91	83,485.71	99,929.87	103,724.67	107,519.48	113,844.15	120,168.83
<b>Dragging of transformers beyond 100 feet. (Rate per feet):</b>								
2	(i) Beyond 100 feet upto 300 feet, per feet @ .....	442.73	442.73	505.97	550.25	600.84	600.84	632.47
	(ii) Beyond 300 feet upto 700 feet, per feet @ .....	417.43	417.43	474.35	505.97	537.60	537.60	569.22
	(iii) Beyond 700 feet, per feet @ .....	392.13	392.13	442.73	474.35	505.97	505.97	537.60
3	Unloading of the transformer from Railway wagon and dragging to the point of loading (dragging upto 100 feet).	67,041.56	67,041.56	79,690.91	84,118.18	88,545.45	88,545.45	91,075.32
4	Loading of transformer on low bed Trailor and making arrangement against skidding & tilting of the transformer from its position during transportation.	63,246.75	63,246.75	75,896.10	75,896.10	75,896.10	82,220.78	88,545.45
<b>Safe transportation of transformer from point of loading to the place of destination (including inter state transportation):</b>								
5	(i) Upto first 50 Kms.	75,896.10	88,545.45	111,314.28	121,433.76	131,553.24	145,467.53	151,792.20
	(ii) Beyond 50 Km upto 150 Kms (rate per Kms).	265.64	328.88	398.45	417.43	442.73	468.03	505.97
	(iii) Beyond 150 Kms upto 300 Kms (rate per 10 Kms).	2,656.36	3,288.83	3,984.55	4,205.91	4,427.27	4,680.26	5,059.74
	(iv) Beyond 300 Kms upto 500 Kms (rate per 20 Kms).	5,059.74	6,324.68	7,589.61	7,905.84	8,222.08	8,854.55	9,487.01
	(v) Beyond 500 Kms (rate per 50 Kms).	10,119.48	10,119.48	12,016.88	12,649.35	13,281.82	14,546.75	15,179.22



6	Unloading of transformer from low bed trailer and placing safely on wooden sleepers/nearby place.	67,041.56	70,836.36	79,690.91	87,280.52	94,870.13	101,194.80	107,519.48
7	Removal of transformer from sleepers, dragging (upto 100 feet) and placing it on plinth including fixing and fitting of wheels etc.	70,836.36	75,896.10	89,810.39	92,340.26	94,870.13	107,519.48	113,844.15
<b>Transportation of GIS equipments /Transformer's accessories/ fittings per truck (9 MT capacity) per Km including loading &amp;</b>								
8	(i) In side state (Rate per Km).	367.50	367.50	367.50	367.50	367.50	367.50	367.50
	(ii) Out side state (Inter state) (Rate per Km).	393.75	393.75	393.75	393.75	393.75	393.75	393.75
9	<b>Transportation of other GSS equipments, Transmission line materials inclusive ERS including loading, unloading of the equipment/materials</b>	<b>Loading Capacity of Truck/Pick up (Commercial)</b>						
	<b>Inside State</b>	<b>Upto 6 MT</b>			<b>Upto 3 MT</b>			
	(i) Upto first 50 km				9,972.00		4,992.00	
	(ii) 50 km < Distance < 500 km (Rate per km)				48.00		27.00	
	(iii) Beyond 500 km (Rate per km)				32.00		19.00	