NAME OF THE WORK:- Design, Supply and Installation of 2X20 MVA-132/33 KV Sub-station at Gondia and associated 132 KV D/C LILO line from existing TTPS-DUBURI 132 KV Line to proposed Sub-station at Gondia (Approx. Line length-25.304 Km) in Odisha State of India under PACKAGE-6 Under Japan International Cooperation Agency (JICA)'s ODA Loan.

Loan Agreement No: [ID-P245] - FB No: [CPC/JICA/ICB/06/17-18/......]- Reference Identification No: [OPTCL/JICA/PKG-6]

	Schedule No.	1. Plant	Supplied f	rom Abroad (Sub	b-station)			
	NAME OF THE BIDDER							
SI No	DESCRIPTION OF ITEMS(SCHEDULE-1-SS) SUPPLY OF FOLLOWING EQUIPMENT & MATERIALS (As per Technical Specification)	Code ¹	UNIT	QUANTITY: for Construction of 2X20 MVA, 132/33 KV S/S,Gondia (132 KV Bay-05 Nos.: 02 FDR, 02 TRF, 01 B/C,2nos unequipped spare bay) & (33 KV Bay-08 Nos.: 05 FDR, 02 TRF & 01 B/C, 2nos unequipped spare bay)	Total Quantity	Unit Pr	cip	Total Price ²
					(1)	(2)	(3)	(1) x (3)
1	145 KV,800-400-200 A,31.5 KA,4CORE SINGLE PHASE CURRENT TRANSFORMER (3 NOS PS CLASS & 1 NO. 0.2s CLASS)		NOS	15	15			
2	145 KV,1250A,31.5KA,ISOLATORS							
	S/I WITH OUT EARTH SWITCH		NOS	9	9			
	D/I WITH SINGLE EARTH SWITCH		NOS	2	2			
	D/I WITHOUT EARTH SWITCH		NOS	2	2			
3	145 KV, 6600pF, 3CORE,SINGLE PHASE CAPACITOR VOLTAGE TRANSFORMER		NOS	6	6			
4	120 KV METAL OXIDE SURGE ARRESTOR, 10 KA, Class III		NOS	12	12			
5	145 KV, 2 CORE, SINGLE PHASE, IVT		NOS	3	3			
6	132 KV Bus Post Insulators		NOS	16	16			
7	145KV, 3150A, 40KA, SF6, CIRCUIT BREAKER WITH SUPPORTING STRUCTURE		SET	5	5			
	36 KV,800-400-200,25KA,3 CORE SINGLE PHASE CURRENT TRANSFORMER(2 NOS PS CLASS & 1 NO. 0.2s CLASS)		NOS	18	18			
	36 KV, 800-400-200, 25KA, 4 CORE SINGLE PHASE CURRENT TRANSFORMER (3 NOS PS CLASS & 1 NO. 0.2s CLASS)		NOS	6	6			
9	36 KV,1250A,25KA,ISOLATORS							
9.1	S/I WITH OUT EARTH SWITCH		NOS	9	9			
9.2	D/I WITH SINGLE EARTH SWITCH		NOS	5	5			
9.3	D/I WITHOUT EARTH SWITCH		NOS	2	2			
9.4	S/I WITH BEAM MOUNTED	<u> </u>	NOS	2	2			
10	30 KV, METAL OXIDE SURGE ARRESTOR, 10KA, class II		NOS	27	27			
11	36 KV ,2 CORE,SINGLE PHASE,IVT(1 core 3P & other core 0.2s)		NOS	3	3			
12	36 KV,1250A,25KA,VACUUM CIRCUIT BREAKER WITH SUPPORTING STRUCTURE		NOS	8	8			
13	33 KV Bus Post Insulators		NOS	22	22			

14	BUS BAR & CIRCUIT MATERIALS						
14.1	TENSION & SUSPENSION ANTI FOG TYPE INSULATOR						
14.1.1	120 kN Long Rod Insulator for 132kV side.						
14.1.1	120 KN Long Rod insulator for 132kV side.		NOS	102	102		
14.1.2	90 kN Long Rod INSULATOR for 132kV side.		NOS	24	24		
14.1.3	120 kN Long Rod INSULATOR for 33kV side.		NOS	66	66		
14.1.4	90 kN Long Rod INSULATOR for 33kV side.		NOS	28	28		
14.2	ACSR MOOSE CONDUCTOR		KMS	4	4		
14.3	HARDWARES & FITTINGS/SPACERS/CLAMP & CONNECTORS						
14.3.0	132 KV Double Tension H/W fitting with adjustable turn buckle suitable for twin ACSR Moose (Single Anchoring Point)		NOS	18	18		
14.3.1	132 KV Single Tension H/W fitting with adjustable turn buckle suitable for Single ACSR Moose		NOS	42	42		
14.3.2	132 KV Single suspension H/W fitting suitable for single ACSR Moose		NOS	24	24		
14.3.3	132 KV Single suspension H/W fitting suitable for twin ACSR Moose		NOS	3	3		
14.3.5	33 KV Single Tension H/W fitting with adjustable turn buckle suitable for single ACSR Moose		NOS	30	30		
14.3.6	33 KV Single Suspension H/W fitting suitable for single ACSR Moose	р	NOS	27	27		
14.3.7	33 KV Double Tension H/W fitting with adjustable turn buckle suitable for twin ACSR Moose (Single Anchoring Point)		NOS	18	18		
14.3.8	132KT- clamp for ACSR PANTHER run to ACSR MOOSE drop		NOS	24	24		
	132 KV 'T' Clamp for single Moose run with single Moose ACSR drop		NOS	60	60		
	132 KV 'T' Clamp for twin Moose run with single Moose ACSR drop		NOS	15	15		
	33 KV 'T' Clamp for single Moose run with single Moose ACSR drop		NOS	78	78		
	33 KV 'T' Clamp for twin Moose run with single Moose ACSR drop		NOS	39	39		
	132 KV PI Clamp		NOS	16	16		
	Spacer for Twin Bus ACSR 132 KV Bus		NOS	54	54		
	Spacer for Twin Bus ACSR 33 KV Bus		NOS	22	22		
	132 KV LA Clamp		NOS	12	12		
14.3.17	132 KV CVT Clamp		NOS	12	12		
14.3.18	132 KV CT Clamp(BIMETALLIC)		NOS	36	36		
	132 KV IVT Clamp		NOS	6	6		
14.3.20	132kKV Isolater Pad Clamp		NOS	127	127		
14.3.21	132 KV CB Clamp		NOS	36	36		
14.3.22	33 KV PI Clamp		NOS	15	15		
14.3.23	33 KV Isolator pad clamp		NOS	117	117		
14.3.24	33 KV LA Clamp		NOS	27	27		
14.3.25	33 KV CT/NCT Clamp		NOS	50	50		
	33 KV IVT Clamp		NOS	3	3		
	33 KV CB Clamp		NOS	48	48		
14.3.28	PG Clamp for ACSR Moose		NOS	150	150		
14.4	EARTH SPIKES & IT'S HARDWARES & FITTING						
14.4.1	FOR 132KV SIDE :26 NOS @ 7 MTRS LENGTH EACH		SET	26	26		
14.4.2	FOR 33 KV SIDE:23 NOS @ 5 MTRS EACH		SET	23	23		
14.5	SUBSTATION EARTHING SYSTEMS						

14.5.1	EARTHING CONDUCTOR FOR BURRIAL : 75X10 mm GI Flat for laying (spacing	MT	62	62		
	maximum 5m both way)					
14.5.2	EARTHING CONDUCTOR: 50X6 mm GI Flat for Raiser from the burial earth mat	МТ	15	15		
	to equipment,structure etc)	1411	13	13		
14.5.3	EARTHING DEVICE & ASSOCIATED ACCESSORIES (50 mm heavy duty GI	NOS	125	125		
	PERFORATED PIPE 3 mtrs long for treated earth pit)	1103	123	123		
14.5.4	EARTHING DEVICE & ASSOCIATED ACCESSORIES 40mm MS rod 3 mtrs long for	NOS	90	90		
	non treated earth pit)	1103	90	90		
14.5.5	Betonite powder for earthing.					
14.5.5.1	(i)Betonite powder @50Kg per treated earth pit.					
	(ii)Betonite powder 9Kg per meter for 75/10 GI flat burial.	MT	48	48		
14.6	G.I Cable Trays including G.I. support Angle suitable for different sections i.e.					
	Section:1-1,2-2,3-3 & 4-4 along with its accessories as per TS.					
14.6.1	G.I Cable Trays(size: 450x75x2500mm)	MTRS	1550	1550		
14.6.2	G.I Cable Trays(size: 300x75x2500mm)	MTRS	2200	2200		
14.6.3	G.I Cable Trays(size: 150x75x2500mm)	MTRS	1350	1350		
	Support G. I angle 50x50x6 mm for cable tray	MT	3	3		
	SUB STATION SWITCYARD BMK, AC CONSOLE & OTHER MARSHALLING BOXES					
	,					
14.7.1	BAY MARSHALLING KIOSK	NOS	7	7		
	SWITCH YARD AC CONSOLE FOR LIGHTING	NOS	2	2		
14.7.3	SWITCH YARD RECEPTACLE BOARD FOR TFR OIL FILTERATION	NOS	1	1		
14.7.4	SWITCH YARD RECEPTACLE BOARD FOR WELDING & OTHER EMERGENCY					
14.7.4	SWITCH TAILS RECEITABLE BOARD FOR WEEDING & OTHER EMERGENCY	NOS	2	2		
14.7.5	CT, PT & CVT Out Door Console Boxes (132 KV CT-5 Nos., 33 KV CT-8 Nos., 132					
14.7.5	KV CVT-2 No., 132 KV IVT-1 No., 33 KV IVT-1 No.)	NOS	17	17		
15	SWITCH YARD STRUCTURES COLUMN & BEAM (LATTICE TYPE) FOR 132/33 KV					
13	CLASS INCLUDING FOUNDATION BOLTS & NUTS.					
15.1	DIFFERENT TYPES OF COLUMNS WITH DETAILS					
	T1S - 132 KV(NOMINAL UNIT WT- 1.2 MT) = 20 Sets.	MT	24.00	24	ļ	
15.1.2	T4S - 132KV (NOMINAL UNIT WT- 1.2 MT) = 20 Sets.	MT	5.70	5.7		
15.1.3	T8S - 33KV(NOMINAL UNIT WT- 0.83 MT) = 9Sets.	MT	7.47	7.47		
15.1.4	T9S - 33KV(NOMINAL UNIT WT- 0.6 MT) = 14 Sets.	MT	8.40	8.4		
15.1.4	DIFFERENT TYPE OF BEAMS WITH DETAILS	IVII	6.40	6.4		
		MT	0.96	0.86		
	G1 - 132 KV(NOMINAL UNIT WT- 0.62 MT) = 17 Sets.	MT	9.86 1.16	9.86 1.164		
	G1X - 132 KV (NOMINAL UNIT WT- 0.62 MT) = 2 Sets.			_		
	G2 - 132 KV(NOMINAL UNIT WT- 0.9 MT) = 06 Sets	MT	5.40	5.4		
15.2.4	G1,2 - 132 KV(Each two beams of G1 type) (NOMINAL UNIT WT- 1.25 MT) =2	MT	2.50	2.5		
15.2.5	G6 - 33KV (NOMINAL UNIT WT- 0.53 MT) = 04 Sets.	MT	2.12	2.12		
	G6 - 33KV (NOMINAL UNIT W1- 0.53 MT) = 04 Sets.	MT	3.60	3.6		
	G4 - 33KV(NOMINAL UNIT W1- 0.4MT) = 09 Sets. G4X - 33KV (NOMINAL UNIT WT- 0.4 MT) = 2Sets.	MT	0.80	0.8		
	,	MT	71.01	71.01	T	
15.3	TOTAL WEIGHT OF COLUMN & BEAM	IVII	/1.01	/1.01		
15.4	SWITCH YARD EQUIPMENT STRUCTURES (LATTICE TYPE) FOR 132/33 KV CLASS					
15.4.1	INCLUDING FOUNDATION BOLTS & NUTS.					
	ISOLATORS-132KV	NAT	5.00	5.0202		
	S.I.WITH & WITHOUT E/S (Unit weight - 658.767 Kg) = 9 Nos	MT	5.93	5.9283		
15.4.3	D.I. WITHOUT E/S (Unit Weight - 979.10 Kg) = 2 Nos.	MT	1.96	1.9582		

15.4.4 D. MITH (5/F) (IUM Weight - 1120 (5.99 (5) = 2 Nos. MiT 2.24 2.241 15.4.5 SOLATON-38 XV MITHOUT (5/F) (IUM Weight - 124 (8.98 (6) - 180.) 15.4.7 D. MITHOUT (5/F) (IUM Weight - 124 (8.98 (6) - 180.) 15.4.8 D. MITH (5/F) (IUM Weight - 127 (8.55 (6) - 180.) 15.4.9 D. MITH (5/F) (IUM Weight - 127 (8.55 (6) - 180.) 15.4.10 D. MITH (5/F) (IUM Weight - 127 (8.55 (6) - 180.) 15.4.20 D. MITH (5/F) (IUM Weight - 127 (8.56 (6) - 180.) 15.4.20 D. MITH (5/F) (IUM Weight - 124 (8.06 (6) - 180.) 15.4.20 C. MITH (5/F) (IUM Weight - 124 (8.06 (6) - 180.) 15.4.21 C. MITH (124 (104 (6) - 180.) 15.4.21 C. MITH (124	15 4 4	D L W/TH F /C / Unit Weight 1130 FFO //a) = 3 Nea	NAT		2.24	2 241		
15.4 15.4			IVII		2.24	2.241		
15.4 D. L. WITHOUT F (S Unit weight - 670,55 Ref g) = 2 Nos.			NAT.		2.05	2.6522		
15.4.9								
15.4.9 CTS-132 KV (Unit Weight - 124.546 Kg) = 15 Nos								
15.4.10 CT-5-33 kV (Julin Weight - 148,80 kg) = 18 Nos								
15.4.11 CVTS.132 KV (UINE Weight - 236.28 Kg) = 6Nos.		, , ,						
15.412 VTS-132 KV (Unit Weight - 23.1 195 Kg) = 3 Nos		, ,						
15.4.13 MYS-33 KV (Unit Weight - 124.336 Kg) = 3 Nos		, , ,						
15.4.14 Surge Arrester-132 EVI (Unit Weight - 178.93 Kg) = 12 Nos		, ,						
15.4.15 BPI-132 KV (Unit Weight - 148.80 kg) = 15 Nos								
15.4.16 BP-33 KV [Unit Weight - 148.80 Kg] = 15 Nos								
15.4.1 Total Weight - 138.24 (g) = 4 Nos								
15.4.18 TOTAL WEIGHT OF EQUIPMENT STRUCTURE								
15.5							T	l
STUCLURES MT 7.00			IVII		5.73	35./3		
16 GENERAL EQUIPMENT & SUBSTATION ACCESSORIES	15.5	, , , , , , , , , , , , , , , , , , , ,	MT	,	7.00	7.00		
16.1 POWER CABLES,1.1KV,XLPE/PVC ARMOURED, ALUMINIUM CONDUCTOR (As per Specification)	16							
Description		,						
16.1.1 XLPE 3.5 CX300 mm² MTRS 500 500 500 16.1.2 XLPE 3.5 CX185 mm² MTRS 300 30	10.1	· · · · · · · · · · · · · · · · · · ·						
16.1.2 XLPE 3.5 CX185 mm² MTRS 300	16 1 1		MTD		F00	500		
16.1.3 XIPE 3.5 CX120 mm² MTRS 200						+		
16.1.4 PVC 3.5 CX70 mm² MTRS 600 600 600 16.1.5 PVC 3.5 CX35 mm² MTRS 1750 1750 1750 16.1.6 PVC 4 CX 16 mm² MTRS 1000 1000 1000 16.1.7 PVC 4 CX 6 mm² MTRS 3750 3750 3750 16.1.8 PVC 2CX 6 mm² MTRS 2200 2200 2200 16.2 CONTROL CABLES, 1.1 KV, PVC, STRANDED COPPER(As per specification) MTRS 5500 5500 16.2.1 2 CX 2.5 mm² MTRS 10500 10500 10500 16.2.2 4 CX 2.5 mm² MTRS 4500 4500 4500 16.2.4 7 CX 2.5 mm² MTRS 5500 5500 5500 16.2.5 10 CX 2.5 mm² MTRS 10000 10000 10000 16.2.6 12 CX 2.5 mm² MTRS 9000 9000 162.2 16 CX 2.5 mm² MTRS 5000 5000 16.2.8 19 CX 2.5 mm² MTRS 5000 5000 162.2 16 CX 2.5 mm² MTRS 5000 5000 16.2.9 10 CX 2.5 mm² MTRS 5000 5000 162.2 16 CX 2.5 mm² MTRS 5000 5000 162.2								
16.1.5 PVC 3.5 CX35 mm² MTRS 1750 1750 16.1.6 PVC 4 CX 16 mm² MTRS 1000 1000 16.1.7 PVC 4 CX 6 mm² MTRS 3750 3750 16.1.8 PVC 2CX 6 mm² MTRS 2200 2200 16.2 CONTROL CABLES,1.1 KV, PVC,STRANDED COPPER(As per specification) MTRS 5500 5500 16.2.1 2 CX 2.5 mm² MTRS 10500 10500 16.2.2 4 CX 2.5 mm² MTRS 10500 10500 16.2.3 5 CX 2.5 mm² MTRS 4500 4500 16.2.4 7 CX 2.5 mm² MTRS 5500 5500 16.2.5 10 CX 2.5 mm² MTRS 10000 10000 16.2.6 12 CX 2.5 mm² MTRS 9000 9000 16.2.7 16 CX 2.5 mm² MTRS 5000 5000 16.2.9 10 CX 2.5 mm² MTRS 5000 600 17 ACCESSORIES FOR PLCC SYSTEM With OPGW cable MTRS 600 600		XLPE 3.5 CX120 mm ²	MTR:		200	200		
16.1.6 PVC 4 CX 16 mm² MTRS 1000 1000 16.1.7 PVC 4 CX 6 mm² MTRS 3750 3750 16.1.8 PVC 2CX 6 mm² MTRS 2200 2200 16.2 CONTROL CABLES, 1.1 KV, PVC, STRANDED COPPER(As per specification) MTRS 5500 5500 16.2.1 2 CX 2.5 mm2 MTRS 10500 10500 16.2.2 4 CX 2.5 mm² MTRS 10500 10500 16.2.3 5 CX 2.5 mm² MTRS 4500 4500 16.2.4 7 CX 2.5 mm² MTRS 5500 5500 16.2.5 10 CX 2.5 mm² MTRS 10000 10000 16.2.6 12 CX 2.5 mm² MTRS 9000 9000 16.2.7 16 CX 2.5 mm² MTRS 5000 5000 16.2.9 1CX 120 mm² BAT TO BAT CHARGER & CHARGER TO DCDB MTRS 600 600 17 ACCESSORIES FOR PLCC SYSTEM With OPGW cable MTRS 600 600	16.1.4	PVC 3.5 CX70 mm ²	MTR:		600	600		
16.1.7 PVC 4 CX 6 mm² MTRS 3750 3750 16.1.8 PVC 2CX 6 mm² MTRS 2200 2200 16.2 CONTROL CABLES, 1.1 KV, PVC, STRANDED COPPER(As per specification) MTRS 5500 5500 16.2.1 2 CX 2.5 mm² MTRS 10500 10500 16.2.2 4 CX 2.5 mm² MTRS 4500 4500 16.2.3 5 CX 2.5 mm² MTRS 5500 5500 16.2.4 7 CX 2.5 mm² MTRS 5500 5500 16.2.5 10 CX 2.5 mm² MTRS 10000 10000 16.2.6 12 CX 2.5 mm² MTRS 9000 9000 16.2.7 16 CX 2.5 mm² MTRS 5000 5000 16.2.8 19 CX 2.5 mm² MTRS 2000 2000 16.2.9 1CX 120 mm² BAT TO BAT CHARGER & CHARGER TO DCDB MTRS 600 600 17 ACCESSORIES FOR PLCC SYSTEM With OPGW cable MTRS 600 600	16.1.5	PVC 3.5 CX35 mm ²	MTR	; -	1750	1750		
16.1.7 PVC 4 CX 6 mm² MTRS 3750 3750 16.1.8 PVC 2CX 6 mm² MTRS 2200 2200 16.2 CONTROL CABLES,1.1 KV, PVC,STRANDED COPPER(As per specification) MTRS 5500 5500 16.2.1 2 CX 2.5 mm2 MTRS 10500 10500 16.2.2 4 CX 2.5 mm² MTRS 4500 4500 16.2.3 5 CX 2.5 mm² MTRS 5500 5500 16.2.4 7 CX 2.5 mm² MTRS 5500 5500 16.2.5 10 CX 2.5 mm² MTRS 10000 10000 16.2.6 12 CX 2.5 mm² MTRS 9000 9000 16.2.7 16 CX 2.5 mm² MTRS 5000 5000 16.2.8 19 CX 2.5 mm² MTRS 2000 2000 16.2.9 1CX 120 mm² BAT TO BAT CHARGER & CHARGER TO DCDB MTRS 600 600 17 ACCESSORIES FOR PLCC SYSTEM With OPGW cable MTRS 600 600	16.1.6	PVC 4 CX 16 mm ²	MTR:	,	1000	1000		
16.1.8 PVC 2CX 6 mm² MTRS 2200 2200 16.2 CONTROL CABLES, 1.1 KV, PVC, STRANDED COPPER(As per specification) MTRS 5500 5500 16.2.1 2 CX 2.5 mm2 MTRS 10500 10500 16.2.3 5 CX 2.5 mm² MTRS 4500 4500 16.2.4 7 CX 2.5 mm² MTRS 5500 5500 16.2.5 10 CX 2.5 mm² MTRS 10000 10000 16.2.6 12 CX 2.5 mm² MTRS 9000 9000 16.2.7 16 CX 2.5 mm² MTRS 5000 5000 16.2.8 19 CX 2.5 mm² MTRS 2000 2000 16.2.9 1CX 120 mm² BAT TO BAT CHARGER & CHARGER TO DCDB MTRS 600 600 17 ACCESSORIES FOR PLCC SYSTEM With OPGW cable MTRS 600 600	16.1.7	PVC 4 CX 6 mm ²	MTR	; ;	3750	3750		
16.2 CONTROL CABLES, 1.1 KV, PVC, STRANDED COPPER (As per specification)	16.1.8	PVC 2CX 6 mm ²	MTR:			2200		
16.2.1 2 CX 2.5 mm2 MTRS 5500 5500 16.2.2 4 CX 2.5 mm² MTRS 10500 10500 16.2.3 5 CX 2.5 mm² MTRS 4500 4500 16.2.4 7 CX 2.5 mm² MTRS 5500 5500 16.2.5 10 CX 2.5 mm² MTRS 10000 10000 16.2.6 12 CX 2.5 mm² MTRS 9000 9000 16.2.7 16 CX 2.5 mm² MTRS 5000 5000 16.2.8 19 CX 2.5 mm² MTRS 2000 2000 16.2.9 1CX 120 mm² BAT TO BAT CHARGER & CHARGER TO DCDB MTRS 600 600 17 ACCESSORIES FOR PLCC SYSTEM With OPGW cable MTRS 600 600	16.2							
16.2.2 4 CX 2.5 mm² MTRS 10500 10500 16.2.3 5 CX 2.5 mm² MTRS 4500 4500 16.2.4 7CX 2.5 mm² MTRS 5500 5500 16.2.5 10 CX 2.5 mm² MTRS 10000 10000 16.2.6 12 CX 2.5 mm² MTRS 9000 9000 16.2.7 16 CX 2.5 mm² MTRS 5000 5000 16.2.8 19 CX 2.5 mm² MTRS 2000 2000 16.2.9 1CX 120 mm² BAT TO BAT CHARGER & CHARGER TO DCDB MTRS 600 600 17 ACCESSORIES FOR PLCC SYSTEM With OPGW cable MTRS 600 600		, , ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,,						
16.2.3 5 CX 2.5 mm² MTRS 4500 4500 16.2.4 7CX 2.5 mm² MTRS 5500 5500 16.2.5 10 CX 2.5 mm² MTRS 10000 10000 16.2.6 12 CX 2.5 mm² MTRS 9000 9000 16.2.7 16 CX 2.5 mm² MTRS 5000 5000 16.2.8 19 CX 2.5 mm² MTRS 2000 2000 16.2.9 1CX 120 mm² BAT TO BAT CHARGER & CHARGER TO DCDB MTRS 600 600 17 ACCESSORIES FOR PLCC SYSTEM With OPGW cable MTRS 600 600	16.2.1	2 CX 2.5 mm2	MTR	; ;	5500	5500		
16.2.4 7CX 2.5 mm² MTRS 5500 5500 16.2.5 10 CX 2.5 mm² MTRS 10000 10000 16.2.6 12 CX 2.5 mm² MTRS 9000 9000 16.2.7 16 CX 2.5 mm² MTRS 5000 5000 16.2.8 19 CX 2.5 mm² MTRS 2000 2000 16.2.9 1CX 120 mm² BAT TO BAT CHARGER & CHARGER TO DCDB MTRS 600 600 17 ACCESSORIES FOR PLCC SYSTEM With OPGW cable MTRS 600 600	16.2.2	4 CX 2.5 mm ²	MTR	1	0500	10500		
16.2.4 7CX 2.5 mm² MTRS 5500 5500 16.2.5 10 CX 2.5 mm² MTRS 10000 10000 16.2.6 12 CX 2.5 mm² MTRS 9000 9000 16.2.7 16 CX 2.5 mm² MTRS 5000 5000 16.2.8 19 CX 2.5 mm² MTRS 2000 2000 16.2.9 1CX 120 mm² BAT TO BAT CHARGER & CHARGER TO DCDB MTRS 600 600 17 ACCESSORIES FOR PLCC SYSTEM With OPGW cable MTRS 600 600	16.2.3	5 CX 2 5 mm ²	MTR:	,	1500	4500		
16.2.5 10 CX 2.5 mm² 10000 10000 16.2.6 12 CX 2.5 mm² MTRS 9000 9000 16.2.7 16 CX 2.5 mm² MTRS 5000 5000 16.2.8 19 CX 2.5 mm² MTRS 2000 2000 16.2.9 1CX 120 mm² BAT TO BAT CHARGER & CHARGER TO DCDB MTRS 600 600 17 ACCESSORIES FOR PLCC SYSTEM With OPGW cable MTRS 600 600								
16.2.6 12 CX 2.5 mm² MTRS 9000 9000 16.2.7 16 CX 2.5 mm² MTRS 5000 5000 16.2.8 19 CX 2.5 mm² MTRS 2000 2000 16.2.9 1CX 120 mm² BAT TO BAT CHARGER & CHARGER TO DCDB MTRS 600 600 17 ACCESSORIES FOR PLCC SYSTEM With OPGW cable MTRS 600 600								
16.2.7 16 CX 2.5 mm² MTRS 5000 5000 16.2.8 19 CX 2.5 mm² MTRS 2000 2000 16.2.9 1CX 120 mm² BAT TO BAT CHARGER & CHARGER TO DCDB MTRS 600 600 17 ACCESSORIES FOR PLCC SYSTEM With OPGW cable 600 600						1		
16.2.8 19 CX 2.5 mm² MTRS 2000 2000 16.2.9 1CX 120 mm² BAT TO BAT CHARGER & CHARGER TO DCDB MTRS 600 600 17 ACCESSORIES FOR PLCC SYSTEM With OPGW cable 600 600								-
16.2.9 1CX 120 mm ² BAT TO BAT CHARGER & CHARGER TO DCDB MTRS 600 600 17 ACCESSORIES FOR PLCC SYSTEM With OPGW cable					5000			
17 ACCESSORIES FOR PLCC SYSTEM With OPGW cable	16.2.8	19 CX 2.5 mm ²	MTR:	: :	2000	2000		
17 ACCESSORIES FOR PLCC SYSTEM With OPGW cable	16.2.9	1CX 120 mm ² BAT TO BAT CHARGER & CHARGER TO DCDB	MTR		600	600	 	
17.1 48 Fibre Optic Approach cable along with HDPE Pipes Kms 1 1	17							
	17.1	48 Fibre Optic Approach cable along with HDPE Pipes	Kms		1	1		
17.2 Optical line Terminal Equipment/OLTE) CTMA type CDH equipment with	17.2	Ontical line Terminal Equipment(OLTE) CTAMA tune CDU equipment with						
Optical line Terminal Equipment(OLTE) -STM4 type SDH equipment with			Al -		1	4		
integrated MUX & tributary cards for speech & data ports for interfacing of No. 1 1		, , ,	No.		1	1		
Speech & data which should be compatible with existing OPTCL system		Speech & data which should be compatible with existing OPTCL system						
17.3 Supply of FODP(Fibre Optic Distribution Panel)48 F: Indoor type,rack mounted No. 1 1	17.3	Supply of FODP(Fibre Optic Distribution Panel)48 F: Indoor type,rack mounted	Ma		1	1		
with FCPC coupling and pig tails(DWSm Fibre) No. 1 1		with FCPC coupling and pig tails(DWSm Fibre)	NO.		T	1		

17.4	Remote Terminal Unit (RTU) with MFT/MFM module designed for Power Utility SCADA operation. RTU should report in IEC 870-5-104 protocols to both main & backup control centre. RTU should have ports for interfacing with relay control panels,MFT/MFMs and port for LDMS facility. Laptop should be part of the supply contract of RTU for monitoring, local data aquisition & configuration of RTU.	No.	1	1		
17.5	48 V, 300 AH, maintenance free VRLA Battery set.	Set	1	1		
17.6	SMPS based battery charger of 75A suitable for 48V VRLA battery.	No	1	1		
17.7	2.5 sq. mm 2 core control cable(power supply,Transducer/MFT PT supply)	MTRS	500	500		
17.8	2.5 sq. mm multi strand 4 core control cable(Transducer/MFT CT , supply)	MTRS	500	500		
17.9	1.5 sq. mm 10 core control cable(Digital Input)	MTRS	200	200		
17.10	10 sq. mm 2 core multi strand control cable(Battery)	MTRS	100	100		
17.11	48 V DCDB	No	1	1		
17.12	Earth Flat, Cable Tray, Telephone cable, Foundation rail, Junction Box,.	LS	1	1		
18	SUPPLY OF STATION TRANSFORMER & OTHER MATERIALS FOR MEETING THE AUXILIARY SUPPLY OF THE SUB-STATION AS PER TECHNICAL SPECIFICATION					
18.1	STATION TRANSFORMER 33KV/433V,250 KVA (AS PER SPECIFICATION)	NOS	2	2		
18.2	HDG DP STRUCTURE : each set shall comprise of [2X 9.0 Mtrs (ISBM:200X100 mm(min) RS Joist(beam) with bracings of suitable channels(ISMC 75X40) & angles (L50X50X6) & different size Steel plate of 10 mm thick etc].	SETS	2	2		
18.3	33 KV AB SWITCH IN 33 KV SIDE(600AMP) including required GI pipe(horizontal & vertically down) & handle for operation of AB switch	SETS	2	2		
18.4	HG fuse set for 33 KV side of the Station transformer including base(each set comprises three single HG fuse)	SETS	2	2		
18.5	OUT DOOR KIOSK MADE OUT OF 3mm thick CRCA steel duly galvanised having gland plates OR BETTER quality WITH 3 NOS. OF CUT-OUTS(1000 AMPS) AT THE INCOMING SIDE , 1No. OF 3 PHASE SFU (500AMPS) AT THE OUTGOING SIDE AND SUITABLE BUS BAR ARRANGEMENT FOR TERMINATION of incoming cable from transformer & outgoing cable to Main ACDB.	SETS	2	2		
19	SUB STATION LIGHTING (AS PER SPECIFICATION AND APPROVED DRAWINGS)(Switch yard and other street area)					
19.1	SUB-STATION SWITCH YARD LIGHTING,IT INCLUDES SUPPLY OF FIXTURES & LAMPS (LED) of reputed make (Philips/CGL/Bajaj) with switch gear,GI Conduit etc.(Lighting fixtures are to be fixed rigidly on the Column at a suitable height so that the required lux can be achieved).(150 watt each)	SET	46	46		

19.2	STREET LIGHTING: IT INCLUDES SUPPLY OF GI TUBULAR POLE AS PER TECHNICAL SPECIFICATION, LED LIGHTING FIXTURES including LAMPS of reputed make (Philips/CGL/Bajaj/other approved make of OPTCL).(100 watt each) for Street Light. (TO BE PROVIDED IN THE SWITCH YARD, ALONG THE ROADS (APPROACH INSIDE YARD AND OTHER ROADS), COLONY QUARTERS AND OTHER ROADS. ALL MATERIALS AS PER APPROVED DRAWING AND SPECIFICATION TO COMPLETE THE STREET LIGHTING SYSTEM. PROPER EARTHING AS PER STANDARD PRACTICE					
19.2.1	LED LIGHTING FIXTURES including LAMPS of reputed make (Philips/CGL/Bajaj/other approved make of OPTCL).(100 watt each) for Street Light.	SET	25	25		
19.2.2	GI Tubular Pole: (410-SP-24: IS 2713-Part-II-1980 or latest) Length of pole 8.5 mtrs(minimum weight 158 Kgs). (ALL THE STREET LIGHT POLE SHALL BE OF GI TUBULAR POLE AND PROVISION OF A GI JUNCTION BOX WITH SUITABLE COVERS AT A HEIGHT OF 1 METRE FROM THE GROUND. THE JUNCTION BOX SHALL HAVE PROVISION OF FUSES, BUSES, CONNECTORS FOR CABLE IN AND OUT.	SET	25	25		
19.2.3	OUTDOOR KIOSK of 3 mm thick CRCA sheet duly hot dip galvanised FOR STREET LIGHT HAVING 2 NOS 200 AMP SWITCH FUSE UNITS AND 10 NOS. OUT LETS OF 32 AMP MCB. XLPE CABLES(3.5 CORE 120 SQMM) FROM MAIN ACDB FROM CONTROL ROOM TO THE OUT DOOR KIOSK. XLPE CABLE OF 4C X 16 SQMM FROM OUTDOOR KIOSK TO THE STREET LIGHT POLES AND 4CX6 SQMM FROM POLE TO POLE AND 2CX6 SQMM FROM POLE TO LIGHTING FIXTURES.	NO	1	1		
19.2.4	OUTDOOR KIOSK of 3 mm thick CRCA sheet duly hot dip galvanised FOR COLONY SUPPLY PURPOSE HAVING 2 NOS. 200 A SWITCH FUSE UNITS, 6 NOS.OUT LETS OF 32 AMP MCB FOR COLONY QUARTES. XLPE CABLES(3.5 CORE 120 SQM) FROM MAIN ACDB FROM CONTROL ROOM TO THE OUT DOOR KIOSK. 4CX16 SQMM FROM KIOSK TO EACH QUARTER.	NO	1	1		
20	2 TR capacity 5-star rated Split Air conditioning units with remote control facility: including supply of air conditioners, 5KVA voltage stabiliser(V-Guard), control boxes etc for completing the AC scheme. (As per specification) for control room, carrier room & conference room.	SET	20	20		
21	FIRE FIGHTING SYSTEM(PORTABLE AND WHEEL MOUNTED SETS FOR CONTROL ROOM,EQUIPMENT LIKE TRANSFORMER AND OTHER AREAS AS PER TECH SPEC(REFER TS-INST TO BIDDER BEFORE DESIGN-SL NO 16-ANNEXURE - I)					
21.1	FOAM TYPE-9 LTRS	NOS	4	4		
21.2	DRY CHEMICAL POWDER(TROLLEY MOUNTED)- 25 KGS	 NOS	4	4		
21.3	DRY POWDER TYPE -6 KGS	 NOS	4	4		
21.4	CO ₂ - 4.5 KGS	 NOS	10	10		
21.5	CO ₂ - 9.0 KGS	 NOS	10	10		
21.6	CO ₂ (TROLLY MOUNTED)- 22.5 KGS	NOS	4	4		

21.7	Water type- 9 LTRS	NOS	4	4		
21.8	Foam type - 50 LTR	NOS	2	2		
21.9	FIRE BUCKET (6 NOS IN EACH STAND) WITH STAND With Canopy arrangement					
		SET	5	5		
22	POWER TRANSFORMER 132/33 KV, 20 MVA(AS PER SPECIFICATION)	NOS	2	2		
		NOS	2	2		
	SUBSTATION AUTOMATION SYSTEM: Supply of the following 132 and 33 kV					
	level consisting of Panels, Bay control Units, DP Relays, Numerical O/C & E/F					
	Relays, DC Supervision relays, Trip Circuit Supervision, Trip Relay ,Test Block,					
	Differential with REF, Overflux, High impednce REF, Numerical O/C & E/F					
	relay,Transformer trouble relay etc. Station level consisting of Industrial					
23	Computer with accessories, PC with accessories, laser printer, UPS, GPS System					
	& Numerical bay control unit etc.					
23.1	132KV Level					
23.1.1	Yard AC Kiosk :4500 mm (L)x4000mm (W)x 3500mm (H) with Air Conditioning as	Nos.	2	2		
25/11/12	per the Specification;	1403.	-			
23.1.2	Numerical Bay control unit :24 Digital input & 20Nos digital out put with CT / PT	Nos.	5	5		
	Input cards. IEC 61850 protocol		-			
23.1.3	Numerical distance protection with the following functions: IEC 61850 protocol.	Nos.	2	2		
23.1.4	Numerical Transformer Differential/REF protection with the following functions:	Nos.	2	2		
	Over flux ,Over volt etc. IEC 61850 protocol		_	_		
	Numerical over current , earth fault relays: IEC 61850 protocol	Nos.	5	5		
23.1.6	High Impedance REF Relay	Nos.	2	2		
23.1.7	Numerical Centralised Bus bar protection.	Nos.	1 10	1 10		
23.1.8	AUXILIARY RELAY FOR DC SUPERVISION	Nos.		4		
23.1.9	AUXILIARY RELAY FOR TRANSFORMER TROUBLES 4	Nos.	4			
23.1.10	MPG - TEST BLOCK 2 HIGH SPEED TRIP RELAY(HAND RESET)	Nos.	14 5	14 5		
	` '		10	10		
23.1.12	TRIP CIRCUIT SUPERVISION RELAY 4 Line interface unit;	Nos.	3	3		
23.1.13	Ethernet switch IEC 61850-3,IEEE1588v2	sets.	6	6		
	Multimode glass fibre Optical cord Double jacket armoured ,rodent resilient.	seis.	0	0		
23.1.15	invariantode giass ribre Optical cord Double Jacket arribured ,rodent resilient.	Mtr.	1,000	1000		
	Simplex Cubicle type for process bus equipment , Swing frame front access			+		
23.1.16	(VSG), Dimension 2300mm (H) X 1000mm (D) X 1000mm (W), earth bar 25x6 Sq.	Set	5	5		
23.1.10	mm. Copper with the following components	Jet				
23.1.17	DCDB panel; With Bus bar Switches,600(L)X 400(W)X 500(H)	No.	2	2		
23.2	33 KV SIDE		_	_		
	Yard AC Kiosk :4500 mm (L)x3500mm (W)x 3300mm (H) with Air conditioning as					
23.2.1	per the Specification;	Nos.	1	1		
	Integrated Numerical Bay control unit with protection function :16Digital input &		_	_		
23.2.2	10Nos digital out put with CT / PT Input cards	Nos.	8	8		
23.2.3	DC Supervision Relay	Nos.	16	16		
23.2.4	TRIP Relay	Nos.	8	8		
23.2.5	Test Block	Nos.	16	16		
23.2.6	Line interface unit;	sets.	2	2		
						1

23.2.7	Ethernet switch IEC 61850-3,IEEE1588v2	sets.	3	3		
23.2.8	Multimode glass fibre Optical cord Double jacket armoured ,rodent resilient	Mtr.	500	500		

23.2.9	Simplex Cubicle type for process bus equipment , Swing frame front access (VSG), Dimension 2300mm (H) X 900mm (D) X 900mm (W), earth bar 25x6 Sq. mm. Copper with the following components	Set	4	4		
23.2.10	DCDB panel; With Bus bar Switches,600(L)X 400(W)X 500(H)	No.	1	1		
23.3	Station Level					
23.3.1	Windows based Industrial computer with standard accessories – Keyboard, mouse, monitor with operating software window 10 or 8, IED configuration, substation automation, . Main & Back up. With automation softwares. Main	set	2	2		
23.3.2	Windows based PC with standard accessories – Keyboard, mouse, monitor with operating software window 10 or 8, IED configuration, substation automation, Disturbance recorder software. DR & work Station PC.Client	set	1	1		
23.3.3	Color Laser jet Printer	No.	1	1		
	UPS , 3KVA	No.	2	2		
23.3.5	GPS System with PTP	set	1	1		
	Gateway for SCADA	set	1	1		
23.3.7	Large vedio screen of 60 inches for display including all type of accessories	set	1	1		
23.4	AC & DC SYSTEM					
	AC SYSTEM					
	MAIN AC DB, (HAVING 800 A, 50KA, DRAWOUT TYPE ACB WITH 3 O/C, E/F, U/V RELAYING FACILITY INDOOR TYPE AS PER SPECIFICATION. (MAIN DB-1, MAIN DB-2 WITH B/C)	SET	1	1		
23.4.1.2	ACDB (HAVING 400A MCCB) AS PER SPECIFICATION (AC DB-1, AC DB-2 WITH B/C)	SET	1	1		
23.4.1.3	MAIN LIGHTING DISTRIBUTION BOARD (HAVING 250A MCCB AS INCOMER)AS PER SPECIFICATION (WITH DB-1, DB-2 & B/C)	SET	1	1		
23.4.1.4	INDOOR LIGHTING DISTRIBUTION BOARD AS PER SPECIFICATION. (WITH DB-1,DB-2 & B/C)	SET	1	1		
23.4.1.5	EMERGENCY LIGHTING DISTRIBUTION BOARD	SET	1	1		
23.4.1.6	INDOOR RECEPTACLE BOARD	SET	1	1		
23.4.2	DC SYSTEM					
23.4.2.1	220 V DC BOARD (HAVING 100A DC MCCB AS INCOMER, E/F (EARTH LEAKAGE), UNDER & OVER VOLTAGE AS PER SPECIFICATION (DC DB-1)	SET	1	1		
23.4.2.2	220 V DC EMERGENCY DISTRIBUTION BOARD	SET	1	1		
23.4.2.3	BATTERY (350 AH PLANTE TYPE) FOR 220 V DC	SET	1	1		
23.4.2.4	BATTERY CHARGER FOR 220 V, 350 AH BATTERY (FLOAT AND FLOAT CUM BOOST)	SET	1	1		
24	DISTLED WATER PLANT OF 10 LTR/HR FOR BATTERY BANKS	SET	1	1		
25	WALKIE TALKIE SET	SET/ PAIR	2	2		
26	PORTABLE ALUMINIUM LADDER EXTENDABLE TYPE OF ADEQUATE HEIGHT TO BE USED FOR MAINTENANCE OF EQUIPMENT INSIDE SWITCH YARD.	NOS	2	2		
27	PEDESTAL MOUNTED WHEEL FITTED DERRICK FOR LIFTING/ LOWERING OF MATERIALS UP TO 1.5 TON CAPACITY.	SET	1	1		
28	POWER WINCH NEAR STORE SHED FOR HANDLING MATERIALS UPTO 5 TON CAPACITY.	SET	1	1		
29	WATER COOLER WITH WATER PURIFIER SYSTEM	NOS	1	1		

30	MAINTENANCE TESTING EQUIPMENT (AS PER ANNEXURE - I ,INDICATED IN TS-					
	TIMK-SCHEDULE OF REQUIREMENTS OF MAINTENANCE EQUIPMENT)	SET	1	1		

31	OTHER TOOLS AND PLANTS (T&P's) REQUIREMENT (AS PER ANNEXURE - II ,INDICATED IN TS-TIMK-SCHEDULE OF REQUI-REMENTS OTHER T&P's)	SET	1	1			
32	OFFICE FURNITURE (AS PER ANNEXURE - III , INDICATED IN TS-TIMK-SCHEDULE OF REQUIREMENTS OFFICE FURNITURE)>PLACING IN CONTROL ROOM,CONFERENCE ROOM, OFFICE ROOMS, LIBRARY, TESTING LAB, etc.	SET	1	1			
33	BEST QUALITY &APPROVED MAKE INSULATING MAT (Confirming to IS:15652:2006) TO BE KEPT INFRONT OF ALL PANELS,BOARDS ETC.(2000X1000X3)mm Size	NOS	37	37			
OTAL C	OF SUBSTATION-SCHEDULE-1 -Plant (to Schedule No. 6 Grand Summary)		T				
					Bidder:		
		1		-			
	Bidders shall enter a code representing the country of origin of all imported plant ar	ıd equipment.		-			
	¹ Bidders shall enter a code repre <i>senting the country of origin of all</i> imported plant ar ² Specify currency in accordance with specifications in Bid Data Sheet under ITB 19.1 currencies.		or ITB 34.1 in Two-S	Stage Bid. Create		nns for Unit Price and Tota	al Price as there are
	² Specify currency in accordance with specifications in Bid Data Sheet under ITB 19.1 currencies. Country of Origin Declaration Form	1 in Single-Stage Bid, o	or ITB 34.1 in Two-S	Stage Bid. Create		nns for Unit Price and Tota	al Price as there are
Item	² Specify currency in accordance with specifications in Bid Data Sheet under ITB 19.1 currencies. Country of Origin Declaration Form	1 in Single-Stage Bid, o	or ITB 34.1 in Two-S	Stage Bid. Create		nns for Unit Price and Tota	d Price as there are
Item	² Specify currency in accordance with specifications in Bid Data Sheet under ITB 19.1 currencies. Country of Origin Declaration Form	1 in Single-Stage Bid, o		Stage Bid. Create		nns for Unit Price and Tota	al Price as there are

NAME OF THE WORK:- Design, Supply and Installation of 2X20 MVA-132/33 KV Sub-station at Gondia and associated 132 KV D/C LILO line from existing TTPS-DUBURI 132 KV Line to proposed Sub-station at Gondia (Approx. Line length-25.304 Km) in Odisha State of India under PACKAGE-6 Under Japan International Cooperation Agency (JICA)'s ODA Loan.

FB No: [CPC/JICA/ICB/06/17-18/......]-Reference Identification No[OPTCL/JICA/PKG-6] Loan Agreement No: [ID-P245] -Schedule No. 1. Plant Supplied from Abroad (Transmission Line) NAME OF THE BIDDER to proposed S/S (Approx. th- 25.034 km) 132kV LILO line from existing 132kV TTPS-Unit Price² DESCRIPTION OF ITEMS(SCHEDULE-1-Line) UNITS Item SUPPLY OF FOLLOWING EQUIPMENT & MATERIALS Code¹ Duburi to J GONDIA S/A Line length-Total Price² (As per Technical Specification) In Foreign Currency CIP **(1)** (2) (3) (1) x (3)SUPPLY of Following type tested Lattice type Galvanized steel tangent / Angle tower with stubs and cleats, different type of G.I HT Nuts & Bolts, washer, spring washer for the towers ,hanger and all accessories, tower super structure complete including step bolts. Supply of black bituminous paint for three coats up to a height of 500mm above the cooping(legs & bracing members). All Supply should confirm to the Technical Specification. PA TYPE (SUSPENSION) TOWERS (Nominal unit weight 3.430 MT) (73nos) 250.390 1.1 MT 1.1.1 +3 EXTENSION (Nominal unit weight 0.611 MT) (06 nos) MT 3.666 1.1.2 +6 EXTENSION (Nominal unit weight 1.349 MT) (0 nos) MT 0.000 49.730 PB TYPE (30 deg ANGLE) TOWERS (Nominal unit weight 4.973 MT) (10nos) MT 1.2.1 +3 EXTENSION (Nominal unit weight 1.018 MT) (0 Nos) MT 0.000 1.2.2 +6 EXTENSION (Nominal unit weight 2.104 MT) (0 nos) MT 0.000 PC TYPE (60 deg ANGLE) TOWERS (Nominal unit weight6.214MT) (9 NOS.) 55.926 1.3 MT 2.238 1.3.1 +3 EXTENSION (Nominal unit weight 1.119 MT) (2 nos) MT 1.3.2 +6 EXTENSION (Nominal unit weight 2.342 MT) (0 nos) MT 0.000 1.4 TEMPLATES PA (Nominal unit weight 0.665 MT)(4 Nos.) MT 1.4.1 2.660 1.4.2 PB (Nominal unit weight 0.602MT)(1 Nos.) MT 0.602 0.904 1.4.3 PC (Nominal unit weight 0.904MT)(1 Nos.) MT 384.422 1.5 WEIGHT OF THE STRUCTURES (including Tower stubs) MT Weight of different type G.I Nuts and Bolts[including 5% extra] MT 29.4 Supply of the following tower accessories as per technical specification and as 2.0

directed by the engineer in charge.

2.1 EARTHING DEVICE Nos. 92 2.2 DANGER BOARD Nos. 92 2.3 NUMBER PLATE Nos. 92 2.4 PHASE PLATE Nos. 92 2.5 BIRD GUARD Nos. 438 2.6 ANTICLIMBING DEVICE Nos. 438 2.7 CIRCUIT PLATE Nos. 184 3.0 provision for 1.5 % sag and wastage as per the technical specification and as per the instruction of the engineer in charge Set 150 4.1 POWER CONDUCTOR ACESSORIES Nos. 558 4.1 For ACSR PANTHER SET 150 4.1.1 REPAIR SLEEVE SET 150 4.1.2 MID SPAN JOINT SET 150 4.1.3 REPAIR SLEEVE SET 150 4.1.4 PA ROD FOR ACSR PANTHER SET 150 4.1.5 PA CLAMP FOR ACSR PANTHER SET 150 5.0 Supply of OPGW fibre Optic cable for speech, data & protection Supply of OPGW fibre Optic cable for speech, data & protection Supply of OPGW fibre optic cable hardware set like suspension assembly (dead end assembly, pass through assembly), Vibration Damper, Down lead clamp assembly of OPGW fibre optic cable hardware set like suspension assembly (dead end assembly, pass through assembly), Vibration Damper, Down lead clamp assembly of OPGW fibre optic cable for speech, data & protection Supply of the following Anti Gg type Pocelain longrod insulators as per the technical specification and as per the instruction of the Engineer in charge Supply of the following Anti Gg type Pocelain longrod insulators as per the technical specification and as per the instruction of the Engineer in charge Supply of the following hard ware fittings suitable for 90 KN long rod Supply of the following hard wares fittings. (AGS type) suitable for 90 KN long rod Supply of Declain of Hard wares fittings. (AGS type) suitable for 90 KN long rod Supply of Declain of Insulator. Nos. 126 5.1 Single tension Hard wares fittings. (AGS type) suitable for 90 KN long rod Insulator. Nos. 126	
2.3 NUMBER PLATE Nos. 92 2.4 PHASE PLATE Nos. 552 2.5 BIRD GUARD Nos. 438 2.6 ANTICLIMBING DEVICE Nos. 92 2.7 CIRCUIT PLATE Nos. 92 2.7 CIRCUIT PLATE Nos. 184 3.0 provision for 1.5 % sag and wastage as per the technical specification and as per the instruction of the engineer in charge. 3.1 ACSR PANTHER Nos. 154.10 4.0 POWER CONDUCTOR ACESSORIES STATE NOS. 1558 4.1.1 VIBRATION DAMPER Nos. 558 4.1.2 MID SPAN JOINT Set 150 4.1.3 RPARIS LEEVE Set 150 4.1.4 PA ROD FOR ACSR PANTHER Set 150 4.1.4 PA ROD FOR ACSR PANTHER Set 150 5.0 Supply of OPGW fibre Optic Cable for speech, data & protection Deformation of the position of the position assembly (dead end assembly, pass through assembly), Uibration Damper, Down lead clamp assembly, assemblies for 24/48fibre (DWSM) OPGW joint Box 4.0 Supply of the following Anti fog type Pocelain longrod insulators as per the technical specification and as per the instruction of the Engineer in charge Poce 120 Nos. 120 5.1 Supply of the following Anti fog type Pocelain longrod insulators as per the technical specification and as per the instruction of the Engineer in charge Poce 120 Nos. 120 5.1 Supply of the following Anti fog type Pocelain longrod insulators as per the technical specification and as per the instruction of the Engineer in charge Poce 120 Nos. 120 5.1 Supply of the following Anti fog type Pocelain longrod insulators as per the technical specification. Nos. 1480 6.2 Supply of the following hard wares fittings suitable for ACSR Panther conductors as per the technical specification. Nos. 1486 6.1 Pock None Rod Insulator for 132 kV Nos. 1486 6.2 Supply of the following hard wares fittings suitable for 90 KN long rod Insulator. Nos. 1486 6.1 Nos. 1486 6.2 Nos. 1486 6.3 Supply of the following hard wares fittings suitable for 90 KN long rod Insulator. Nos. 1486 6.4 Nos. 1486 6.5 Nos. 1486 6.7 Nos. 1486 6.7 Nos. 1486 6.8 Nos. 1486 6.9 No	
2.4 PHASE PLATE Discription of the PLATE Discription of the engineer in charge. 3.1 ACSR PANTHER 4.1.1 POR ACSR PANTHER 4.1.1 VIBRATION DAMPER 4.1.2 MID SPANI SOLEVE Declared of the engineer of the e	
2.5 BIRD GUARD 2.6 ANTICLIMBING DEVICE 2.7 CIRCUIT PLATE Supply of following POWER CONDUCTORS in the proposed 132 kV lines with provision for 1.5 % sag and wastage as per the technical specification and as per the instruction of the engineer in charge. 3.1 ACSR PANTHER 4.0 POWER CONDUCTOR ACESSORIES 4.1 FOR ACSR PANTHER 4.1.1 VIBRATION DAMPER 4.1.2 MID SPAN JOINT 4.1.3 REPAIR SLEEVE 4.1.4 P A ROD FOR ACSR PANTHER 5et 150 4.1.4 P A ROD FOR ACSR PANTHER 5et 438 4.1.5 PG CLAMP FOR ACSR PANTHER 5et 438 6.0 Supply of OPGW fibre Optic Cable for speech, data & protection 6.0 OPGW fibre optic cable hardware set like suspension assembly, tension assembly (dead end assembly, pass through assembly), Vibration Damper, Down lead clamp 5.2 assemblies for 24/48fibre (DWSM) OPGW joint Box 6.0 Supply of the following Anti fog type Pocelain longrod insulators as per the technical specification and as per the instruction of the Engineer in charge. 6.1 90 KN Long Rod Insulator for 132kV 7.0 Supply of the following hard ware fittings suitable for ACSR Panther conductors as per the technical specification. 7.1 For ACSR PANTHER Single suspension Hard wares fittings.(AGS type) suitable for 90 KN long rod insulator. 7.1.2 insulator. Nos. 12	
2.6 ANTICLIMBING DEVICE Nos. 92 2.7 CIRCUIT PLATE Nos. 92 3.0 Plyply of following POWER CONDUCTORS in the proposed 132 kV lines with provision for 1.5 % sag and wastage as per the technical specification and as per the instruction of the engineer in charge. 3.1 ACSR PANTHER Kms. 154.10 4.0 POWER CONDUCTOR ACESSORIES 4.1 For ACSR PANTHER Nos. 558 4.1.1 MIRSTION DAMPER Nos. 558 4.1.2 MID SPAN JOINT Set 150 4.1.3 REPAIR SLEEVE Set 150 4.1.3 REPAIR SLEEVE Set 150 4.1.4 PAR ADD FOR ACSR PANTHER Set 150 4.1.5 PG CLAMP FOR ACSR PANTHER Set 150 5.0 Supply of OPGW fibre Optic Cable for speech, data & protection Set 54 5.1 48 fiber (DWSM) OPGW fibre optic cable for speech, data & protection Set 54 5.2 Jassemblies for 24/48fibre (DWSM) OPGW joint Box kms 5.0 Supply of the following Anti fog type Pocelain longrod insulators as per the technical specification and as per the instruction of the Engineer in charge Supply of the following hard ware fittings suitable for ACSR Panther Conductors as per the technical specification and as per the instruction of the Engineer in charge Single suspension Hard wares fittings.(AGS type) suitable for 90 KN long rod Insulators on the Single suspension Hard wares fittings.(AGS type) suitable for 90 KN long rod Insulators on the Single suspension Hard wares fittings.(AGS type) suitable for 90 KN long rod Insulators Nos. 12	
2.7 CIRCUIT PLATE Supply of Following POWER CONDUCTORS in the proposed 132 kV lines with provision for 1.5 % sag and wastage as per the technical specification and as per the instruction of the engineer in charge. 3.1 ACSR PANTHER 4.0 POWER CONDUCTOR ACESSORIES 4.1 FOR ACSR PANTHER 4.1.1 VIBRATION DAMPER 4.1.2 MID SPAN JOINT 4.1.3 REPAIR SLEEVE 5et 150 4.1.4 P A ROD FOR ACSR PANTHER 4.1.4 P A ROD FOR ACSR PANTHER 5.0 Supply of POR ACSR PANTHER 5.1 Set 438 4.1.5 PG CLAMP FOR ACSR PANTHER 5.0 Supply of OPGW fibre Optic Cable for speech, data & protection 5.1 48 fiber (DWSM) OPGW fiber optic cable OPGW fibre optic cable hardware set like suspension assembly, tension assembly (dead end assembly, pass through assembly), Vibration Damper, Down lead clamp assembly, pass through assembly), Vibration Damper, Down lead clamp assembly for 24/48fibre (DWSM) OPGW joint Box Supply of the following Anti fog type Pocelain longrod insulators as per the technical specification and as per the instruction of the Engineer in charge . 6.0 Supply of the following Anti fog type Pocelain longrod insulators as per the technical specification and as per the instruction of the Engineer in charge . 7.0 Supply of the following hard ware fittings suitable for ACSR Panther conductors as per the technical specification. 7.1 For ACSR PANTHER Single suspension Hard wares fittings.(AGS type) suitable for 90 KN long rod insulator. Nos. 12	
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7.1.1 insulator. Nos. Double suspension Hard wares fittings.(AGS type) suitable for 90 KN long rod insulator. Nos. 12	
7.1.2 insulator. Nos.	
7.1.3 Single tension Hard ware fittings suitable for 120 KN long rod insulator. Nos. 216	
7.1.4 Double tension Hard wares fittings suitable for 120 KN long rod insulator. Nos.	
7.1.5 "D" Shackle Nos. 228	
7.1.6 Hanger Nos. 438	
7.1.7 U'-Bolt. Nos 92	
TOTAL OF Schedule-1 Line To Schedule-6 Grand Summary	
Name of Bidder:	
Signature of Bidder:	

Name of Bidder:	
Signature of Bidder:_	

	¹ Bidders shall enter a code representing the country of origin of all	imported plant and equipmer	nt.				
	² Specify currency in accordance with specifications in Bid Data Sheet under ITB 19.1 in Single-Stage Bid, or ITB 34.1 in Two-Stage Bid. Create and use as many columns for Unit Pri and Total Price as there are currencies.						
Country o	f Origin Declaration Form						
Item	Description	Code	Country				

NAME OF THE WORK:-Design, Supply and Installation of 2X20 MVA-132/33 KV Sub-station at Gondia and associated 132 KV D/C LILO line from existing TTPS-DUBURI 132 KV Line to proposed Sub-station at Gondia (Approx. Line length-25.304 Km) in Odisha State of India under PACKAGE-6 Under Japan International Cooperation Agency (JICA)'s ODA Loan.

Loan Agreement No: [ID-P245] - FB No: [CPC/JICA/ICB/06/17-18/......] Reference Identification No[OPTCL/JICA/PKG-6]

Schedule No. 2. Plant Supplied from Within the Employer's Country	ant Supplied from Within the Employer's	Country
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	NAME OF THE BIDDER					
SI No	DESCRIPTION OF ITEMS(SCHEDULE-2-SS) SUPPLY OF FOLLOWING EQUIPMENT & MATERIALS (As per Technical Specification)	UNIT	QUANTITY: for Construction of 2X20 MVA, 132/33 KV S/S,Gondia (132 KV Bay-05 Nos.: 02 FDR, 02 TRF, 01 B/C, 2nos unequipped spare bay) & (33 KV Bay-08 Nos.: 05 FDR, 02 TRF & 01 B/C, 2nos unequipped spare bay)	Total Quantity	Unit Price ²	Total Price ²
				(1)	(2)	(1) x (2)
1	145 KV,800-400-200 A,31.5 KA,4CORE SINGLE PHASE CURRENT TRANSFORMER (3 NOS PS CLASS & 1 NO. 0.2s CLASS)	NOS	15	15		
2	145 KV,1250A,31.5KA,ISOLATORS					
2.1	S/I WITH OUT EARTH SWITCH	NOS	9	9		
2.2	D/I WITH SINGLE EARTH SWITCH	NOS	2	2		
2.3	D/I WITHOUT EARTH SWITCH	NOS	2	2		
3	145 KV, 6600pF, 3CORE,SINGLE PHASE CAPACITOR VOLTAGE TRANSFORMER	NOS	6	6		
4	120 KV METAL OXIDE SURGE ARRESTOR, 10 KA, Class III	NOS	12	12		
5	145 KV, 2 CORE, SINGLE PHASE, IVT	NOS	3	3		
6	132 KV Bus Post Insulators	NOS	16	16		
7	145KV, 3150A, 40KA, SF6, CIRCUIT BREAKER WITH SUPPORTING STRUCTURE	SET	5	5		
8	36 KV,800-400-200,25KA,3 CORE SINGLE PHASE CURRENT TRANSFORMER(2 NOS PS CLASS & 1 NO. 0.2s CLASS)	NOS	18	18		
8.1	36 KV, 800-400-200, 25KA, 4 CORE SINGLE PHASE CURRENT TRANSFORMER (3 NOS PS CLASS & 1 NO. 0.2s CLASS)	NOS	6	6		
9	36 KV,1250A,25KA,ISOLATORS					
9.1	S/I WITH OUT EARTH SWITCH	NOS	9	9		
9.2	D/I WITH SINGLE EARTH SWITCH	NOS	5	5		
9.3	D/I WITHOUT EARTH SWITCH	NOS	2	2		
	S/I WITH BEAM MOUNTED	NOS	2	2		
10	30 KV, METAL OXIDE SURGE ARRESTOR, 10KA, class II	NOS	27	27		
11	36 KV ,2 CORE,SINGLE PHASE,IVT(1 core 3P & other core 0.2s)	NOS	3	3		
12	36 KV,1250A,25KA,VACUUM CIRCUIT BREAKER WITH SUPPORTING STRUCTURE	NOS	8	8		
13	33 KV Bus Post Insulators	NOS	22	22		
14	BUS BAR & CIRCUIT MATERIALS					

14.1.1 14.1.2 14.1.3	TENSION & SUSPENSION ANTI FOG TYPE INSULATOR 120 kN Long Rod Insulator for 132kV side. 90 kN Long Rod INSULATOR for 132kV side.	NOS	102	102	
14.1.2 14.1.3		NOS	102	102	
14.1.3	90 kN Long Rod INSULATOR for 132kV side				
		NOS	24	24	
	120 kN Long Rod INSULATOR for 33kV side.	NOS	66	66	
	90 kN Long Rod INSULATOR for 33kV side.	NOS	28	28	
	ACSR MOOSE CONDUCTOR	KMS	4	4	
	HARDWARES & FITTINGS/SPACERS/CLAMP & CONNECTORS				
	132 KV Double Tension H/W fitting with adjustable turn buckle suitable for twin ACSR Moose (Single Anchoring Point)	NOS	18	18	
14.3.1	132 KV Single Tension H/W fitting with adjustable turn buckle suitable for Single ACSR Moose	NOS	42	42	
14.3.2	132 KV Single suspension H/W fitting suitable for single ACSR Moose	NOS	24	24	
	132 KV Single suspension H/W fitting suitable for twin ACSR Moose	NOS	3	3	
	33 KV Single Tension H/W fitting with adjustable turn buckle suitable for single ACSR Moose	NOS	30	30	
14.3.6	33 KV Single Suspension H/W fitting suitable for single ACSR Moose	NOS	27	27	
14.3.7	33 KV Double Tension H/W fitting with adjustable turn buckle suitable for twin ACSR Moose (Single Anchoring Point)	NOS	18	18	
	132KT- clamp for ACSR PANTHER run to ACSR MOOSE drop	NOS	24	24	
	132 KV 'T' Clamp for single Moose run with single Moose ACSR drop	NOS	60	60	
	132 KV 'T' Clamp for twin Moose run with single Moose ACSR drop	NOS	15	15	
	33 KV 'T' Clamp for single Moose run with single Moose ACSR drop	NOS	78	78	
	33 KV 'T' Clamp for twin Moose run with single Moose ACSR drop	NOS	39	39	
	132 KV PI Clamp	NOS	16	16	
	Spacer for Twin Bus ACSR 132 KV Bus	NOS	54	54	
	Spacer for Twin Bus ACSR 33 KV Bus	NOS	22	22	
	132 KV LA Clamp	NOS	12	12	
	132 KV CVT Clamp	NOS	12	12	
	132 KV CT Clamp(BIMETALLIC)	NOS	36	36	
	132 KV IVT Clamp	NOS	6	6	
	132kKV Isolater Pad Clamp	NOS	127	127	
	132 KV CB Clamp	NOS	36	36	
	33 KV PI Clamp	NOS	15	15	
14.3.23	33 KV Isolator pad clamp	NOS	117	117	
14.3.24	33 KV LA Clamp	NOS	27	27	
14.3.25	33 KV_CT/NCT Clamp	NOS	50	50	
14.3.26	33 KV IVT Clamp	NOS	3	3	
	33 KV CB Clamp	NOS	48	48	
14.3.28	PG Clamp for ACSR Moose	NOS	150	150	
14.4	EARTH SPIKES & IT'S HARDWARES & FITTING				
14.4.1	FOR 132KV SIDE :26 NOS @ 7 MTRS LENGTH EACH	SET	26	26	
14.4.2	FOR 33 KV SIDE:23 NOS @ 5 MTRS EACH	SET	23	23	
14.5	SUBSTATION EARTHING SYSTEMS				
14.5.1	EARTHING CONDUCTOR FOR BURRIAL: 75X10 mm GI Flat for laying (spacing maximum 5m both way)	MT	62	62	
	EARTHING CONDUCTOR: 50X6 mm GI Flat for Raiser from the burial earth mat to equipment,structure etc)	MT	15	15	
	EARTHING DEVICE & ASSOCIATED ACCESSORIES (50 mm heavy duty GI PERFORATED PIPE 3 mtrs long for treated earth pit)	NOS	125	125	
14.5.4	EARTHING DEVICE & ASSOCIATED ACCESSORIES 40mm MS rod 3 mtrs long for non treated earth pit)	NOS	90	90	

14.5.5.1						
14.5.5.1	14.5.5					
1.6. G. Cable Trays including G.I. support Angle suitable for different sections i.e. Section:1.1,2.2,3-3 & 4-4 along with its accessories as per TS.	14.5.5.1					
14.6.1 Gl. Cable Traystitize 35007592500mm)		(ii)Betonite powder 9Kg per meter for 75/10 GI flat burial.	MT	48	48	
14.6.1 Gl. Cable Traystitize 35007592500mm)						
14.6.1 G. Cable Trays(size: 450/CSC2500mm)	14.6	, · · · · · · · · · · · · · · · · · · ·				
1.6.2 GLOBB Trystysise: 300x/5x2500mm MTRS 2200 2200 1.6.3 GLOBB Trystysise: 300x/5x2500mm MTRS 1350 1350 1.6.4 Support 1.6.2 1.6.2 1.6.2 1.6.2 1.6.2 1.6.4 Support 1.6.2 1.6.2 1.6.2 1.6.2 1.6.4 Support 1.6.2 1.6.2 1.6.2 1.6.4 Support 1.6.2 1.6.2 1.6.2 1.6.5 Substation 1.6.2 1.6.2 1.6.5 Substation 1.6.2 1.6.2 1.6.7 Substation 1.6.2 1.6.2 1.6.7 Substation 1.6.2 1.6.2 1.6.7 Support 1.6.2 1.6.7 Support 1.6.2 1.6.2 1.6.7 Support 1.6.2 1.6.7		along with its accessories as per TS.				
1.6.2 GLOBB Trystysise: 300x/5x2500mm MTRS 2200 2200 1.6.3 GLOBB Trystysise: 300x/5x2500mm MTRS 1350 1350 1.6.4 Support 1.6.2 1.6.2 1.6.2 1.6.2 1.6.2 1.6.4 Support 1.6.2 1.6.2 1.6.2 1.6.2 1.6.4 Support 1.6.2 1.6.2 1.6.2 1.6.4 Support 1.6.2 1.6.2 1.6.2 1.6.5 Substation 1.6.2 1.6.2 1.6.5 Substation 1.6.2 1.6.2 1.6.7 Substation 1.6.2 1.6.2 1.6.7 Substation 1.6.2 1.6.2 1.6.7 Support 1.6.2 1.6.7 Support 1.6.2 1.6.2 1.6.7 Support 1.6.2 1.6.7						
14.6.3	14.6.1	G.I Cable Trays(size: 450x75x2500mm)	MTRS	1550	1550	
14.6.3						
14.5.4						
14.7.1 NAY MARISHALIUS SICOK NOS 7 7 7 7 7 7 7 7 7						
14.7.1 SWINGER SAN MARSHALLING KIOSE NO.5 7 7 7 14.7.2 SWITCH YARD AC CONSOLE FOR LIGHTING NO.5 2 2 2 14.7.3 SWITCH YARD AC CONSOLE FOR LIGHT RUTE FATON NO.5 1 1 14.7.4 SWITCH YARD RECEPTACLE BOARD FOR WELDING & OTHER EMERGENCY NO.5 1 1 14.7.4 SWITCH YARD RECEPTACLE BOARD FOR WELDING & OTHER EMERGENCY NO.5 2 2 2 14.7.5 SWITCH YARD RECEPTACLE BOARD FOR WELDING & OTHER EMERGENCY NO.5 1 1 15. SWITCH YARD STRUCTURES COLUMN & BEAM (LATTICE TYPE) FOR 132/33 KV CLASS INCLUDING POUNDATION BOLTS & NUTS. NO.5 33 KV CT-8 No.5, 33 KV CT-8 No.5, 33 KV CT-8 No.5, 132 KV CVT-2 No., 132 KV NOT-2 NO.,		11 0	MT	3	3	
14.7.2 SWITCH YARD AC CONSOLE FOR LIGHTING	14.7	SUB STATION SWITCYARD BMK, AC CONSOLE & OTHER MARSHALLING BOXES				
14.7.2 SWITCH YARD AC CONSOLE FOR LIGHTING						
14.7.3 SWITCH YARD RECEPTACLE BOARD FOR YEAD UNE RATHERSTON NOS 1 1 1 1 1 1 1 1 1						
14.7.4 SWITCH YARD BECEPTACLE BOADD FOR WELDING & OTHER EMERGENCY NOS 2 2 2 14.7.5 CT, PT & CVT OUL BOOY CONSOLE BOXES (132 KY CT-5 Nos., 33 KY CT-8 Nos., 132 KY CT-5 Nos., 132 KY CT-5 Nos., 132 KY CT-1 NoS 17 17 17 17 17 18 18 18						
14.7.5 CT. PT & CVT OUT Door Console Boxes (132 KV CT-8 Nos., 33 KV CT-8 Nos., 132 KV KVT-1 No.) 17						
1 No. 33 K V NT-1 No.)			NOS	2	2	
1 No. 33 KV INT-1 No.)	14.7.5		NOS	17	17	
FOUNDATION BOLTS & NUTS.		, ,				
15.1.1 T15.132 KY (NOMINAL UNIT WT- 0.25 MT) = 0.6 sets	15	· · · · · · · · · · · · · · · · · · ·				
15.1.1 Tis-132 kV (NOMINAL UNIT WT-0.95 MT] = 06 sets MT 5.70 5.7						
15.1.2 T4S - 132KV (NOMINAL UNIT WT- 0.95 MT) = 06 sets	15.1	DIFFERENT TYPES OF COLUMNS WITH DETAILS				
15.1.2 145 - 132KV (NOMINAL UNIT WT- 0.95 MT) = 06 sets	15.1.1	T1S - 132 KV(NOMINAL UNIT WT- 1.2 MT) = 20 Sets.	MT	24.00	24	
15.1.3 T85 - 33KV (NOMINAL UNIT WT - 0.83 MT) - 95ets.	15.1.2	T4S - 132KV (NOMINAL UNIT WT- 0.95 MT) = 06 sets	MT	5.70	5.7	
15.2. DIFFERENT TYPE OF BEAMS WITH DETAILS	15.1.3		MT	7.47	7.47	
15.2.1 G1 - 132 KV(NOMINAL UNIT WT - 0.62 MT) = 17 Sets.	15.1.4	T9S - 33KV(NOMINAL UNIT WT- 0.6 MT) = 14 Sets.	MT	8.40	8.4	
15.2.2 GIX - 132 KV (NOMINAL UNIT WT- 0.62 MT) = 2 Sets. MT 1.16 1.164 15.2.3 G2 - 132 KV (NOMINAL UNIT WT- 0.97 MT) = 0 S Sets MT 5.40 5.4 15.2.4 G1Z - 132 KV (NOMINAL UNIT WT- 0.97 MT) = 0 S Sets MT 2.50 2.5 15.2.5 G6 - 33KV (NOMINAL UNIT WT- 0.53 MT) = 04 Sets. MT 2.12 2.12 15.2.6 G6 - 33KV (NOMINAL UNIT WT- 0.44 MT) = 09 Sets. MT 3.60 3.6 15.2.7 G4X - 33KV (NOMINAL UNIT WT- 0.44 MT) = 09 Sets. MT 0.80 0.8 15.3 TOTAL WEIGHT OF COLUMN & BEAM MT 7.101 71.01 15.4 SWITCH YARD EQUIPMENT STRUCTURES (LATTICE TYPE) FOR 132/33 KV CLASS INCLUDING FOUNDATION BOLTS & NUTS. 15.4.1 ISOLATORS-132KV 15.4.2 SI.WITH & WITHOUT E/S (Unit weight - 658.767 Kg) = 9 Nos MT 1.96 1.9582 15.4.3 DI. WITHOUT E/S (Unit Weight - 1120.559 Kg) = 2 Nos. MT 1.96 1.9582 15.4.4 DI. WITH E/S (Unit Weight - 294.893 Kg) = 9Nos. MT 2.65 2.6532 15.4.5 ISOLATORS-33 KV 15.4.6 SI. WITHOUT E/S (Unit weight - 670.555 Kg) = 5 Nos. MT 1.31 1.3114 15.4.8 DI. WITH E/S (Unit weight - 670.555 Kg) = 5 Nos. MT 3.35 3.3525 15.4.9 CTS-132 KV (Unit Weight - 124.566 Kg) = 1 Nos. MT 3.22 3.2175 15.4.10 CTS-33 KV (Unit Weight - 124.566 Kg) = 1 Nos. MT 2.68 2.6784 15.4.11 CVTS-132 KV (Unit Weight - 124.890 Kg) = 8Nos MT 1.42 1.4196	15.2	DIFFERENT TYPE OF BEAMS WITH DETAILS				
15.2.3 G2 - 132 KV(NOMINAL UNIT WT- 0.9 MT) = 06 Sets MT 5.40 5.4 15.2.4 G1,2 - 132 KV(Each two beams of G1 type) (NOMINAL UNIT WT- 1.25 MT) = 2 MT 2.50 2.5 15.2.5 G6 - 33KV (NOMINAL UNIT WT- 0.53 MT) = 04 Sets. MT 2.12 2.12 15.2.6 G4 - 33KV (NOMINAL UNIT WT- 0.4MT) = 09 Sets. MT 3.60 3.6 15.2.7 G4X - 33KV (NOMINAL UNIT WT- 0.4 MT) = 2Sets. MT 0.80 0.8 15.3 TOTAL WEIGHT OF COLUMN & BEAM MT 71.01 71.01 15.4 SUTTON BOLTS & NUTS. SWITCH YARD EQUIPMENT STRUCTURES (LATTICE TYPE) FOR 132/33 KV CLASS INCLUDING FOUNDATION BOLTS & NUTS. SULATORS-132KV SI.WITH 6.5 (Unit weight - 658.767 Kg) = 9 Nos MT 5.93 5.9283 15.4.1 SOLATORS-132KV SI.WITH OUT E/S (Unit weight - 979.10 Kg) = 2 Nos. MT 1.96 1.9582 15.4.4 D.I. WITHOUT E/S (Unit Weight - 1120.559 Kg) = 2 Nos. MT 2.24 2.241 15.4.5 SOLATORS-33 KV SI.WITHOUT E/S (Unit weight - 294.893 Kg) = 9Nos. MT 2.65 2.6532 15.4.7 D.I. WITHOUT E/S (Unit weight - 670.555 Kg) = 5 Nos. MT 3.35 3.3525 15.4.9 CTS-132 KV (Unit Weight - 14.546 Kg) = 15 Nos. MT 3.22 3.2175 15.4.10 CTS-33 KV (Unit Weight - 124.546 Kg) = 15 Nos. MT 2.68 2.6784 15.4.11 CVTS-132 KV (Unit Weight - 236.628 Kg) = 6Nos. MT 2.68 2.6784 15.4.11 CVTS-132 KV (Unit Weight - 236.628 Kg) = 6Nos. MT 1.42 1.4196	15.2.1	G1 - 132 KV(NOMINAL UNIT WT- 062 MT) =17 Sets.	MT	9.86	9.86	
15.2.4 G1,2 - 132 KV (Each two beams of G1 type) (NOMINAL UNIT WT- 1.25 MT) = 2 MT 2.50 2.5 15.2.5 G6 - 33KV (NOMINAL UNIT WT- 0.53 MT) = 04 Sets.	15.2.2	G1X - 132 KV (NOMINAL UNIT WT- 0.62 MT) = 2 Sets.	MT	1.16	1.164	
15.2.5 G6 - 33KV (NOMINAL UNIT WT - 0.53 MT) = 04 Sets.	15.2.3	G2 - 132 KV(NOMINAL UNIT WT- 0.9 MT) = 06 Sets	MT	5.40	5.4	
15.2.6 G4 - 33KV (NOMINAL UNIT WT- 0.4MT) = 09 Sets. 15.2.7 G4X - 33KV (NOMINAL UNIT WT- 0.4 MT) = 25ets. MT 0.80 0.8 15.3 TOTAL WEIGHT OF COLUMN & BEAM MT 71.01 71.01 15.4 SWITCH YARD EQUIPMENT STRUCTURES (LATTICE TYPE) FOR 132/33 KV CLASS INCLUDING FOUNDATION BOLTS & NUTS. 15.4.1 ISOLATORS-132KV 15.4.2 S.I.WITH & WITHOUT E/S (Unit weight - 658.767 Kg) = 9 Nos MT 5.93 5.9283 15.4.3 D.I. WITHOUT E/S (Unit Weight - 979.10 Kg) = 2 Nos. MT 1.96 1.9582 15.4.4 D.I. WITH E/S (Unit Weight - 1120.559 Kg) = 2 Nos. MT 2.24 2.241 15.4.5 ISOLATORS-33 KV 15.4.6 S.I. WITHOUT E/S (Unit weight - 655.764 Kg) = 9 Nos. MT 1.31 1.3114 15.4.8 D.I. WITHOUT E/S (Unit weight - 655.764 Kg) = 2 Nos. MT 1.31 1.3114 15.4.9 C.TS-132 KV (Unit weight - 670.555 Kg) = 5 Nos. MT 3.22 3.2175 15.4.10 CTS-33 KV (Unit Weight - 148.80 Kg) = 18 Nos MT 2.68 2.6784 15.4.11 CVTS-132 KV (Unit Weight - 236.628 Kg) = 6Nos. MT 2.68 2.6784 15.4.11 CVTS-132 KV (Unit Weight - 236.628 Kg) = 6Nos. MT 1.42 1.4196	15.2.4	G1,2 - 132 KV(Each two beams of G1 type) (NOMINAL UNIT WT- 1.25 MT) =2	MT	2.50	2.5	
15.2.7 CAX - 33KV (NOMINAL UNIT WT- 0.4 MT) = 25ets.	15.2.5	G6 - 33KV (NOMINAL UNIT WT- 0.53 MT) = 04 Sets.	MT	2.12	2.12	
15.3 TOTAL WEIGHT OF COLUMN & BEAM	15.2.6	G4 - 33KV(NOMINAL UNIT WT- 0.4MT) = 09 Sets.	MT	3.60	3.6	
15.4.1 ISOLATORS-132KV 15.4.2 S.I.WITH & WITHOUT E/S (Unit weight - 658.767 Kg) = 9 Nos 15.4.3 D.I. WITHOUT E/S (Unit Weight - 979.10 Kg) = 2 Nos. 15.4.4 D.I. WITHOUT E/S (Unit weight - 1120.559 Kg) = 2 Nos. 15.4.5 ISOLATORS-33 KV 15.4.6 S.I. WITHOUT E/S (Unit weight - 655.764 Kg) = 9 Nos. 15.4.7 D.I. WITHOUT E/S (Unit weight - 655.764 Kg) = 2 Nos. 15.4.8 D.I. WITHOUT E/S (Unit weight - 670.555 Kg) = 5 Nos. MT 2.65 2.6532 15.4.9 CTS-132 KV (Unit Weight - 124.546 Kg) = 15 Nos. MT 3.22 3.2175 15.4.10 CTS-33 KV (Unit Weight - 148.80 Kg) = 18 Nos MT 1.42 1.4196	15.2.7	G4X - 33KV (NOMINAL UNIT WT- 0.4 MT) =2Sets.	MT	0.80	0.8	
FOUNDATION BOLTS & NUTS. 15.4.1 ISOLATORS-132KV 15.4.2 S.I.WITH & WITHOUT E/S (Unit weight - 658.767 Kg) = 9 Nos 15.4.3 D.I. WITHOUT E/S (Unit Weight - 979.10 Kg) = 2 Nos. 15.4.4 D.I. WITH E/S (Unit Weight - 1120.559 Kg) = 2 Nos. 15.4.5 ISOLATORS-33 KV 15.4.6 S.I. WITHOUT E/S (Unit weight - 294.893 Kg) =9Nos. 15.4.7 D.I. WITHOUT E/S (Unit weight - 655.764 Kg) = 2 Nos. MT 2.65 2.6532 15.4.7 D.I. WITHOUT E/S (Unit weight - 655.764 Kg) = 2 Nos. MT 1.31 1.3114 15.4.8 D.I. WITH E/S (Unit weight - 670.555 Kg) = 5 Nos. MT 3.35 3.3525 15.4.9 CTS-132 KV (Unit Weight - 214.546 Kg) = 15 Nos. MT 3.22 3.2175 15.4.10 CTS-33 KV (Unit Weight - 148.80 Kg) = 18 Nos MT 2.68 2.6784 15.4.11 CVTS-132 KV (Unit Weight - 236.628 Kg) = 6Nos.	15.3	TOTAL WEIGHT OF COLUMN & BEAM	MT	71.01	71.01	
15.4.1 ISOLATORS-132KV 15.4.2 S.I.WITH & WITHOUT E/S (Unit weight - 658.767 Kg) = 9 Nos MT 5.93 5.9283 15.4.3 D.I. WITHOUT E/S (Unit Weight - 979.10 Kg) = 2 Nos. MT 1.96 1.9582 15.4.4 D.I. WITH E/S (Unit Weight - 1120.559 Kg) = 2 Nos. MT 2.24 2.241 15.4.5 ISOLATORS-33 KV S.I. WITHOUT E/S (Unit weight - 294.893 Kg) = 9Nos. MT 2.65 2.6532 15.4.7 D.I. WITHOUT E/S (Unit weight - 670.555 Kg) = 2 Nos. MT 1.31 1.3114 15.4.8 D.I. WITH E/S (Unit weight - 670.555 Kg) = 5 Nos. MT 3.35 3.3525 15.4.9 CTS-132 KV (Unit Weight - 214.546 Kg) = 15 Nos. MT 3.22 3.2175 15.4.10 CTS-33 KV (Unit Weight - 148.80 Kg) = 18 Nos MT 2.68 2.6784 15.4.11 CVTS-132 KV (Unit Weight - 236.628 Kg) = 6Nos. MT 1.42 1.4196	15.4	SWITCH YARD EQUIPMENT STRUCTURES (LATTICE TYPE) FOR 132/33 KV CLASS INCLUDING				
15.4.2 S.I.WITH & WITHOUT E/S (Unit weight - 658.767 Kg) = 9 Nos MT 5.93 5.9283 15.4.3 D.I. WITHOUT E/S (Unit Weight - 979.10 Kg) = 2 Nos. MT 1.96 1.9582 15.4.4 D.I. WITH E/S (Unit Weight - 1120.559 Kg) = 2 Nos. MT 2.24 2.241 15.4.5 ISOLATORS-33 KV S.I. WITHOUT E/S (Unit weight - 294.893 Kg) = 9Nos. MT 2.65 2.6532 15.4.7 D.I. WITHOUT E/S (Unit weight - 655.764 Kg) = 2 Nos. MT 1.31 1.3114 15.4.8 D.I. WITH E/S (Unit weight - 670.555 Kg) = 5 Nos. MT 3.35 3.3525 15.4.9 CTS-132 KV (Unit Weight - 214.546 Kg) = 15 Nos. MT 3.22 3.2175 15.4.10 CTS-33 KV (Unit Weight - 148.80 Kg) = 18 Nos MT 2.68 2.6784 15.4.11 CVTS-132 KV (Unit Weight - 236.628 Kg) = 6Nos. MT 1.42 1.4196		FOUNDATION BOLTS & NUTS.				
15.4.3 D.I. WITHOUT E/S (Unit Weight - 979.10 Kg) = 2 Nos. MT 1.96 1.9582 15.4.4 D.I. WITH E/S (Unit Weight - 1120.559 Kg) = 2 Nos. MT 2.24 2.241 15.4.5 ISOLATORS-33 KV S.I. WITHOUT E/S (Unit weight - 294.893 Kg) = 9Nos. MT 2.65 2.6532 15.4.7 D.I. WITHOUT E/S (Unit weight - 655.764 Kg) = 2 Nos. MT 1.31 1.3114 15.4.8 D.I. WITH E/S (Unit weight - 670.555 Kg) = 5 Nos. MT 3.35 3.3525 15.4.9 CTS-132 KV (Unit Weight - 214.546 Kg) = 15 Nos. MT 3.22 3.2175 15.4.10 CTS-33 KV (Unit Weight - 148.80 Kg) = 18 Nos MT 2.68 2.6784 15.4.11 CVTS-132 KV (Unit Weight - 236.628 Kg) = 6Nos. MT 1.42 1.4196	15.4.1	ISOLATORS-132KV				
15.4.4 D.I. WITH E/S (Unit Weight - 1120.559 Kg) = 2 Nos. MT 2.24 2.241 15.4.5 ISOLATORS-33 KV S.I. WITHOUT E/S (Unit weight - 294.893 Kg) = 9Nos. MT 2.65 2.6532 15.4.7 D.I. WITHOUT E/S (Unit weight - 655.764 Kg) = 2 Nos. MT 1.31 1.3114 15.4.8 D.I. WITH E/S (Unit weight - 670.555 Kg) = 5 Nos. MT 3.35 3.3525 15.4.9 CTS-132 KV (Unit Weight - 214.546 Kg) = 15 Nos. MT 3.22 3.2175 15.4.10 CTS-33 KV (Unit Weight - 148.80 Kg) = 18 Nos MT 2.68 2.6784 15.4.11 CVTS-132 KV (Unit Weight - 236.628 Kg) = 6Nos. MT 1.42 1.4196	15.4.2	S.I.WITH & WITHOUT E/S (Unit weight - 658.767 Kg) =9 Nos	MT	5.93	5.9283	
15.4.5 ISOLATORS-33 KV 15.4.6 S.I. WITHOUT E/S (Unit weight - 294.893 Kg) =9Nos. MT 2.65 2.6532 15.4.7 D.I. WITHOUT E/S (Unit weight - 655.764 Kg) = 2 Nos. MT 1.31 1.3114 15.4.8 D.I. WITH E/S (Unit weight - 670.555 Kg) =5 Nos. MT 3.35 3.3525 15.4.9 CTS-132 KV (Unit Weight - 214.546 Kg) = 15 Nos. MT 3.22 3.2175 15.4.10 CTS-33 KV (Unit Weight - 148.80 Kg) = 18 Nos MT 2.68 2.6784 15.4.11 CVTS-132 KV (Unit Weight - 236.628 Kg) = 6Nos. MT 1.42 1.4196	15.4.3	D.I. WITHOUT E/S (Unit Weight - 979.10 Kg) = 2 Nos.	MT		1.9582	
15.4.6 S.I. WITHOUT E/S (Unit weight - 294.893 Kg) =9Nos. MT 2.65 2.6532 15.4.7 D.I. WITHOUT E/S (Unit weight - 655.764 Kg) = 2 Nos. MT 1.31 1.3114 15.4.8 D.I. WITH E/S (Unit weight - 670.555 Kg) =5 Nos. MT 3.35 3.3525 15.4.9 CTS-132 KV (Unit Weight - 214.546 Kg) = 15 Nos. MT 3.22 3.2175 15.4.10 CTS-33 KV (Unit Weight - 148.80 Kg) = 18 Nos MT 2.68 2.6784 15.4.11 CVTS-132 KV (Unit Weight - 236.628 Kg) = 6Nos. MT 1.42 1.4196	15.4.4	D.I. WITH E/S (Unit Weight - 1120.559 Kg) = 2 Nos.	MT	2.24	2.241	
15.4.7 D.I. WITHOUT E/S (Unit weight - 655.764 Kg) = 2 Nos. MT 1.31 1.3114 15.4.8 D.I. WITH E/S (Unit weight - 670.555 Kg) = 5 Nos. MT 3.35 3.3525 15.4.9 CTS-132 KV (Unit Weight - 214.546 Kg) = 15 Nos. MT 3.22 3.2175 15.4.10 CTS-33 KV (Unit Weight - 148.80 Kg) = 18 Nos MT 2.68 2.6784 15.4.11 CVTS-132 KV (Unit Weight - 236.628 Kg) = 6Nos. MT 1.42 1.4196	15.4.5	ISOLATORS-33 KV				
15.4.8 D.I. WITH E/S (Unit weight - 670.555 Kg) = 5 Nos. MT 3.35 3.3525 15.4.9 CTS-132 KV (Unit Weight - 214.546 Kg) = 15 Nos. MT 3.22 3.2175 15.4.10 CTS-33 KV (Unit Weight - 148.80 Kg) = 18 Nos MT 2.68 2.6784 15.4.11 CVTS-132 KV (Unit Weight - 236.628 Kg) = 6Nos. MT 1.42 1.4196	15.4.6	S.I. WITHOUT E/S (Unit weight - 294.893 Kg) =9Nos.		2.65		
15.4.9 CTS-132 KV (Unit Weight - 214.546 Kg) = 15 Nos. MT 3.22 3.2175 15.4.10 CTS-33 KV (Unit Weight - 148.80 Kg) = 18 Nos MT 2.68 2.6784 15.4.11 CVTS-132 KV (Unit Weight - 236.628 Kg) = 6Nos. MT 1.42 1.4196	15.4.7	D.I. WITHOUT E/S (Unit weight - 655.764 Kg) = 2 Nos.				
15.4.10 CTS-33 KV (Unit Weight - 148.80 Kg) = 18 Nos MT 2.68 2.6784 15.4.11 CVTS-132 KV (Unit Weight - 236.628 Kg) = 6Nos. MT 1.42 1.4196	15.4.8	D.I. WITH E/S (Unit weight - 670.555 Kg) =5 Nos.	MT		3.3525	
15.4.11 CVTS-132 KV (Unit Weight - 236.628 Kg) = 6Nos. MT 1.42 1.4196	15.4.9	CTS-132 KV (Unit Weight - 214.546 Kg) = 15 Nos.				
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	15.4.10	CTS-33 KV (Unit Weight - 148.80 Kg) = 18 Nos				
15.4.12 IVTS-132 KV (Unit Weight - 231.195 Kg) = 3 Nos MT 0.69 0.6933	15.4.11	CVTS-132 KV (Unit Weight - 236.628 Kg) = 6Nos.				
	15.4.12	IVTS-132 KV (Unit Weight - 231.195 Kg) = 3 Nos	MT	0.69	0.6933	

15 4 12	IVTS 22 KV (Unit Maight 124 226 Kg) = 2 Nos	NAT	0.37	0.2720		
15.4.13 15.4.14	IVTS-33 KV (Unit Weight - 124.336 Kg) = 3 Nos Surge Arrester-132 kV (Unit Weight - 179.893 Kg) = 12 Nos	MT MT	2.16	0.3729 2.1576	-	
15.4.14	BPI-132 KV (Unit Weight - 179.893 Kg) = 12 Nos	MT	4.96	4.9568	-	
15.4.16	BPI-33 KV (Unit Weight - 148.80 Kg) = 15 Nos	MT	2.23	2.232	-	
15.4.17	NCTS (Unit Weight - 138.24 Kg) = 4 Nos	MT	0.55	0.5528	-	
15.4.17	TOTAL WEIGHT OF EQUIPMENT STRUCTURE	MT	35.73	35.73		
15.4.18	Total weight of GI Nuts and bolts for the above Column, Beam & equipment structures	IVII	33.73	33.73		
15.5	Total weight of Grauts and boils for the above Column, beam & equipment structures	MT	7.00	7.00		
16	GENERAL EQUIPMENT & SUBSTATION ACCESSORIES					
16.1	POWER CABLES,1.1KV,XLPE/PVC ARMOURED, ALUMINIUM CONDUCTOR (As per Specification)					
16.1.1	XLPE 3.5 CX300 mm ²	MTRS	500	500		
16.1.2	XLPE 3.5 CX185 mm ²	MTRS	300	300		
16.1.3	XLPE 3.5 CX120 mm ²	MTRS	200	200		
16.1.4	PVC 3.5 CX70 mm ²	MTRS	600	600		
16.1.5	PVC 3.5 CX35 mm ²	MTRS	1750	1750		
16.1.6	PVC 4 CX 16 mm ²	MTRS	1000	1000		
16.1.7	PVC 4 CX 6 mm ²	MTRS	3750	3750		
16.1.8						
	PVC 2CX 6 mm ²	MTRS	2200	2200		
16.2 16.2.1	CONTROL CABLES, 1.1 KV, PVC, STRANDED COPPER(As per specification)	MTRS	5500	5500		
16.2.1	2 CX 2.5 mm2	MTRS		10500		
	4 CX 2.5 mm ²		10500			
16.2.3	5 CX 2.5 mm ²	MTRS	4500	4500		
16.2.4	7CX 2.5 mm ²	MTRS	5500	5500		
16.2.5	10 CX 2.5 mm ²	MTRS	10000	10000		
16.2.6	12 CX 2.5 mm ²	MTRS	9000	9000		
16.2.7	16 CX 2.5 mm ²	MTRS	5000	5000		
16.2.8	19 CX 2.5 mm ²	MTRS	2000	2000		
16.2.9	1CX 120 mm ² BAT TO BAT CHARGER & CHARGER TO DCDB	MTRS	600	600		
17	ACCESSORIES FOR PLCC SYSTEM With OPGW cable					
17.1	48 Fibre Optic Approach cable along with HDPE Pipes	Kms	1	1		
17.2	Optical line Terminal Equipment(OLTE) -STM4 type SDH equipment with integrated MUX & tributary					
	cards for speech & data ports for interfacing of Speech & data which should be compatible with existing	No.	1	1		
	OPTCL system					
17.3	Supply of FODP(Fibre Optic Distribution Panel)48 F: Indoor type,rack mounted with FCPC coupling and	No.	1	1		
17.4	pig tails(DWSm Fibre)					
17.4	Remote Terminal Unit (RTU) with MFT/MFM module designed for Power Utility SCADA operation. RTU					
	should report in IEC 870-5-104 protocols to both main & backup control centre. RTU should have ports	N-	1	4		
	for interfacing with relay control panels,MFT/MFMs and port for LDMS facility. Laptop should be part of	No.	1	1		
	the supply contract of RTU for monitoring, local data aquisition & configuration of RTU.					
17.5	48 V, 300 AH, maintenance free VRLA Battery set.	Set	1	1		
17.6	SMPS based battery charger of 75A suitable for 48V VRLA battery.	No	1	1		
17.7	2.5 sq. mm 2 core control cable(power supply,Transducer/MFT PT supply)	MTRS	500	500		
17.8	2.5 sq. mm multi strand 4 core control cable(Transducer/MFT CT , supply)	MTRS	500	500		
17.9	1.5 sq. mm 10 core control cable(Digital Input)	MTRS	200	200		
17.10	10 sq. mm 2 core multi strand control cable(Battery)	MTRS	100	100		
17.11	48 V DCDB	No	1	1		
17.12	Earth Flat, Cable Tray, Telephone cable, Foundation rail, Junction Box,.	LS	1	1		

	I				
18	SUPPLY OF STATION TRANSFORMER & OTHER MATERIALS FOR MEETING THE AUXILIARY SUPPLY OF THE SUB-STATION AS PER TECHNICAL SPECIFICATION				
18.1	STATION TRANSFORMER 33KV/433V,250 KVA (AS PER SPECIFICATION)	NOS	2	2	
18.2	HDG DP STRUCTURE : each set shall comprise of [2X 9.0 Mtrs (ISBM:200X100 mm(min) RS Joist(beam) with bracings of suitable channels(ISMC 75X40) & angles (L50X50X6) & different size Steel plate of 10 mm thick etc].	SETS	2	2	
18.3	33 KV AB SWITCH IN 33 KV SIDE(600AMP) including required GI pipe(horizontal & vertically down) & handle for operation of AB switch	SETS	2	2	
18.4	HG fuse set for 33 KV side of the Station transformer including base(each set comprises three single HG fuse)	SETS	2	2	
18.5	OUT DOOR KIOSK MADE OUT OF 3mm thick CRCA steel duly galvanised having gland plates OR BETTER quality WITH 3 NOS. OF CUT-OUTS(1000 AMPS) AT THE INCOMING SIDE , 1No. OF 3 PHASE SFU (500AMPS) AT THE OUTGOING SIDE AND SUITABLE BUS BAR ARRANGEMENT FOR TERMINATION of incoming cable from transformer & outgoing cable to Main ACDB.	SETS	2	2	
19	SUB STATION LIGHTING (AS PER SPECIFICATION AND APPROVED DRAWINGS)(Switch yard and other street area)				
19.1	SUB-STATION SWITCH YARD LIGHTING,IT INCLUDES SUPPLY OF FIXTURES & LAMPS (LED) of reputed make (Philips/CGL/Bajaj) with switch gear,GI Conduit etc.(Lighting fixtures are to be fixed rigidly on the Column at a suitable height so that the required lux can be achieved).(150 watt each)	SET	46	46	
19.2	STREET LIGHTING: IT INCLUDES SUPPLY OF GI TUBULAR POLE AS PER TECHNICAL SPECIFICATION, LED LIGHTING FIXTURES including LAMPS of reputed make (Philips/CGL/Bajaj/ other approved make of OPTCL).(100 watt each) for Street Light. (TO BE PROVIDED IN THE SWITCH YARD, ALONG THE ROADS (APPROACH INSIDE YARD AND OTHER ROADS), COLONY QUARTERS AND OTHER ROADS. ALL MATERIALS AS PER APPROVED DRAWING AND SPECIFICATION TO COMPLETE THE STREET LIGHTING SYSTEM. PROPER EARTHING AS PER STANDARD PRACTICE				
19.2.1	LED LIGHTING FIXTURES including LAMPS of reputed make (Philips/CGL/Bajaj/other approved make of OPTCL).(100 watt each) for Street Light.	SET	25	25	
19.2.2	GI Tubular Pole: (410-SP-24: IS 2713-Part-II-1980 or latest) Length of pole 8.5 mtrs(minimum weight 158 kgs). (ALL THE STREET LIGHT POLE SHALL BE OF GI TUBULAR POLE AND PROVISION OF A GI JUNCTION BOX WITH SUITABLE COVERS AT A HEIGHT OF 1 METRE FROM THE GROUND. THE JUNCTION BOX SHALL HAVE PROVISION OF FUSES, BUSES, CONNECTORS FOR CABLE IN AND OUT.	SET	25	25	
19.2.3	OUTDOOR KIOSK of 3 mm thick CRCA sheet duly hot dip galvanised FOR STREET LIGHT HAVING 2 NOS 200 AMP SWITCH FUSE UNITS AND 10 NOS. OUT LETS OF 32 AMP MCB. XLPE CABLES(3.5 CORE 120 SQMM) FROM MAIN ACDB FROM CONTROL ROOM TO THE OUT DOOR KIOSK. XLPE CABLE OF 4C X 16 SQMM FROM OUTDOOR KIOSK TO THE STREET LIGHT POLES AND 4CX6 SQMM FROM POLE TO POLE AND 2CX6 SQMM FROM POLE TO LIGHTING FIXTURES.	NO	1	1	
19.2.4	OUTDOOR KIOSK of 3 mm thick CRCA sheet duly hot dip galvanised FOR COLONY SUPPLY PURPOSE HAVING 2 NOS. 200 A SWITCH FUSE UNITS, 6 NOS.OUT LETS OF 32 AMP MCB FOR COLONY QUARTES. XLPE CABLES(3.5 CORE 120 SQM) FROM MAIN ACDB FROM CONTROL ROOM TO THE OUT DOOR KIOSK. 4CX16 SQMM FROM KIOSK TO EACH QUARTER.	NO	1	1	
20	2 TR capacity 5-star rated Split Air conditioning units with remote control facility: including supply of air conditioners, 5KVA voltage stabiliser(V-Guard), control boxes etc for completing the AC scheme. (As per specification) for control room, carrier room & conference room.	SET	20	20	

TRANSFORMER AND OTHER AREA AS PER TECH SPECIFER TS-INST TO BIDDER BEFORE DESIGN-S. NO 15 AANNEXINE -1 21.1. FOAM TYPE -9 LTRS 21.2. DOWN CHEMICAL POWDER TYPE -4 KSS NOS 4 4 4 21.2. DOWN CHEMICAL POWDER TYPE -4 KSS NOS 4 4 4 21.2. DOWN CHEMICAL POWDER TYPE -4 KSS NOS 4 4 4 21.2. DOWN CHEMICAL POWDER TYPE -4 KSS NOS 10 10 10 21.5. CO., -8 DKCS NOS 10 10 10 21.5. CO., -8 DKCS NOS 10 10 10 21.6. CO., TITOLIUS MOUNTED)- 22 5 KGS NOS 4 4 4 10 10 10 10 10 10 10 10 10 10 10 10 10 1	21	FIRE FIGHTING SYSTEM(PORTABLE AND WHEEL MOUNTED SETS FOR CONTROL ROOM, EQUIPMENT LIKE				
No 16-ANNEXURE - 1)	21	•				
21.1 FORM TYPE-9 LITS		· ·				
21.4 Opt. 4.5 KGS	21.1	,	NOS	4	4	
21.5 CO4.5 KGS			NOS	4	4	
21.5 CO9.0 KGS	21.3	DRY POWDER TYPE -6 KGS	NOS	4	4	
21.6 CO_STROLLY MOUNTED: 22.5 KGS	21.4	CO ₂ - 4.5 KGS	NOS	10	10	
21.5 CO_(TROLLY MOUNTED)- 22.5 KGS	21.5	CO ₂ - 9.0 KGS	NOS	10	10	
21.7 Water type 9 LTRS	21.6	-	NOS		1	
21.9 From Mype - 50 LTR 1.2 2.2 2.3 2.3 2.3 2.4 2.3 2.4 2.4 2.5 2.5 5.5 5.5 2.5						
21.9 FIRE BUCKET (6 NOS IN EACH STAND) WITH STAND W						+
SUBSTATION AUTOMATION SYSTEM: Supply of the following 122 and 33 kV level consisting of Panels, accord Units, DR Pelays, Numerical O/C & E/F Relays, DC Supervision relays, Trip Circuit Supervision, Trip Relay Test Block, Differential with REF, Overflux, High impedence REF, Numerical O/C & E/F relay, Test Block, Differential with REF, Overflux, High impedence REF, Numerical O/C & E/F relay, Transformer trouble relay etc. Station level consisting of industrial Computer with accessories, PC with accessories, laser printer, UPS, GPS System & Numerical bay control unit etc. 23.1.1 Yard AC Klosk: 4500 mm (L)x4000mm (W)x 3500mm (H) with Air Conditioning as per the Specification; Nos. 2 2 2 23.1.2 Numerical Bay control unit: 24 Digital input & 20Nos digital out put with CT / PT Input cards. IEC 61850 protocol protocol with the following functions: IEC 61850 protocol. Nos. 2 2 2 23.1.3 Numerical distance protection with the following functions: Over flux, Over volt etc. Ross. 2 2 2 23.1.4 Ec 61850 protocol cistSop protocol Nos. 2 2 2 2 23.1.5 Numerical over current, earth fault relays: IEC 61850 protocol Nos. 5 5 5 5 12 23.1.6 High impedance REF Relay Nos. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1						
SUBSTATION AUTOMATION SYSTEM: Supply of the following 132 and 33 kV level consisting of Panels, Bay control Units, DP Relays, Numerical O/C & E/F Relays, DC Supervision relays, Trip Circuit Supervision, Trip Relay, Test Block, Differential with REF, Overflux, High impednce REF, Numerical O/C & E/F relay, Transformer trouble relay etc. Station level consisting of Industrial Computer with accessories, PC with accessories, laser printer, UPS, GPS System & Numerical bay control unit etc. 23.1.1 Yard AC Kiosk: 4500 mm (L)x4000mm (W)x 3500mm (H) with Air Conditioning as per the Specification; 23.1.2 Numerical Bay control unit: 24 Digital input & 20Nos digital out put with CT / PT Input cards. IEC 61850 Protocol 23.1.3 Numerical distance protection with the following functions: IEC 61850 protocol. 23.1.4 Numerical Transformer Differential/REF protection with the following functions: Over flux, Over volt etc. 23.1.5 Numerical core current, earth fault relays: IEC 61850 protocol 23.1.6 High Impedance REF Relay Nos. 2 2 2 23.1.7 Numerical Centralised Bus bar protection. Nos. 1 1 1 23.1.8 AUXILIARY RELAY FOR DC SUPERVISION Nos. 2 2 2 23.1.9 Numerical Centralised Bus bar protection. Nos. 1 1 1 23.1.1 Numerical Centralised Bus bar protection. Nos. 4 4 4 23.1.1 HIGH SPEED TRANSFORMER TROUBLES 4 Nos. 5 5 10 10 10 11 23.1.1 HIGH SPEED TRANSFORMER TROUBLES 4 Nos. 1 4 14 23.1.1 HIGH SPEED TRANSFORMER TROUBLES 4 Nos. 5 5 10 10 10 10 10 10 11 23.1.1.1 HIGH SPEED TRANSFORMER TROUBLES 4 Nos. 6 6 6 23.1.1.2 Multimode glass fibre Optical cord Double Jacket armoured, rodent resilient. Mitr. 1,000 1000 23.1.1.1 Multimode glass fibre Optical cord Double Jacket armoured, rodent resilient. Mitr. 1,000 1000 23.1.1.1 Multimode glass fibre Optical cord Double Jacket armoured, rodent resilient. Simplex Culpider with Bus bar Switches, 600(L)X 400(W)X 500(H) Nos. 2 2 2						
Bay control Units, DP Relays, Numerical Of & Eff Relays, DC Supervision relays, Trip Circuit Supervision, Trip Relay, Test Block, Differential with REF, Overflux, High impednee REF, Numerical Of & Eff Relay, Transformer trouble relay etc. Station level consisting of industrial Computer with accessories, PC with accessories, laser printer, UPS, GPS System & Numerical bay control unit etc. 23.1.1 32KV Level 23.1.1 Yard AC Kiosk :4500 mm (L)x4000mm (M/x 3500mm (H) with Air Conditioning as per the Specification; Nos. 2 2 2 Numerical Bay control unit :24 Digital input & 20Nos digital out put with CT / PT Input cards. IEC 61850 protocol 23.1.2 Numerical distance protection with the following functions: IEC 61850 protocol. Nos. 2 2 2 23.1.3 Numerical distance protection with the following functions: Over flux, Over volt etc. IEC 61850 protocol 23.1.4 Numerical over current, earth fault relays: IEC 61850 protocol 23.1.5 Numerical over current, earth fault relays: IEC 61850 protocol 23.1.6 High Impedance REF Relay Nos. 2 2 2 23.1.7 Numerical Centralised Bus bar protection. Nos. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		TOWER TRANSPORTER 132/33 RV, 20 MVA(A3 FER SI EGIT ICATION)	NOS	2	2	
Supervision, Trip Relay, Test Block, Differential with REF, Overflux, High impedance REF, Numerical O/C & E/F relay,Transformer trouble relay etc. Station level consisting of Industrial Computer with accessories, PC with accessories, aser printer, UPS, GPS System & Numerical bay control unit etc. 23.1.1 132RV Level 23.1.1 Yard AC Klosk: 4500 mm (L)x4000mm (W)x 3500mm (H) with Air Conditioning as per the Specification;	1	SUBSTATION AUTOMATION SYSTEM: Supply of the following 132 and 33 kV level consisting of Panels,				
### REF relay, Transformer trouble relay etc. Station level consisting of Industrial Computer with accessories, PC with accessories, Jaser printer, UPS, GPS System & Numerical bay control unit etc. ### Recessories, PC with accessories, Jaser printer, UPS, GPS System & Numerical bay control unit etc. ### Recessories, PC with accessories, Jaser printer, UPS, GPS System & Numerical bay control unit etc. ### Recessories, PC with accessories, Jaser printer, UPS, GPS System & Numerical bay control unit etc. ### Recessories, PC with accessories, Jaser printer, UPS, GPS System & Numerical bay control unit etc. ### Recessories, PC with accessories, Jaser printer, UPS, GPS System & Numerical bay control unit etc. ### Recessories, PC with accessories, Jaser printer, UPS, GPS System & Numerical bay control unit etc. ### Recessories, PC with accessories, Jaser printer, UPS, GPS System & Numerical bay control unit etc. ### Recessories, PC with accessories, Jaser printer, UPS, GPS System & Numerical bay control unit etc. ### Recessories, PC with accessories, Jaser printer, UPS, GPS System & Numerical bay control unit etc. ### Recessories, PC with accessories, Jaser printer, UPS, GPS System & Numerical bay control unit etc. ### Recessories, PC with accessories, Jaser printer, UPS, GPS System & Numerical bay control unit etc. ### Recessories, PC with Accessories, Jaser printer, UPS, GPS System & Numerical bay control unit etc. ### Recessories, PC with Accessories, Jaser printer, UPS, GPS System & Numerical bay control unit etc. ### Recessories, PC with Accessories, Jaser printer, UPS, GPS System & Numerical bay control unit etc. ### Recessories, Jaser printer, UPS, GPS System & Numerical bay control unit etc. ### Recessories, PC with Accessories, Jaser printer, UPS, GPS System & Numerical bay control unit etc. ### Recessories, Jaser printer, UPS, GPS System & Numerical bay control unit etc. ### Recessories, Jaser printer, UPS, GPS System & Numerical bay control unit etc. ### Recessories, Jaser printer, UPS, G		Bay control Units, DP Relays, Numerical O/C & E/F Relays, DC Supervision relays, Trip Circuit				
23.1 132KV Level 23.1.1 Yard AC Kiosk: 4500 mm (L)x4000mm (W)x 3500mm (H) with Air Conditioning as per the Specification; Nos. 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2						
23.1 132KV Level 23.1.1 Yard AC Kiosk :4500 mm (L)x4000mm (W)x 3500mm (H) with Air Conditioning as per the Specification; Protocol 23.1.2 Numerical Bay control unit :24 Digital input & 20Nos digital out put with CT / PT Input cards. IEC 61850 protocol 23.1.3 Numerical distance protection with the following functions: IEC 61850 protocol. 23.1.4 IEC 61850 protocol 23.1.5 Numerical Transformer Differential/REF protection with the following functions: Over flux ,Over volt etc. IEC 61850 protocol 23.1.6 High Impedance REF Relay 13.1.6 High Impedance REF Relay 13.1.7 Numerical Centralised Bus bar protection. 23.1.8 AUXILIARY RELAY FOR DC SUPERVISION 13.1.9 AUXILIARY RELAY FOR DC SUPERVISION 13.1.10 Nos. 23.1.10 High SPEC TRIP RELAY(HAND RESET) 23.1.11 HIGH SPEC TRIP RELAY(HAND RESET) 23.1.12 TRIP CIRCUIT SUPERVISION RELAY 4 13.1.13 High SPEC TRIP RELAY(HAND RESET) 23.1.14 Ethernet switch IEC 61850-3,IEEE1588V2 23.1.15 Multimode glass fibre Optical cord Double jacket armoured , rodent resilient. Simplex Cubicle type for process bus equipment, , Swing frame front access (VSG), Dimension 2300mm (H) Nos. 24.1.17 DCDB panel; With Bus bar Switches,600(L)X 400(W)X 500(H) 25.1.17 DCDB panel; With Bus bar Switches,600(L)X 400(W)X 500(H) Nos. 20. 2 2 2 2 2 2 2 3.1.2 The CIRCUIT SUPERVISION RELAY 60 TRANSFORMENT ROUBLES 6 3.1.3.1 (H) X 1000mm (D) X 1000mm (W), earth bar 25x6 Sq. mm. Copper with the following components 23.1.16 (H) X 1000mm (D) X 1000mm (W), earth bar 25x6 Sq. mm. Copper with the following components 23.1.17 DCDB panel; With Bus bar Switches,600(L)X 400(W)X 500(H) 23.1.17 DCDB panel; With Bus bar Switches,600(L)X 400(W)X 500(H)	22	, ,				
23.1.1 Yard AC Kiosk :4500 mm (L)x4000mm (W)x 3500mm (H) with Air Conditioning as per the Specification;	23	accessories, PC with accessories, laser printer, UPS, GPS System & Numerical bay control unit etc.				
23.1.1 Yard AC Kiosk :4500 mm (L)x4000mm (W)x 3500mm (H) with Air Conditioning as per the Specification; Nos. 2 2 2 2 2 2 2 2 2						
23.1.1 Yard AC Kiosk :4500 mm (L)x4000mm (W)x 3500mm (H) with Air Conditioning as per the Specification; Nos. 2 2 2 2 2 2 2 2 2						
23.1.1 Yard AC Kiosk :4500 mm (L)x4000mm (W)x 3500mm (H) with Air Conditioning as per the Specification; Nos. 2 2 2 2 2 2 2 2 2						
23.1.2 Numerical Bay control unit :24 Digital input & 20Nos digital out put with CT / PT Input cards. IEC 61850 protocol 23.1.3 Numerical distance protection with the following functions: IEC 61850 protocol. 23.1.4 Numerical Transformer Differential/REF protection with the following functions: Over flux ,Over volt etc. IEC 61850 protocol 23.1.5 Numerical over current , earth fault relays: IEC 61850 protocol Nos. 2 2 2 23.1.5 Numerical over current , earth fault relays: IEC 61850 protocol Nos. 5 5 5 Nos. 2 2 2 23.1.7 Numerical Centralised Bus bar protection. Nos. 1 1 1 1 23.1.8 AUXILIARY RELAY FOR DC SUPERVISION Nos. 10 10 23.1.9 AUXILIARY RELAY FOR TRANSFORMER TROUBLES 4 Nos. 14 4 23.1.10 MPG - TEST BLOCK 2 Nos. 14 23.1.11 High Speed TRIP RELAY(HAND RESET) Nos. 5 5 5 123.1.12 TRIP CIRCUIT SUPERVISION RELAY 4 Nos. 10 10 23.1.13 Line interface unit; sets. 3 3 3 23.1.14 Ethernet switch IEC 61850-3,IEEE1588v2 23.1.15 (H) X 1000mm (D) X 1000mm (W), earth bar 25x6 Sq. mm. Copper with the following components Set 5 5 23.1.17 DCDB panel; With Bus bar Switches,600(L)X 400(W)X 500(H) Nos. 2 2 2	23.1					
23.1.2 Numerical Bay control unit :24 Digital input & 20Nos digital out put with CT / PT Input cards. IEC 61850 protocol 23.1.3 Numerical distance protection with the following functions: IEC 61850 protocol. 23.1.4 INUMERICAL Transformer Differential/REF protection with the following functions: Over flux ,Over volt etc. IEC 61850 protocol 23.1.5 Numerical over current , earth fault relays: IEC 61850 protocol Nos. 2 2 2 23.1.6 High Impedance REF Relay Nos. 2 2 2 23.1.7 Numerical Centralised Bus bar protection. Nos. 1 1 1 1 23.1.8 AUXILIARY RELAY FOR DC SUPERVISION Nos. 10 10 10 23.1.1 HIGH SPEED TRIP RELAY FOR TRANSFORMER TROUBLES 4 Nos. 14 4 23.1.10 MPG - TEST BLOCK 2 23.1.11 HIGH SPEED TRIP RELAY (HAND RESET) Nos. 5 5 5 123.1.12 TRIP CIRCUIT SUPERVISION RELAY 4 Nos. 10 10 10 23.1.13 Line interface unit; sets. 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	23.1.1	Yard AC Kiosk :4500 mm (L)x4000mm (W)x 3500mm (H) with Air Conditioning as per the Specification;	Nos	2	2	
23.1.2 protocol Nos. S				-		
23.1.3 Numerical distance protection with the following functions: IEC 61850 protocol. 23.1.4 INTERPOLATION CONTRIBUTION	23.1.2		Nos.	5	5	
23.1.4 Numerical Transformer Differential/REF protection with the following functions: Over flux ,Over volt etc. EC 61850 protocol EC 61850 protocol Nos. 2 2 2	22.4.2					
23.1.4 IEC 61850 protocol Nos. 2 2 2	23.1.3		Nos.	2	2	
23.1.5 Numerical over current, earth fault relays: IEC 61850 protocol Nos. 5 5 23.1.6 High Impedance REF Relay Nos. 2 2 23.1.7 Numerical Centralised Bus bar protection. Nos. 1 1 23.1.8 AUXILIARY RELAY FOR DC SUPERVISION Nos. 10 10 23.1.9 AUXILIARY RELAY FOR TRANSFORMER TROUBLES 4 Nos. 4 4 23.1.10 MPG - TEST BLOCK 2 Nos. 14 14 23.1.11 HIGH SPEED TRIP RELAY(HAND RESET) Nos. 5 5 5 23.1.12 TRIP CIRCUIT SUPERVISION RELAY 4 Nos. 10 10 10 23.1.13 Line interface unit; sets. 3 3 3 23.1.14 Ethernet switch IEC 61850-3,IEEE1588v2 sets. 6 6 6 23.1.15 Multimode glass fibre Optical cord Double jacket armoured ,rodent resilient. Mtr. 1,000 1000 Simplex Cubicle type for process bus equipment , Swing frame front access (VSG), Dimension 2300mm (H) X 1000mm (D) X 1000mm (W), earth bar 25x6 Sq. mm. Copper with the following components Set 5 5 23.1.17<	23.1.4	· · ·	Nos.	2	2	
Nos. 2 2 2 2 2 2 2 2 2	22.4.5		Nee	-	-	
23.1.7 Numerical Centralised Bus bar protection. 23.1.8 AUXILIARY RELAY FOR DC SUPERVISION 23.1.9 AUXILIARY RELAY FOR TRANSFORMER TROUBLES 4 23.1.10 MPG - TEST BLOCK 2 Nos. 14 23.1.11 HIGH SPEED TRIP RELAY(HAND RESET) Nos. 5 23.1.12 TRIP CIRCUIT SUPERVISION RELAY 4 Nos. 10 23.1.13 Line interface unit; 23.1.14 Ethernet switch IEC 61850-3,IEEE1588v2 23.1.15 Multimode glass fibre Optical cord Double jacket armoured ,rodent resilient. Simplex Cubicle type for process bus equipment , Swing frame front access (VSG), Dimension 2300mm (H) X 1000mm (D) X 1000mm (W), earth bar 25x6 Sq. mm. Copper with the following components 23.1.17 DCDB panel; With Bus bar Switches,600(L)X 400(W)X 500(H) No. 2 2 2	23.1.5		NOS.	5	5	
23.1.8 AUXILIARY RELAY FOR DC SUPERVISION Nos. 10 10 23.1.9 AUXILIARY RELAY FOR TRANSFORMER TROUBLES 4 Nos. 4 4 4 23.1.10 MPG - TEST BLOCK 2 Nos. 14 14 14 23.1.11 HIGH SPEED TRIP RELAY(HAND RESET) Nos. 5 5 5 23.1.12 TRIP CIRCUIT SUPERVISION RELAY 4 Nos. 10 10 10 23.1.13 Line interface unit; sets. 3 3 3 23.1.14 Ethernet switch IEC 61850-3,IEEE1588v2 sets. 6 6 6 23.1.15 Multimode glass fibre Optical cord Double jacket armoured ,rodent resilient. Mtr. 1,000 1000 23.1.16 (H) X 1000mm (D) X 1000mm (W), earth bar 25x6 Sq. mm. Copper with the following components Set 5 5 23.1.17 DCDB panel; With Bus bar Switches,600(L)X 400(W)X 500(H) No. 2 2 2	23.1.6	High impedance KEF Keray	Nos.	2	2	
23.1.8 AUXILIARY RELAY FOR DC SUPERVISION Nos. 10 10 23.1.9 AUXILIARY RELAY FOR TRANSFORMER TROUBLES 4 Nos. 4 4 4 23.1.10 MPG - TEST BLOCK 2 Nos. 14 14 14 23.1.11 HIGH SPEED TRIP RELAY(HAND RESET) Nos. 5 5 5 23.1.12 TRIP CIRCUIT SUPERVISION RELAY 4 Nos. 10 10 10 23.1.13 Line interface unit; sets. 3 3 3 23.1.14 Ethernet switch IEC 61850-3,IEEE1588v2 sets. 6 6 6 23.1.15 Multimode glass fibre Optical cord Double jacket armoured ,rodent resilient. Mtr. 1,000 1000 23.1.16 (H) X 1000mm (D) X 1000mm (W), earth bar 25x6 Sq. mm. Copper with the following components Set 5 5 23.1.17 DCDB panel; With Bus bar Switches,600(L)X 400(W)X 500(H) No. 2 2 2	22.4.7	Number of Control Cont	Naa	1	1	
23.1.9 AUXILIARY RELAY FOR TRANSFORMER TROUBLES 4 Nos. 4 4 23.1.10 MPG - TEST BLOCK 2 Nos. 14 14 23.1.11 HIGH SPEED TRIP RELAY (HAND RESET) Nos. 5 5 23.1.12 TRIP CIRCUIT SUPERVISION RELAY 4 Nos. 10 10 23.1.13 Line interface unit; sets. 3 3 23.1.14 Ethernet switch IEC 61850-3, IEEE1588v2 sets. 6 6 23.1.15 Multimode glass fibre Optical cord Double jacket armoured ,rodent resilient. Mtr. 1,000 1000 Simplex Cubicle type for process bus equipment , Swing frame front access (VSG), Dimension 2300mm (H) X 1000mm (D) X 1000mm (W), earth bar 25x6 Sq. mm. Copper with the following components Set 5 5 23.1.17 DCDB panel; With Bus bar Switches,600(L)X 400(W)X 500(H) No. 2 2						+
23.1.10 MPG - TEST BLOCK 2 Nos. 14 14 14 23.1.11 HIGH SPEED TRIP RELAY(HAND RESET) Nos. 5 5 5 23.1.12 TRIP CIRCUIT SUPERVISION RELAY 4 Nos. 10 10 10 23.1.13 Line interface unit; sets. 3 3 3 23.1.14 Ethernet switch IEC 61850-3,IEEE1588v2 sets. 6 6 6 23.1.15 Multimode glass fibre Optical cord Double jacket armoured ,rodent resilient. Mtr. 1,000 1000 Simplex Cubicle type for process bus equipment , Swing frame front access (VSG), Dimension 2300mm (H) X 1000mm (D) X 1000mm (W), earth bar 25x6 Sq. mm. Copper with the following components Set 5 5 23.1.17 DCDB panel; With Bus bar Switches,600(L)X 400(W)X 500(H) No. 2 2 2						+
23.1.11 HIGH SPEED TRIP RELAY(HAND RESET) Nos. 5 5 23.1.12 TRIP CIRCUIT SUPERVISION RELAY 4 Nos. 10 10 10 23.1.13 Line interface unit; sets. 3 3 3 23.1.14 Ethernet switch IEC 61850-3,IEEE1588v2 sets. 6 6 6 23.1.15 Multimode glass fibre Optical cord Double jacket armoured ,rodent resilient. Mtr. 1,000 1000 Simplex Cubicle type for process bus equipment , Swing frame front access (VSG), Dimension 2300mm (H) X 1000mm (D) X 1000mm (W), earth bar 25x6 Sq. mm. Copper with the following components Set 5 5 23.1.17 DCDB panel; With Bus bar Switches,600(L)X 400(W)X 500(H) No. 2 2 2						
23.1.12 TRIP CIRCUIT SUPERVISION RELAY 4 Nos. 10 10 23.1.13 Line interface unit; sets. 3 3 23.1.14 Ethernet switch IEC 61850-3,IEEE1588v2 sets. 6 6 23.1.15 Multimode glass fibre Optical cord Double jacket armoured ,rodent resilient. Mtr. 1,000 1000 Simplex Cubicle type for process bus equipment , Swing frame front access (VSG), Dimension 2300mm (H) X 1000mm (D) X 1000mm (W), earth bar 25x6 Sq. mm. Copper with the following components Set 5 5 23.1.17 DCDB panel; With Bus bar Switches,600(L)X 400(W)X 500(H) No. 2 2						
23.1.13 Line interface unit; 23.1.14 Ethernet switch IEC 61850-3,IEEE1588v2 23.1.15 Multimode glass fibre Optical cord Double jacket armoured ,rodent resilient. 23.1.16 Simplex Cubicle type for process bus equipment , Swing frame front access (VSG), Dimension 2300mm (H) X 1000mm (D) X 1000mm (W), earth bar 25x6 Sq. mm. Copper with the following components 23.1.17 DCDB panel; With Bus bar Switches,600(L)X 400(W)X 500(H) No. 2 2						
23.1.14 Ethernet switch IEC 61850-3,IEEE1588v2 sets. 6 6 6 23.1.15 Multimode glass fibre Optical cord Double jacket armoured ,rodent resilient. Mtr. 1,000 1000 23.1.16 Simplex Cubicle type for process bus equipment , Swing frame front access (VSG), Dimension 2300mm (H) X 1000mm (D) X 1000mm (W), earth bar 25x6 Sq. mm. Copper with the following components Set 5 5 23.1.17 DCDB panel; With Bus bar Switches,600(L)X 400(W)X 500(H) No. 2 2 2						
23.1.15 Multimode glass fibre Optical cord Double jacket armoured ,rodent resilient. Mtr. 1,000 1000 Simplex Cubicle type for process bus equipment , Swing frame front access (VSG), Dimension 2300mm (H) X 1000mm (D) X 1000mm (W), earth bar 25x6 Sq. mm. Copper with the following components Set 5 5 5 23.1.17 DCDB panel; With Bus bar Switches,600(L)X 400(W)X 500(H) No. 2 2 2				_	_	
Simplex Cubicle type for process bus equipment , Swing frame front access (VSG), Dimension 2300mm (H) X 1000mm (D) X 1000mm (W), earth bar 25x6 Sq. mm. Copper with the following components Set 5 5 23.1.17 DCDB panel; With Bus bar Switches,600(L)X 400(W)X 500(H) No. 2 2						
23.1.16 (H) X 1000mm (D) X 1000mm (W), earth bar 25x6 Sq. mm. Copper with the following components Set 5 5 23.1.17 DCDB panel; With Bus bar Switches,600(L)X 400(W)X 500(H) No. 2 2	23.1.13		IVICI.	1,000	1000	
23.1.17 DCDB panel; With Bus bar Switches,600(L)X 400(W)X 500(H) No. 2 2	23.1.16	, , , , , , , , , , , , , , , , , , , ,	Set	5	5	
		(17) carati del 2010 del 1111 carati del 2010 del 1111 carati del 1111 del	•			
	23.1.17	DCDB panel; With Bus bar Switches,600(L)X 400(W)X 500(H)	No.	2	2	
	23.2					
Yard AC Kiosk :4500 mm (L)x3500mm (W)x 3300mm (H) with Air conditioning as per the Specification;		Yard AC Kiosk :4500 mm (L)x3500mm (W)x 3300mm (H) with Air conditioning as per the Specification:				
23.2.1 Nos. 1	23.2.1	(, , , ,	Nos.	1	1	

23.2.2	Integrated Numerical Bay control unit with protection function :16Digital input & 10Nos digital out put with CT / PT Input cards	Nos.	8	8	
	with CT / TT injute cards				

23.2.3	DC Supervision Relay	Nos.	16	16	
23.2.4	TRIP Relay	Nos.	8	8	
23.2.5	Test Block	Nos.	16	16	
23.2.6	Line interface unit;	sets.	2	2	
23.2.7	Ethernet switch IEC 61850-3,IEEE1588v2	sets.	3	3	
23.2.8	Multimode glass fibre Optical cord Double jacket armoured ,rodent resilient	Mtr.	500	500	
	Simplex Cubicle type for process bus equipment , Swing frame front access (VSG), Dimension 2300mm	-			
23.2.9	(H) X 900mm (D) X 900mm (W), earth bar 25x6 Sq. mm. Copper with the following components	Set	4	4	
23.2.10	DCDB panel; With Bus bar Switches,600(L)X 400(W)X 500(H)	No.	1	1	
23.3	Station Level				
23.3.1	Windows based Industrial computer with standard accessories – Keyboard, mouse, monitor with operating software window 10 or 8, IED configuration, substation automation, . Main & Back up.	set	2	2	
	With automation softwares. Main				
23.3.2	Windows based PC with standard accessories – Keyboard, mouse, monitor with operating software window 10 or 8, IED configuration, substation automation, Disturbance recorder software. DR & work Station PC.Client	set	1	1	
23.3.3	Color Laser jet Printer	No.	1	1	
23.3.4	UPS , 3KVA	No.	2	2	
23.3.5	GPS System with PTP	set	1	1	
23.3.6	Gateway for SCADA	set	1	1	
23.3.7	Large vedio screen of 60 inches for display including all type of accessories	set	1	1	
23.4	AC & DC SYSTEM				
23.4.1	AC SYSTEM				
23.4.1.1	MAIN AC DB, (HAVING 800 A, 50KA, DRAWOUT TYPE ACB WITH 3 O/C, E/F, U/V RELAYING FACILITY INDOOR TYPE AS PER SPECIFICATION. (MAIN DB-1, MAIN DB-2 WITH B/C)	SET	1	1	
23.4.1.2	ACDB (HAVING 400A MCCB) AS PER SPECIFICATION (AC DB-1, AC DB-2 WITH B/C)	SET	1	1	
23.4.1.3	MAIN LIGHTING DISTRIBUTION BOARD (HAVING 250A MCCB AS INCOMER)AS PER SPECIFICATION (WITH DB-1, DB-2 & B/C)	SET	1	1	
23.4.1.4	INDOOR LIGHTING DISTRIBUTION BOARD AS PER SPECIFICATION. (WITH DB-1,DB-2 & B/C)	SET	1	1	
23.4.1.5	EMERGENCY LIGHTING DISTRIBUTION BOARD	SET	1	1	
23.4.1.6	INDOOR RECEPTACLE BOARD	SET	1	1	
23.4.2	DC SYSTEM				
23.4.2.1	220 V DC BOARD (HAVING 100A DC MCCB AS INCOMER, E/F (EARTH LEAKAGE), UNDER & OVER VOLTAGE AS PER SPECIFICATION (DC DB-1)	SET	1	1	
23.4.2.2	220 V DC EMERGENCY DISTRIBUTION BOARD	SET	1	1	
23.4.2.3	BATTERY (350 AH PLANTE TYPE) FOR 220 V DC	SET	1	1	
23.4.2.4	BATTERY CHARGER FOR 220 V, 350 AH BATTERY (FLOAT AND FLOAT CUM BOOST)	SET	1	1	
24	DISTLED WATER PLANT OF 10 LTR/HR FOR BATTERY BANKS	SET	1	1	
25	WALKIE TALKIE SET	SET/ PAIR	2	2	
26	PORTABLE ALUMINIUM LADDER EXTENDABLE TYPE OF ADEQUATE HEIGHT TO BE USED FOR MAINTENANCE OF EQUIPMENT INSIDE SWITCH YARD.	NOS	2	2	
27	PEDESTAL MOUNTED WHEEL FITTED DERRICK FOR LIFTING/ LOWERING OF MATERIALS UP TO 1.5 TON CAPACITY.	SET	1	1	
28	POWER WINCH NEAR STORE SHED FOR HANDLING MATERIALS UPTO 5 TON CAPACITY.	SET	1	1	
29	WATER COOLER WITH WATER PURIFIER SYSTEM	NOS	1	1	

30	MAINTENANCE TESTING EQUIPMENT (AS PER ANNEXURE - I ,INDICATED IN TS-TIMK-SCHEDULE OF REQUIREMENTS OF MAINTENANCE EQUIPMENT)	SET	1	1	
31	OTHER TOOLS AND PLANTS (T&P's) REQUIREMENT (AS PER ANNEXURE - II ,INDICATED IN TS-TIMK-SCHEDULE OF REQUI-REMENTS OTHER T&P's)	SET	1	1	
	OFFICE FURNITURE (AS PER ANNEXURE - III ,INDICATED IN TS-TIMK-SCHEDULE OF REQUIREMENTS OFFICE FURNITURE)>PLACING IN CONTROL ROOM,CONFERENCE ROOM, OFFICE ROOMS, LIBRARY, TESTING LAB, etc.	SET	1	1	
	BEST QUALITY &APPROVED MAKE INSULATING MAT (Confirming to IS:15652:2006) TO BE KEPT INFRONT OF ALL PANELS,BOARDS ETC.(2000X1000X3)mm Size	NOS	37	37	
TOTAL OF	SUBSTATION-SCHEDULE-2 -Plant (To Schedule 6 Grand Summary)				

¹ Prices of Items quoted in Schedule No.1 shall not be quoted again in Schedule No. 2 and shall have a remark against the said row "Quoted in Schedule No.-1".

NAME OF THE WORK:-Design, Supply and Installation of 2X20 MVA-132/33 KV Sub-station at Gondia and associated 132 KV D/C LILO line from existing TTPS-DUBURI 132 KV Line to proposed Sub-station at Gondia (Approx. Line length-25.304 Km) in Odisha State of India under PACKAGE-6 Under Japan International Cooperation Agency (JICA)'s ODA Loan.

Loan Agreement No: [ID-P245] - FB No: [CPC/JICA/ICB/06/17-18/......] Reference Identification No[OPTCL/JICA/PKG-6]

Schedule No. 2. Plant Supplied from Within the Employer's Country (Transmission Line)

	NAME OF THE BIDDER				
Item	DESCRIPTION OF ITEMS(SCHEDULE-2-Line) SUPPLY OF FOLLOWING EQUIPMENT & MATERIALS (As per Technical Specification)	UNITS	132kV LILO line from existing 132kV TTPS-Duburi to proposed GONDIA S/S (Approx. Line length 25.034 km)	Unit Price ²	Total Price ²
			1	2	(1x2)
1	SUPPLY of Following type tested Lattice type Galvanized steel tangent / Angle tower with stubs and cleats, different type of G.I HT Nuts & Bolts, washer, spring washer for the towers ,hanger and all accessories, tower super structure complete including step bolts. Supply of black bituminous paint for three coats up to a height of 500mm above the cooping(legs & bracing members). All Supply should confirm to the Technical Specification.				
1.1	PA TYPE (SUSPENSION) TOWERS (Nominal unit weight 3.430 MT) (73nos)	MT	250.390		
1.1.1	+3 EXTENSION (Nominal unit weight 0.611 MT) (06 nos)	MT	3.666		
1.1.2	+6 EXTENSION (Nominal unit weight 1.349 MT) (0 nos)	MT	0.000		
1.2	PB TYPE (30 deg ANGLE) TOWERS (Nominal unit weight 4.973 MT) (10nos)	MT	49.730		
1.2.1	+3 EXTENSION (Nominal unit weight 1.018 MT) (0 Nos)	MT	0.000		
1.2.2	+6 EXTENSION (Nominal unit weight 2.104 MT) (0 nos)	MT	0.000		
1.3	PC TYPE (60 deg ANGLE) TOWERS (Nominal unit weight6.214MT) (9 NOS.)	MT	55.926		
1.3.1	+3 EXTENSION (Nominal unit weight 1.119 MT) (2 nos)	MT	2.238		
1.3.2	+6 EXTENSION (Nominal unit weight 2.342 MT) (0 nos)	MT	0.000		
1.4	TEMPLATES				
1.4.1	PA (Nominal unit weight 0.665 MT)(4 Nos.)	MT	2.660		
1.4.2	PB (Nominal unit weight 0.602MT)(1 Nos.)	MT	0.602		
1.4.3	PC (Nominal unit weight 0.904MT)(1 Nos.)	MT	0.904		
1.5	WEIGHT OF THE STRUCTURES (including Tower stubs)	MT	384.422		
1.6	Weight of different type G.I Nuts and Bolts[including 5% extra]	МТ	29.4		

	Supply of the following tower accessories as per technical specification and as			
2.0	directed by the engineer in charge.			
2.1	EARTHING DEVICE	Nos.	92	
2.2	DANGER BOARD	Nos.	92	
2.3	NUMBER PLATE	Nos.	92	
2.4	PHASE PLATE	Nos.	552	
2.5	BIRD GUARD	Nos.	438	
2.6	ANTICLIMBING DEVICE	Nos.	92	
2.7	CIRCUIT PLATE	Nos.	184	
3.0	Supply of following POWER CONDUCTORS in the proposed 132 kV lines with provision for 1.5 % sag and wastage as per the technical specification and as per the instruction of the engineer in charge.			
3.1	ACSR PANTHER	Kms.	154.10	
4.0	POWER CONDUCTOR ACESSORIES			
4.1	For ACSR PANTHER			
4.1.1	VIBRATION DAMPER	Nos.	558	
4.1.2	MID SPAN JOINT	Set	150	
4.1.3	REPAIR SLEEVE	Set	150	
4.1.4	P A ROD FOR ACSR PANTHER	Set	438	
4.1.5	PG CLAMP FOR ACSR PANTHER	Set	54	
5.0	Supply of OPGW fibre Optic Cable for speech, data & protection			
5.1	48 fiber (DWSM) OPGW fiber optic cable	kms	26	
5.2	OPGW fibre optic cable hardware set like suspension assembly, tension assembly (dead end assembly, pass through assembly), Vibration Damper, Down lead clamp ,assemblies for 24/48fibre (DWSM) OPGW joint Box	kms	26	
6.0	Supply of the following Anti fog type longrod Porcelain insulators as per the technical specification and as per the instruction of the Engineer in charge			
6.1	90 KN Long Rod Insulator for 132kV	Nos.	480	
6.2	120 KNLong Rod Insulator for 132 kV	Nos.	245	
7.0	Supply of the following hard ware fittings suitable for ACSR Panther conductors as per the technical specification.			
7.1	For ACSR PANTHER			
7.1.1	Single suspension Hard wares fittings.(AGS type) suitable for 90 KN long rod insulator.	Nos.	426	
7.1.2	Double suspension Hard wares fittings.(AGS type) suitable for 90 KN long rod insulator.	Nos.	12	
7.1.3	Single tension Hard ware fittings suitable for 120 KN long rod insulator.	Nos.	216	

7.1.4	Double tension Hard wares fittings suitable for 120 KN long rod insulator.		Nos.	12							
7.1.5	"D" Shackle		Nos.								
7.1.6	Hanger		Nos.	438							
7.1.7											
	TOTAL OF Schedule-2 Line To Schedule-6 Grand Summary										
Name of Bidder: Signature of Bidder:											
	¹ Prices of Items quoted in Schedule No.1 shall not be quoted again in Schedule No. 2 and shall have a remark against the said row "Quoted in Schedule No1".										

NAME OF THE WORK:- Design, Supply and Installation of Sub-Stations & Transmission Lines for Construction of 2X20 MVA-132/33 KV Sub-station at Gondia and associated 132 KV D/C Lilo line from TTPS-DUBURI 132 KV Line (Line length-25.3040Km approximately) in Odisha State of India under PACKAGE-6 Under Japan International Cooperation Agency (JICA)'s ODA Loan.

Loan Agreement No: [ID-P245] - FB No: [CPC/JICA/ICB/06/17-18/......]- Reference Identification No[OPTCL/JICA/PKG-6]

Schedule No. 4. Installation and Other Services-(Sub Station)

Schedule	No. 4. Installation and Other Services-(Sub Station)						
	NAME OF THE BIDDER						
			MVA, 5 Nos.: hipped DR, 02	Unit F	rice ¹	Total I	Price ¹
SI. No.	DESCRIPTION OF ITEMS(SCHEDULE-4-S/s) ERECTION OF FOLLOWING EQUIPMENT & MATERIALS (As per Technical Specification)	UNIT	QUANTITY: for Construction of 2X20 MVA, 132/33 KV S/S,Gondia (132 KV Bay-05 Nos.: 02 FDR, 02 TRF, 01 B/C, Zaos unequipped spare bay) & (33 KV Bay-08 Nos.: 05FDR, 02 TRF & 01 B/C)	Foreign Currency Portion	Local Currency Portion	Foreign Currency Portion	Local Currency Portion
			1	2	3	(1x2)	(1x3)
PART-A	ELECTRICAL WORKS						
1	145 KV,800-400-200 A,31.5 KA,4CORE SINGLE PHASE CURRENT TRANSFORMER (3 NOS PS CLASS & 1 NO. 0.2s CLASS)	NOS	15				
2	145 KV,1250A,31.5KA,ISOLATORS						
2.1	S/I WITH&WITH OUT EARTH SWITCH	NOS	9				
2.2	D/I WITH SINGLE EARTH SWITCH	NOS	2				
2.3	D/I WITHOUT EARTH SWITCH	NOS	2				
3	145 KV, 6600pF, 3CORE,SINGLE PHASE CAPACITOR VOLTAGE TRANSFORMER	NOS	6				
4	120 KV METAL OXIDE SURGE ARRESTOR, 10 KA, Class III	NOS	12				
5	145 KV, 2 CORE, SINGLE PHASE, IVT	NOS	3				
6	132 KV Bus Post Insulators	NOS	16				
7	145KV, 3150A, 40KA, SF6, CIRCUIT BREAKER WITH SUPPORTING STRUCTURE	NOS	5				
7.1	36 KV,800-400-200,25KA,3 CORE SINGLE PHASE CURRENT TRANSFORMER(2 NOS PS CLASS & 1 NO. 0.2s CLASS)	NOS	18				
7.2	36 KV, 800-400-200, 25KA, 4 CORE SINGLE PHASE CURRENT TRANSFORMER (3 NOS PS CLASS & 1 NO. 0.2s CLASS)	NOS	6				
8	36 KV CLASS NCT FOR POWER TRANSFORMER REF PROTECTION (RATIO 800-400-200 A) & HAVING TWO CORE (PS CLASS) (IN EACH POWER TRANSFORMER 132 KV SIDE: 1 NO, & 33 KV SIDE: 1 NO)	NOS	4				
9	36 KV,1250A,25KA,ISOLATORS						
9.1	S/I WITH OUT EARTH SWITCH	NOS	9				
9.2	D/I WITH SINGLE EARTH SWITCH	NOS	5	_			
9.3	D/I WITHOUT EARTH SWITCH	NOS	2				
9.4	S/I WITH BEAM MOUNTED	NOS	2				
10	30 KV, METAL OXIDE SURGE ARRESTOR, 10KA, class II	NOS	27				
11	36 KV ,2 CORE,SINGLE PHASE,IVT(1 core 3P & other core 0.2s)	NOS	3				
12	36KV,1250A,25KA,VACUUM CIRCUIT BREAKER WITH SUPPORTING STRUCTURE	NOS	8				
13	33 KV Bus Post Insulators	NOS	15				
14	BUS BAR & CIRCUIT MATERIALS						
14.1	Supply of labour,T&P and other necessary arrangements for stringing of bus bar conductors,hoisting of Long Rod insulator ,Single or Double Hard-wares Fittings, Clamp & connectors, as per requirements, Jumpers, connections to Equipments,testing,commissioning etc. as per the instruction of Engineer-in charge.						
14.1.1	Single conductor	KM	2.5				
14.1.2	Twin Conductor	KM	1.5				
14.2	EARTH SPIKES & IT'S HARDWARES & FITTING						
14.2.1	FOR 132KV SIDE : 26 NOS @ 7 MTRS LENGTH EACH	SET	26				

14.2.2	FOR 33 KV SIDE: 23 NOS @ 5 MTRS EACH	SET	23	r		
14.2.2	SUBSTATION EARTHING SYSTEMS	JLI	23			
14.3.1	EARTHING CONDUCTOR FOR BURRIAL: 75X10 mm GI Earth Flat for laying (spacing maximum 5m) (Substation earth mat): Design, engineering, supply (except the MS Rods, only erection) inclusive of corrosion protection measures if any,laying of earth mat conductors of size 75X10 mm GI Flat as per the approval of Engineer in charge, excavation, welding/jointing of ground conductors along with risers (a) up to Finished level from the mat size 75X10 mm GI Flat, filling of Bentonate powder of adequate depth and back filling with good compaction. The spacing between the earth conductor not more than 5 mtrs (both way) and to be buried at depth of 700 mm from the finished ground level as per the practice and as per specification.	MTRS	10000			
14.3.2	EARTHING CONDUCTOR: 50x6 mm GI Flat for Raiser from the burial earth mat to equipment, structure including proper welding, bending and anti corrosive painting etc from the finished ground level to the top of the structure and equipment shall be with 50X6 mm GI Flats, as per approved drawing and specification.	MTRS	3600			
14.3.3	EARTHING DEVICE & ASSOCIATED ACCESSORIES (50 mm heavy duty GI PERFORATED PIPE 3 mtrs long for treated earth pit): perforated 50 mm Heavy duty GI pipes for treated earth pits (with details of treatment as per IS) including, excavation, filling with Bentonate powder and other materials for the treated earth pit as per standard practice and as per specification.	NOS	125			
14.3.4	EARTHING DEVICE & ASSOCIATED ACCESSORIES 40mm MS rod 3 mtrs long for non treated earth pit)	NOS	90			
14.4	G.I Cable Trays including G.I. support Angle suitable for different sections i.e. Section:1-1,2-2,3-3 & 4-4 along with its accessories as per TS.					
14.4.1	G.I Cable Trays(size: 450x75x2500mm)	MTRS	1550			
14.4.2	G.I Cable Trays(size: 300x75x2500mm)	MTRS	2200			
14.4.3	G.I Cable Trays(size: 150x75x2500mm)	MTRS	1350			
14.4.4	Support G. I angle 50x50x6 mm for cable tray	MT	3			
14.5	SUB STATION SWITCYARD BMK, AC CONSOLE & OTHER MARSHALLING BOXES					
14.5.1	BAY MARSHALLING KIOSK	NOS	7			
14.5.2	SWITCH YARD AC CONSOLE FOR LIGHTING	NOS	2			
14.5.3	SWITCH YARD RECEPTACLE BOARD FOR TFR OIL FILTERATION	NOS	1			
14.5.4	SWITCH YARD RECEPTACLE BOARD FOR WELDING & OTHER EMERGENCY	NOS	2			
14.5.5	CT, PT & CVT Out Door Console Boxes	NOS	17			
15	SWITCH YARD STRUCTURES COLUMN & BEAM (LATTICE TYPE) FOR 132/33 KV CLASS INCLUDING FOUNDATION BOLTS & NUTS.					
15.1	DIFFERENT TYPES OF COLUMNS WITH DETAILS					
15.1.1	T1S - 132 KV(NOMINAL UNIT WT- 1.2 MT) = 20 Sets.	MT	24.00			
15.1.2	T4S - 132KV (NOMINAL UNIT WT- 0.95 MT) = 06 sets	MT	5.70			
15.1.3	T8S - 33KV(NOMINAL UNIT WT- 0.83 MT)=09Sets.	MT	7.47			
15.1.4	T9S - 33KV(NOMINAL UNIT WT- 0.6 MT) = 14 Sets.	MT	8.40			
15.2	DIFFERENT TYPE OF BEAMS WITH DETAILS					
15.2.1	G1 - 132 KV(NOMINAL UNIT WT- 0.58 MT) =17 Sets.	MT	9.86			
15.2.2	G1X - 132 KV (NOMINAL UNIT WT- 0.58 MT) = 2 Sets.	MT	1.16			
15.2.3	G2 - 132 KV(NOMINAL UNIT WT- 0.9 MT) = 06 Sets	MT MT	5.40 2.50			
15 3 4	G1,2 - 132 KV(Each two beams of G1 type) (NOMINAL UNIT WT- 1.25 MT) = 2	MT MT	2.50			
15.2.4 15.2.5	G6 - 33KV (NOMINAL UNIT WT- 0.53 MT) = 04 Sets. G4 - 33KV(NOMINAL UNIT WT- 0.4MT) = 09 Sets.	MT	3.60			
15.2.6	G4 - 33KV (NOMINAL UNIT WT- 0.4 MT) = 09 Sets. G4X - 33KV (NOMINAL UNIT WT- 0.4 MT) = 2Sets.	MT	0.80			
15.2.6	TOTAL WEIGHT OF COLUMN & BEAM	MT	71.01			
15.4	SWITCH YARD EQUIPMENT STRUCTURES (LATTICE TYPE) FOR 132/33 KV CLASS INCLUDING FOUNDATION BOLTS & NUTS.		71.01			
15.4.1	ISOLATORS-132KV					
15.4.2	S.I.WITH & WITHOUT E/S (Unit weight - 658.767 Kg) =9 Nos	MT	5.93			
15.4.3	D.I. WITHOUT E/S (Unit Weight - 979.10 Kg) = 2 Nos.	MT	1.96			
15.4.4	D.I. WITH E/S (Unit Weight - 1120.559 Kg) = 2 Nos.	MT	2.24			
15.4.5	ISOLATORS-33 KV					
15.4.6	S.I. WITHOUT E/S (Unit weight - 294.893 Kg) =8 Nos.	MT	2.65			
15.4.7	D.I. WITHOUT E/S (Unit weight - 655.764 Kg) = 2 Nos.	MT	1.31			
15.4.8	D.I. WITH E/S (Unit weight - 670.555 Kg) =5 Nos.	MT	3.35			
15.4.9	CTS-132 KV (Unit Weight - 214.546 Kg) = 15 Nos.	MT	3.22			
15.4.10	CTS-33 KV (Unit Weight - 148.80 Kg) = 18 Nos	MT	2.68			
15.4.11	CVTS-132 KV (Unit Weight - 236.628 Kg) = 6Nos.	MT	1.42			
15.4.12	IVTS-132 KV (Unit Weight - 231.195 Kg) = 3 Nos	MT	0.69			
15.4.13	IVTS-33 KV (Unit Weight - 124.336 Kg) = 3 Nos	MT	0.37			
15.4.14	Surge Arrester-132 kV (Unit Weight - 179.893 Kg) = 12 Nos	MT	2.16			

15.4.15	BPI-132 KV (Unit Weight - 309.883 Kg) = 21Nos	MT	4.96			
	BPI-33 KV (Unit Weight - 148.80 Kg) = 15 Nos	MT	2.23			
	NCTS (Unit Weight - 138.24 Kg) = 4 Nos	MT	0.55			
15.4.18	TOTAL WEIGHT OF EQUIPMENT STRUCTURE	MT	35.73			
	Total weight of GI Nuts and bolts for the above Column, Beam & structures	MT	7.25			
16	Laying of Power and Control Cable including fixing of cable with terminal connections both at equipments and					
, 	control panels with supply of and fixing of lugs, Ferrules, clamps, connectors, glands, fixing of cable trays, including					
, 	supply of N&B,Link plates,Cable Markers,PVC pipes Bends,Plaster of Paris, M-Seal compounds etc for sealing purpose and all necessary arrangements,laying of Earthing Flats,earthing ,laying of Cable trench slabs and					
	chequered plate etc for the cable trench, Cable scheduled and cable diagram to be prepared by the contractor					
, 						
	POWER CABLES,1.1KV,XLPE/PVC ARMOURED, ALUMINIUM CONDUCTOR (As per Specification)					
16.1.1	XLPE 3.5 CX300 mm ²	MTRS	500			
	XLPE 3.5 CX185 mm ²	MTRS	300			
	XLPE 3.5 CX120 mm ²	MTRS	200			
16.1.4	PVC 3.5 CX70 mm ²	MTRS	600			
16.1.5	PVC 3.5 CX35 mm ²	MTRS	1750			
	PVC 4 CX 16 mm ²	MTRS	1000			
	PVC 4 CX 6 mm ²	MTRS	3750	ļ		
16.1.8	PVC 2CX 6 mm ²	MTRS	2200			
16.2	CONTROL CABLES, 1.1 KV, PVC, STRANDED COPPER(As per specification)					
16.2.1	2 CX 2.5 mm2	MTRS	5500			
16.2.2	4 CX 2.5 mm ²	MTRS	10500			
16.2.3	5 CX 2.5 mm ²	MTRS	4500			
16.2.4 16.2.5	7CX 2.5 mm ²	MTRS	5500			
16.2.6	10 CX 2.5 mm ²	MTRS	10000			
16.2.7	12 CX 2.5 mm ²	MTRS MTRS	9000			
16.2.7	16 CX 2.5 mm ²		5000			
16.2.9	19 CX 2.5 mm ²	MTRS	2000			
	1CX 120 mm ² BAT TO BAT CHARGER & CHARGER TO DCDB	MTRS	600			
17	Erection of ACCESSORIES FOR PLCC SYSTEM for OPGW System					
17.1	Erection of 48 Fibre Optic Approach cable along with Hardware fittings	MTRS	1000			
17.2	Erection/comissioning of SDH/MUX along with termination with FODP	No	1			
17.3	Erection/commissioning of RTU along with fixing, cabling of MFMs	No	1			
17.4	Erection/commissioning of FODP	No	1			
	48 V, 300 AH, maintenance free VRLA Battery set.					
17.5	•	Set	1			
17.6	SMPS based battery charger of 75A suitable for 48V VRLA battery.	No	1			
17.7	48V DCDB	No	1			
17.8	Earth Flat, Cable Tray, Telephone cable,Foundation rail, Junction Box,.	LS	1			
18	ERECTION OF STATION TRANSFORMER & OTHER MATERIALS FOR MEETING THE AUXILIARY SUPPLY OF THE SUB- STATION AS PER TECHNICAL SPECIFICATION					
18.1	STATION TRANSFORMER 33KV/433V,250 KVA (AS PER SPECIFICATION)	NOS	2			
18.2	33 KV AB SWITCH IN 33 KV SIDE(600AMP), HG FUSE, DP STRUCTURE, ANGLE FOR BRACING OF DP				-	
10.2	STRUCTURE, POWER CABLES, CHANEL, INCLUDING INSULATORS, CONDUCTOR, CLAMPS & CONNECTOR,					
	JUMPERING AND OTHER ACCESSORIES REQUIRED FOR ERECTION ,TESTING, COMMISSIONING OF STATION	SETS	2			
	TRANSFORMER. ERECTION OF LT OUTDOOR KIOSK AND REQUIRED CABLE TERMINATION. THE NON-GALVANIZED	3E13				
	STRUCTURES SHALL BE PAINTED WITH TWO COATS OF EPOXY BASED ALUMINIUM PAINT.					
19	SUB STATION LIGHTING (AS PER SPECIFICATION AND APPROVED DRAWINGS)(Switch yard and other street area)					
19.1	SUB-STATION SWITCH YARD LIGHTING,IT INCLUDES SUPPLY OF FIXTURES & LAMPS (LED) of reputed make					
	(Philips/CGL/Bajaj/ other approved make of OPTCL) with switch gear,GI Conduit etc.(Lighting fixtures are to be	CET	4.0			
	fixed rigidly on the Column at a suitable height so that the required lux can be achieved).(150 watt each)	SET	46			
<u> </u>						

	STREET LIGHTING: IT INCLUDES SUPPLY OF GI TUBULAR POLE AS PER TECHNICAL SPECIFICATION, LED LIGHTING				
	FIXTURES including LAMPS of reputed make (Philips/CGL/Bajaj/ other approved make of OPTCL).(100 watt each) for				
19.2	Street Light. (TO BE PROVIDED IN THE SWITCH YARD, ALONG THE ROADS (APPROACH INSIDE YARD AND OTHER				
13.2	ROADS), COLONY QUARTERS AND OTHER ROADS. ALL MATERIALS AS PER APPROVED DRAWING AND				
	SPECIFICATION TO COMPLETE				
	THE STREET LIGHTING SYSTEM. PROPER EARTHING AS PER STANDARD PRACTICE				
19.2.1	LED LIGHTING FIXTURES including LAMPS of reputed make (Philips/CGL/Bajaj/ other approved make of OPTCL).(100 watt	SET	25		
19.2.1	each) for Street Light.	JL1	23		
19.2.2	GI Tubular Pole: (410-SP-24: IS 2713-Part-II-1980 or latest) Length of pole 8.5 mtrs(minimum weight 158 Kgs).	CET	25		
19.2.2	(ALL THE STREET LIGHT POLE SHALL BE OF GI TUBULAR POLE AND PROVISION OF A GI JUNCTION BOX WITH	SET	25		
	OUTDOOR KIOSK of 3 mm thick CRCA sheet duly hot dip galvanised FOR STREET LIGHT HAVING 2 NOS 200 AMP				
19.2.3	SWITCH FUSE UNITS AND 10 NOS. OUT LETS OF 32 AMP MCB. XLPE CABLES(3.5 CORE 120 SQMM) FROM MAIN	NO	1		
	OUTDOOR KIOSK of 3 mm thick CRCA sheet duly hot dip galvanised FOR COLONY SUPPLY PURPOSE HAVING 2 NOS.				
	200 A SWITCH FUSE UNITS, 6 NOS.OUT LETS OF 32 AMP MCB FOR COLONY QUARTES. XLPE CABLES(3.5 CORE 120				
19.2.4	SQM) FROM MAIN ACDB FROM CONTROL ROOM TO THE OUT DOOR KIOSK. 4CX16 SQMM FROM KIOSK TO EACH	NO	1		
	QUARTER.				
20	2 TR CAPACITY SPLIT AIR CONDITIONING UNITS WITH REMOTE CONTROL FACILITY: Erection of 5 star rated AIR				
	CONDITIONERS, Automatic Voltage Stabiliser, CONTROL BOXES ETC FOR COMPLETING THE A.C SCHEME. (AS PER	CET	20		
	SPECIFICATION) FOR CONTROL ROOM, CARRIER ROOM & CONFERENCE ROOM.,OFFICE ROOM etc (*SUPPLY OF	SET	20		
	CABLES ARE COVERED IN CABLE ITEMS AS INDICATED ABOVE)				
21	Erection of FIRE FIGHTING SYSTEM(PORTABLE AND WHEEL MOUNTED SETS FOR CONTROL ROOM,EQUIPMENT				
	LIKE TRANSFORMER AND OTHER AREAS AS PER TECH SPEC(REFER TS-INST TO BIDDER BEFORE DESIGN-SL NO 16-				
	ANNEXURE - I)				
21.1	FOAM TYPE-9 LTRS	NOS	4		
21.2	DRY CHEMICAL POWDER(TROLLEY MOUNTED)- 25 KGS	NOS	4	 	
21.3	DRY POWDER TYPE -6 KGS	NOS	4		
21.4	CO ₂ - 4.5 KGS	NOS	10		
21.5	CO ₂ - 9.0 KGS	NOS	10		
21.6	CO ₂ (TROLLY MOUNTED)- 22.5 KGS	NOS	4		
21.7	Water type- 9 LTRS	NOS	4		
21.7	Foam type - 50 LTR	NOS	4		
21.8	FIRE BUCKET (6 NOS IN EACH STAND) WITH STAND With Canopy arrangement	SET	6		
21.5	ERECTION OF THE TRANSFORMERS AND ITS ACCESSORIES ON THE PLINTH AND PLACING IN POSITION, ERECTION	JL1	0		
	OF ACCESSORIES OF THE TRANSFORMERS, EART-HING AS PER STANDARD(INCLUDING SUPPLY OF				
	MATERIALS), VACUUM TREATMENT OF THE TANK AND WINDING, OIL FILTRATION (INCLUDING SUPPLY OF VACUUM				
	CUM OIL FILTER MACHINE), SUPPLY & LAYING OF ALL TYPES OF CONTROL & POWER CABLES PERTAINING TO				
	TRANSFORMERS , TESTING AND COMMISSIONING INCLUDING ALL TESTS OF THE OILS AS PER STIPULATION IN THE				
	STANDARD APPROVED TESTING LABORATORY AND AS PER THE INSTRUCTION OF THE ENGINEER IN CHARGE.THIS				
22		Nos	2		
~~	INCLUDE ALL RELATED WORKS FOR FRECTION/Transformer and its accessories RTCC Panel etc) TESTING AND				
	INCLUDE ALL RELATED WORKS FOR ERECTION(Transformer and its accessories,RTCC Panel etc),TESTING AND				
22	COMMISSIONING OF THE POWER TRANSFORMERS.(CONTRACTOR TO ARRANGE POWER SUPPLY FOR FILTRATION				
22	COMMISSIONING OF THE POWER TRANSFORMERS (CONTRACTOR TO ARRANGE POWER SUPPLY FOR FILTRATION AND VACUUM TREATMENT WORKS).IT ALSO INCLUDES SUPPLY OF ALL MATERIALS FOR ERECTTION INCLUDING				
22	COMMISSIONING OF THE POWER TRANSFORMERS.(CONTRACTOR TO ARRANGE POWER SUPPLY FOR FILTRATION AND VACUUM TREATMENT WORKS).IT ALSO INCLUDES SUPPLY OF ALL MATERIALS FOR ERECTTION INCLUDING T&P's.				
22	COMMISSIONING OF THE POWER TRANSFORMERS (CONTRACTOR TO ARRANGE POWER SUPPLY FOR FILTRATION AND VACUUM TREATMENT WORKS).IT ALSO INCLUDES SUPPLY OF ALL MATERIALS FOR ERECTTION INCLUDING				
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	COMMISSIONING OF THE POWER TRANSFORMERS.(CONTRACTOR TO ARRANGE POWER SUPPLY FOR FILTRATION AND VACUUM TREATMENT WORKS).IT ALSO INCLUDES SUPPLY OF ALL MATERIALS FOR ERECTTION INCLUDING T&P's. 1. 132/33 KV 20/40 MVA: 02 Nos SUBSTATION AUTOMATION SYSTEM: Supply of the following 132 and 33 kV level consisting of Panels, Bay control Units, DP Relays, Numerical O/C & E/F Relays, DC Supervision relays, Trip Circuit Supervision, Trip Relay ,Test Block, Differential with REF, Overflux, High impednce REF, Numerical O/C & E/F relay,Transformer trouble				
23	COMMISSIONING OF THE POWER TRANSFORMERS.(CONTRACTOR TO ARRANGE POWER SUPPLY FOR FILTRATION AND VACUUM TREATMENT WORKS).IT ALSO INCLUDES SUPPLY OF ALL MATERIALS FOR ERECTTION INCLUDING T&P's. 1. 132/33 KV 20/40 MVA: 02 Nos SUBSTATION AUTOMATION SYSTEM: Supply of the following 132 and 33 kV level consisting of Panels, Bay control Units, DP Relays, Numerical O/C & E/F Relays, DC Supervision relays, Trip Circuit Supervision, Trip Relay ,Test Block, Differential with REF, Overflux, High impednce REF, Numerical O/C & E/F relay,Transformer trouble relay etc. Station level consisting of Industrial Computer with accessories, PC with accessories, laser printer, UPS, GPS System & Numerical bay control unit etc.				
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23.1 23.1.1 23.1.2	COMMISSIONING OF THE POWER TRANSFORMERS.(CONTRACTOR TO ARRANGE POWER SUPPLY FOR FILTRATION AND VACUUM TREATMENT WORKS).IT ALSO INCLUDES SUPPLY OF ALL MATERIALS FOR ERECTTION INCLUDING T&P's. 1. 132/33 KV 20/40 MVA: 02 Nos SUBSTATION AUTOMATION SYSTEM: Supply of the following 132 and 33 kV level consisting of Panels, Bay control Units, DP Relays, Numerical O/C & E/F Relays, DC Supervision relays, Trip Circuit Supervision, Trip Relay ,Test Block, Differential with REF, Overflux, High impednce REF, Numerical O/C & E/F relay,Transformer trouble relay etc. Station level consisting of Industrial Computer with accessories, PC with accessories, laser printer, UPS, GPS System & Numerical bay control unit etc. 132KV Level Yard AC Kiosk: 4500 mm (L)x4000mm (W)x 3500mm (H) with Air Conditioning as per the Specification; Numerical Bay control unit: 24 Digital input & 20Nos digital out put with CT / PT Input cards. IEC 61850 protocol	Nos.	5		
23 23.1 23.1.1	COMMISSIONING OF THE POWER TRANSFORMERS.(CONTRACTOR TO ARRANGE POWER SUPPLY FOR FILTRATION AND VACUUM TREATMENT WORKS).IT ALSO INCLUDES SUPPLY OF ALL MATERIALS FOR ERECTTION INCLUDING T&P's. 1. 132/33 KV 20/40 MVA: 02 Nos SUBSTATION AUTOMATION SYSTEM: Supply of the following 132 and 33 kV level consisting of Panels, Bay control Units, DP Relays, Numerical O/C & E/F Relays, DC Supervision relays, Trip Circuit Supervision, Trip Relay ,Test Block, Differential with REF, Overflux, High impednce REF, Numerical O/C & E/F relay,Transformer trouble relay etc. Station level consisting of Industrial Computer with accessories, PC with accessories, laser printer, UPS, GPS System & Numerical bay control unit etc. 132KV Level Yard AC Kiosk: 4500 mm (L)x4000mm (W)x 3500mm (H) with Air Conditioning as per the Specification; Numerical Bay control unit :24 Digital input & 20Nos digital out put with CT / PT Input cards. IEC 61850 protocol				
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23.1 23.1.1 23.1.2 23.1.3 23.1.4	COMMISSIONING OF THE POWER TRANSFORMERS.(CONTRACTOR TO ARRANGE POWER SUPPLY FOR FILTRATION AND VACUUM TREATMENT WORKS).IT ALSO INCLUDES SUPPLY OF ALL MATERIALS FOR ERECTTION INCLUDING T&P's. 1. 132/33 KV 20/40 MVA: 02 Nos SUBSTATION AUTOMATION SYSTEM: Supply of the following 132 and 33 kV level consisting of Panels, Bay control Units, DP Relays, Numerical O/C & E/F Relays, DC Supervision relays, Trip Circuit Supervision, Trip Relay ,Test Block, Differential with REF, Overflux, High impednce REF, Numerical O/C & E/F relay,Transformer trouble relay etc. Station level consisting of Industrial Computer with accessories, PC with accessories, laser printer, UPS, GPS System & Numerical bay control unit etc. 132KV Level Yard AC Kiosk: 4500 mm (L)x4000mm (W)x 3500mm (H) with Air Conditioning as per the Specification; Numerical Bay control unit: 24 Digital input & 20Nos digital out put with CT / PT Input cards. IEC 61850 protocol Numerical distance protection with the following functions: IEC 61850 protocol. Numerical Transformer Differential/REF protection with the following functions: Over flux ,Over volt etc. IEC 61850 protocol	Nos. Nos.	5 2 2		
23.1 23.1.1 23.1.2 23.1.3 23.1.4 23.1.5	COMMISSIONING OF THE POWER TRANSFORMERS.(CONTRACTOR TO ARRANGE POWER SUPPLY FOR FILTRATION AND VACUUM TREATMENT WORKS).IT ALSO INCLUDES SUPPLY OF ALL MATERIALS FOR ERECTTION INCLUDING T&P's. 1. 132/33 KV 20/40 MVA: 02 Nos SUBSTATION AUTOMATION SYSTEM: Supply of the following 132 and 33 kV level consisting of Panels, Bay control Units, DP Relays, Numerical O/C & E/F Relays, DC Supervision relays, Trip Circuit Supervision, Trip Relay ,Test Block, Differential with REF, Overflux, High impednce REF, Numerical O/C & E/F relay,Transformer trouble relay etc. Station level consisting of Industrial Computer with accessories, PC with accessories, laser printer, UPS, GPS System & Numerical bay control unit etc. 132KV Level Yard AC Kiosk: 4500 mm (L)x4000mm (W)x 3500mm (H) with Air Conditioning as per the Specification; Numerical Bay control unit :24 Digital input & 20Nos digital out put with CT / PT Input cards. IEC 61850 protocol Numerical Transformer Differential/REF protection with the following functions: Over flux ,Over volt etc. IEC 61850 protocol Numerical over current , earth fault relays: IEC 61850 protocol	Nos. Nos. Nos.	5 2 2 5		
23.1 23.1.1 23.1.2 23.1.3 23.1.4 23.1.5 23.1.6	COMMISSIONING OF THE POWER TRANSFORMERS.(CONTRACTOR TO ARRANGE POWER SUPPLY FOR FILTRATION AND VACUUM TREATMENT WORKS).IT ALSO INCLUDES SUPPLY OF ALL MATERIALS FOR ERECTTION INCLUDING T&P's. 1. 132/33 KV 20/40 MVA: 02 Nos SUBSTATION AUTOMATION SYSTEM: Supply of the following 132 and 33 kV level consisting of Panels, Bay control Units, DP Relays, Numerical O/C & E/F Relays, DC Supervision relays, Trip Circuit Supervision, Trip Relay rest Block, Differential with REF, Overflux, High impednce REF, Numerical O/C & E/F relay,Transformer trouble relay etc. Station level consisting of Industrial Computer with accessories, PC with accessories, laser printer, UPS, GPS System & Numerical bay control unit etc. 132KV Level Yard AC Kiosk: 4500 mm (L)x4000mm (W)x 3500mm (H) with Air Conditioning as per the Specification; Numerical Bay control unit :24 Digital input & 20Nos digital out put with CT / PT Input cards. IEC 61850 protocol Numerical distance protection with the following functions: IEC 61850 protocol. Numerical Transformer Differential/REF protection with the following functions: Over flux ,Over volt etc. IEC 61850 protocol High Impedance REF Relay	Nos. Nos. Nos. Nos. Nos.	5 2 2 2 5		
23.1 23.1.1 23.1.2 23.1.3 23.1.4 23.1.5 23.1.6 23.1.7	COMMISSIONING OF THE POWER TRANSFORMERS.(CONTRACTOR TO ARRANGE POWER SUPPLY FOR FILTRATION AND VACUUM TREATMENT WORKS).IT ALSO INCLUDES SUPPLY OF ALL MATERIALS FOR ERECTTION INCLUDING T&P's. 1. 132/33 KV 20/40 MVA: 02 Nos SUBSTATION AUTOMATION SYSTEM: Supply of the following 132 and 33 kV level consisting of Panels, Bay control Units, DP Relays, Numerical O/C & E/F Relays, DC Supervision relays, Trip Circuit Supervision, Trip Relay rest Block, Differential with REF, Overflux, High impednce REF, Numerical O/C & E/F relay,Transformer trouble relay etc. Station level consisting of Industrial Computer with accessories, PC with accessories, laser printer, UPS, GPS System & Numerical bay control unit etc. 132KV Level Yard AC Kiosk: 4500 mm (L)x4000mm (W)x 3500mm (H) with Air Conditioning as per the Specification; Numerical Bay control unit: 24 Digital input & 20Nos digital out put with CT / PT Input cards. IEC 61850 protocol Numerical distance protection with the following functions: IEC 61850 protocol. Numerical Transformer Differential/REF protection with the following functions: Over flux ,Over volt etc. IEC 61850 protocol High Impedance REF Relay Numerical Centralised Bus bar protection.	Nos. Nos. Nos. Nos. Nos. Nos. Nos.	5 2 2 5 2 1		
23.1 23.1.1 23.1.2 23.1.3 23.1.4 23.1.5 23.1.6 23.1.7 23.1.8	COMMISSIONING OF THE POWER TRANSFORMERS.(CONTRACTOR TO ARRANGE POWER SUPPLY FOR FILTRATION AND VACUUM TREATMENT WORKS).IT ALSO INCLUDES SUPPLY OF ALL MATERIALS FOR ERECTTION INCLUDING T&P's. 1. 132/33 KV 20/40 MVA: 02 Nos SUBSTATION AUTOMATION SYSTEM: Supply of the following 132 and 33 kV level consisting of Panels, Bay control Units, DP Relays, Numerical O/C & E/F Relays, DC Supervision relays, Trip Circuit Supervision, Trip Relay ,Test Block, Differential with REF, Overflux, High impednce REF, Numerical O/C & E/F relay,Transformer trouble relay etc. Station level consisting of Industrial Computer with accessories, PC with accessories, laser printer, UPS, GPS System & Numerical bay control unit etc. 132KV Level Yard AC Kiosk :4500 mm (L)x4000mm (W)x 3500mm (H) with Air Conditioning as per the Specification; Numerical Bay control unit :24 Digital input & 20Nos digital out put with CT / PT Input cards. IEC 61850 protocol Numerical distance protection with the following functions: IEC 61850 protocol. Numerical Transformer Differential/REF protection with the following functions: Over flux ,Over volt etc. IEC 61850 protocol Numerical over current , earth fault relays: IEC 61850 protocol High Impedance REF Relay Numerical Centralised Bus bar protection. AUXILIARY RELAY FOR DC SUPERVISION	Nos. Nos. Nos. Nos. Nos. Nos. Nos. Nos.	5 2 2 5 2 1 10		
23.1 23.1.1 23.1.2 23.1.3 23.1.4 23.1.5 23.1.6 23.1.7 23.1.8 23.1.9	COMMISSIONING OF THE POWER TRANSFORMERS.(CONTRACTOR TO ARRANGE POWER SUPPLY FOR FILTRATION AND VACUUM TREATMENT WORKS).IT ALSO INCLUDES SUPPLY OF ALL MATERIALS FOR ERECTTION INCLUDING T&P's. 1. 132/33 KV 20/40 MVA: 02 Nos SUBSTATION AUTOMATION SYSTEM: Supply of the following 132 and 33 kV level consisting of Panels, Bay control Units, DP Relays, Numerical O/C & E/F Relays, DC Supervision relays, Trip Circuit Supervision, Trip Relay ,Test Block, Differential with REF, Overflux, High impednce REF, Numerical O/C & E/F relay,Transformer trouble relay etc. Station level consisting of Industrial Computer with accessories, PC with accessories, laser printer, UPS, GPS System & Numerical bay control unit etc. 132KV Level Yard AC Kiosk: 4500 mm (L)x4000mm (W)x 3500mm (H) with Air Conditioning as per the Specification; Numerical Bay control unit :24 Digital input & 20Nos digital out put with CT / PT Input cards. IEC 61850 protocol Numerical distance protection with the following functions: IEC 61850 protocol. Numerical Transformer Differential/REF protection with the following functions: Over flux ,Over volt etc. IEC 61850 protocol Numerical over current , earth fault relays: IEC 61850 protocol High Impedance REF Relay Numerical Centralised Bus bar protection. AUXILIARY RELAY FOR DC SUPERVISION AUXILIARY RELAY FOR TRANSFORMER TROUBLES 4	Nos. Nos. Nos. Nos. Nos. Nos. Nos. Nos.	5 2 2 5 2 1 10 2 2		
23.1 23.1.1 23.1.2 23.1.3 23.1.4 23.1.5 23.1.6 23.1.7 23.1.8 23.1.9 23.1.10	COMMISSIONING OF THE POWER TRANSFORMERS.(CONTRACTOR TO ARRANGE POWER SUPPLY FOR FILTRATION AND VACUUM TREATMENT WORKS).IT ALSO INCLUDES SUPPLY OF ALL MATERIALS FOR ERECTTION INCLUDING T&P'S. 1. 132/33 KV 20/40 MVA: 02 Nos SUBSTATION AUTOMATION SYSTEM: Supply of the following 132 and 33 kV level consisting of Panels, Bay control Units, DP Relays, Numerical O/C & E/F Relays, DC Supervision relays, Trip Circuit Supervision, Trip Relay Test Block, Differential with REF, Overflux, High impednce REF, Numerical O/C & E/F relay,Transformer trouble relay etc. Station level consisting of Industrial Computer with accessories, PC with accessories, laser printer, UPS, GPS System & Numerical bay control unit etc. 132KV Level Yard AC Kiosk: 4500 mm (L)x4000mm (W)x 3500mm (H) with Air Conditioning as per the Specification; Numerical Bay control unit :24 Digital input & 20Nos digital out put with CT / PT Input cards. IEC 61850 protocol Numerical distance protection with the following functions: IEC 61850 protocol. Numerical Transformer Differential/REF protection with the following functions: Over flux ,Over volt etc. IEC 61850 protocol High Impedance REF Relay Numerical Centralised Bus bar protection. AUXILIARY RELAY FOR DC SUPERVISION AUXILIARY RELAY FOR DC SUPERVISION AUXILIARY RELAY FOR TRANSFORMER TROUBLES 4 MPG - TEST BLOCK 2	Nos. Nos. Nos. Nos. Nos. Nos. Nos. Nos.	5 2 2 5 2 1 10 2 20		
23.1 23.1.1 23.1.2 23.1.3 23.1.4 23.1.5 23.1.6 23.1.7 23.1.8 23.1.9	COMMISSIONING OF THE POWER TRANSFORMERS.(CONTRACTOR TO ARRANGE POWER SUPPLY FOR FILTRATION AND VACUUM TREATMENT WORKS).IT ALSO INCLUDES SUPPLY OF ALL MATERIALS FOR ERECTTION INCLUDING T&P's. 1. 132/33 KV 20/40 MVA: 02 Nos SUBSTATION AUTOMATION SYSTEM: Supply of the following 132 and 33 kV level consisting of Panels, Bay control Units, DP Relays, Numerical O/C & E/F Relays, DC Supervision relays, Trip Circuit Supervision, Trip Relay ,Test Block, Differential with REF, Overflux, High impednce REF, Numerical O/C & E/F relay,Transformer trouble relay etc. Station level consisting of Industrial Computer with accessories, PC with accessories, laser printer, UPS, GPS System & Numerical bay control unit etc. 132KV Level Yard AC Kiosk: 4500 mm (L)x4000mm (W)x 3500mm (H) with Air Conditioning as per the Specification; Numerical Bay control unit :24 Digital input & 20Nos digital out put with CT / PT Input cards. IEC 61850 protocol Numerical distance protection with the following functions: IEC 61850 protocol. Numerical Transformer Differential/REF protection with the following functions: Over flux ,Over volt etc. IEC 61850 protocol Numerical over current , earth fault relays: IEC 61850 protocol High Impedance REF Relay Numerical Centralised Bus bar protection. AUXILIARY RELAY FOR DC SUPERVISION AUXILIARY RELAY FOR TRANSFORMER TROUBLES 4	Nos. Nos. Nos. Nos. Nos. Nos. Nos. Nos.	5 2 2 5 2 1 10 2 2		

23.1.13	Line interface unit;	sets.	3	1	İ	Î	1
23.1.14	Ethernet switch IEC 61850-3,IEEE1588v2	sets.	6				
23.1.15	Multimode glass fibre Optical cord Double jacket armoured ,rodent resilient.	Mtr.	1,000				
23.1.13	· · · · · · · · · · · · · · · · · · ·	IVICI.	1,000				
	Simplex Cubicle type for process bus equipment , Swing frame front access (VSG), Dimension 2300mm (H) X						
23.1.16	1000mm (D) X 1000mm (W), earth bar 25x6 Sq. mm. Copper with the following components	Set	5				
			_				
23.1.17	DCDB panel; With Bus bar Switches,600(L)X 400(W)X 500(H)	No.	2				
23.1.18	TIME SYNCH EQUIPMENT	No.	1				
22.4	33 KV SIDE						
23.2.1	Yard AC Kiosk :4500 mm (L)x3500mm (W)x 3300mm (H) with Air conditioning as per the Specification;	Nos.	1				
23.2.2	Integrated Numerical Bay control unit with protection function :16Digital input & 10Nos digital out put with CT / PT	Nos.	8				
	Input cards	1403.	Ü				
23.2.3	DC Supervision Relay	Nos.	16				
23.2.4	TRIP Relay	Nos.	8				
23.2.5	Test Block	Nos.	16				
23.2.6	Line interface unit;	sets.	2				
23.2.7	Ethernet switch IEC 61850-3,IEEE1588v2	sets.	3				
23.2.8	Multimode glass fibre Optical cord Double jacket armoured ,rodent resilient	Mtr.	500	1			
	Simplex Cubicle type for process bus equipment , Swing frame front access (VSG), Dimension 2300mm (H) X 900mm	-					
23.2.9	(D) X 900mm (W), earth bar 25x6 Sq. mm. Copper with the following components	Set	4			Ì	!
	127 222 1, carar our 25.00 sqr mini copper mariane following components	SCC	i ·			Ì	!
23.2.10	DCDB panel; With Bus bar Switches,600(L)X 400(W)X 500(H)	No.	1	1		Ì	
24	Station Level	INU.	1				ļ
24				-			
	Windows based Industrial computer with standard accessories – Keyboard, mouse, monitor with operating	set					
24.1	software window 10 or 8, IED configuration, substation automation, . Main & Back up. With automation		2			Ì	Į į
	softwares. Main						
	Windows based PC with standard accessories – Keyboard, mouse, monitor with operating software window 10 or	set					
24.2	8, IED configuration, substation automation, Disturbance recorder software. DR & work Station PC.Client		1				
24.3	Color Laser jet Printer	No.	1				
24.4	UPS , 1KVA	No.	2				
24.5	GPS System with PTP	set	1				
24.6	Gateway for SCADA	set	1				
24.7	Large vedio screen of 60 inches for display including all type of accessories	set	1				
25	AC & DC SYSTEM						
25.1	AC SYSTEM						
25.1.1	MAIN AC DB, (HAVING 800 A, 50KA, DRAWOUT TYPE ACB WITH 3 O/C, E/F, U/V RELAYING FACILITY INDOOR TYPE						
	AS PER SPECIFICATION. (MAIN DB-1, MAIN DB-2 WITH B/C)	SET					
25.1.2	ACDB (HAVING 400A MCCB) AS PER SPECIFICATION (AC DB-1, AC DB-2 WITH B/C)	SET	1				
25.1.3	MAIN LIGHTING DISTRIBUTION BOARD (HAVING 250A MCCB AS INCOMER)AS PER SPECIFICATION (WITH DB-1, DB-						
23.1.3	2 & B/C)	SET	1				
25.1.4	INDOOR LIGHTING DISTRIBUTION BOARD AS PER SPECIFICATION. (WITH DB-1,DB-2 & B/C)	SET	1			†	
		SET	1				-
25.1.5	EMERGENCY LIGHTING DISTRIBUTION BOARD	SET	1			 	
25.1.6	INDOOR RECEPTACLE BOARD	JE I	1				
25.2	DC SYSTEM						
25.2.1	220 V DC BOARD (HAVING 100A DC MCCB AS INCOMER, E/F (EARTH LEAKAGE), UNDER & OVER VOLTAGE AS PER	SET	ĺ			1	l l
0.5.	SPECIFICATION (DC DB-1)	0.55	 			 	
25.2.2	220 V DC EMERGENCY DISTRIBUTION BOARD	SET	1			 	
25.2.3	BATTERY (350 AH PLANTE TYPE) FOR 220 V DC	SET	1				
25.2.4	BATTERY CHARGER FOR 220 V, 350 AH BATTERY (FLOAT AND FLOAT CUM BOOST)	SET	1				
26	DISTLED WATER PLANT OF 10 LTR/HR FOR BATTERY BANKS	SET	1				
27	WALKIE TALKIE SET	SET/ PAIR	1				
28	PORTABLE ALUMINIUM LADDER EXTENDABLE TYPE OF ADEQUATE HEIGHT TO BE USED FOR MAINTENANCE OF	NOS	-				
	EQUIPMENT INSIDE SWITCH YARD.	INOS	2			Ì	
29	PEDESTAL MOUNTED WHEEL FITTED DERRICK FOR LIFTING/ LOWERING OF MATERIALS UP TO 1.5 TON CAPACITY.	0.57	_				
	,	SET	2			Ì	Į į
30	POWER WINCH NEAR STORE SHED FOR HANDLING MATERIALS UPTO 5 TON CAPACITY.	SET	1			İ	
31	WATER COOLER WITH WATER PURIFIER SYSTEM	NOS	1			 	
31					l	 	
22	MAINTENANCE TECTING COLUDIANT /AC DED ANNEVIDE I INDICATED IN TO TIME COURDING OF DECUMERATING		1			ĺ	
32	MAINTENANCE TESTING EQUIPMENT (AS PER ANNEXURE - I , INDICATED IN TS-TIMK-SCHEDULE OF REQUIREMENTS	SET					
	OF MAINTENANCE EQUIPMENT)	SET				-	
32	OF MAINTENANCE EQUIPMENT) OTHER TOOLS AND PLANTS (T&P's) REQUIREMENT (AS PER ANNEXURE - II ,INDICATED IN TS-TIMK-SCHEDULE OF		1				
33	OF MAINTENANCE EQUIPMENT) OTHER TOOLS AND PLANTS (T&P's) REQUIREMENT (AS PER ANNEXURE - II ,INDICATED IN TS-TIMK-SCHEDULE OF REQUI-REMENTS OTHER T&P's)	SET					
	OF MAINTENANCE EQUIPMENT) OTHER TOOLS AND PLANTS (T&P'S) REQUIREMENT (AS PER ANNEXURE - II ,INDICATED IN TS-TIMK-SCHEDULE OF REQUI-REMENTS OTHER T&P'S) OFFICE FURNITURE (AS PER ANNEXURE - III ,INDICATED IN TS-TIMK-SCHEDULE OF REQUIREMENTS OFFICE	SET	1				
33	OF MAINTENANCE EQUIPMENT) OTHER TOOLS AND PLANTS (T&P's) REQUIREMENT (AS PER ANNEXURE - II ,INDICATED IN TS-TIMK-SCHEDULE OF REQUI-REMENTS OTHER T&P's)						

Seal Common Comm	35	BEST QUALITY &APPROVED MAKE INSULATING MAT (Confirming to IS:15652:2006) TO BE KEPT INFRONT OF ALL		1			
TOTAL OF EXCENSION COUNTY OF COUNTY	35		NOS	37			
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sgregatestaken and set Metal Chips and per consecution of Inc. (1.15.16, INC. C. Disciplinary of American Conference in Conferen							
nelection and paties apper requirement including soil investigation, excensions, conceining, solitatining, growth, and consideration and patients of the following wildly on greating power of stratums and experience of stratum and patients of the following wildly growth grainty power of the stratum and patients of the stratum and patient	-						
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This also includes excessation in all types of sick or rodu, back filling and disposal of excess earth as per the direction of Engineer in Carpet							
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1.1							
1.1.1 TS-12 PRINCHARMA UNIT WT-12 MT NO.5 70		or Engineer in charge.					
1.1.1 TS-12 PRINCHARMA UNIT WT-12 MT NO.5 70	1.1	Switch vard gantry/portal structure foundations					
1.1.2 15. 15.07 (DOMINAL UNIT WT - 0.95 MT)			NOC	20			
1.1.1 Test - 38/OV/DOMMAN LUTH TVT-0.6MT MOS 14		,					
1.1.4 TSS - 338/VIONDAMINAL UNIT WT - 0.0 MT TSS - 1.2 Regiment thousidation: No.5 15							
1.21 15/14,							
1.34 345 NY, 800-402 DOI, 3.15 KA, ACORS SINGE PHASE CURRENT TRANSFORMER			1403	14			
1.3.1 55 NVT DOTA CARTIN SWITCH 1.3.2 DOT WITH SWRIGE EARTH SWITCH 1.3.2 DOT WITH SWRIGE EARTH SWITCH 1.3.3 DOT WITH SWRIGE EARTH SWITCH 1.3.3 DOT WITH SWRIGE EARTH SWITCH 1.3.4 DOTA CORES, SWRIGE PRACE COALCITOR VOLTAGE TRANSFORMER 1.3.5 DOTA CORES, SWRIGE PRACE COALCITOR VOLTAGE TRANSFORMER 1.3.6 DOTA CORES, SWRIGE PRACE COALCITOR VOLTAGE TRANSFORMER 1.3.6 DOTA CORES, SWRIGE PRACE COALCITOR VOLTAGE TRANSFORMER 1.3.6 DOTA CORES SWRIGE PRACE COALCITOR VOLTAGE TRANSFORMER 1.3.7 DOTA CORES SWRIGE PRACE COALCITOR VOLTAGE TRANSFORMER 1.3.7 DOTA CORES SWRIGE PRACE COALCITOR VOLTAGE TRANSFORMER 1.3.7 DOTA CORES SWRIGE PRACE COALCITOR VOLTAGE TRANSFORMER 1.3.8 DOTA COALCITOR SWRIGE PRACE COALCITOR SWRIGE PRACE COALCITOR VOLTAGE TRANSFORMER 1.3.9 SEV, 200-409-200, SKR.A, 2008 SWRIGE PRACE COALCITOR VOLTAGE PRACE VOLTAGE PRACE COALCITOR VOLTAGE PRACE VOLTAGE PR			NOS	15			
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1.3.3 D. WITH SINGLE EARTH SWITCH NOS 2			NOS	9			
1.33 D. NITHOUT EARTH SWITCH							
1.4 145 NV, 6000p\$ 200B; SINGLE PHASE CAPACITOR VOLTAGE TRANSFORMER NOS 5							
1.5 1.5							
1.5 145 NY _2 CORE_SINGLE_PHASE_INT NOS 3							
132 EV Nos Post Insulations 16							
1.93							
1.10							
1.10 36 FV CLASS NOT FOR POWER TRANSFORMER REPOTECTION (RATIO 800-000-200 A) & HAVING TWO CORE (PS CLASS) (NIR ACH POWER TRANSFORMER 132 V SIDE: 1 NO, & 33 KV SIDE: 1 NO) 4							
CLASS N EACH POWER TRANSFORMER 132 NV SIDE: 1 NO, & 33 KV SIDE: 1 NO)							
1.11. 36 FW, 200A, 25KA, ISOLATORS 1.11.1. 20 /UNTH SINGLE PARTH SWITCH 1.11.2 0/UNTH SINGLE PARTH SWITCH 1.11.3 0/UNTH SINGLE PARTH SWITCH 1.11.3 0/UNTH SINGLE PARTH SWITCH 1.11.3 0/UNTHOUT EARTH SWITCH 1.11.3 0/UNTHOUT EARTH SWITCH 1.11.3 13 6FW, JC CORE, SINGLE PHASE, BYT 1.11.3 13 6FW, JC CORE, SINGLE PHASE, BYT 1.12.1 33 6FW, JC CORE, SINGLE PHASE, BYT 1.13.1 38 FW, BUS PORT INSIGHATOR 1.14.1 38 SWI BUS PORT INSIGHATOR 1.15.1 0/UNTH SINGLE PARTH SWITCH SW			NOS	4			
1.11.2 S/J WITH DUTE FARTH SWITCH NOS 9 NOS 5	1.11						
1.11.2 D/A WITH SINGLE EARTH SWITCH			NOS	9			
1.13		D/I WITH SINGLE EARTH SWITCH	NOS	5			
1.14 36KV.1250A.25KA,VACUUM (RCUIT BREAKER WITH SUPPORTING STRUCTURE NOS 8 1.16 SUB STATION SWITCYARD BMK, AC CONSOLE & OTHER MARSHALLING BOXES 1.16.1 BAY MARSHALLING BLOSK (30 Nos 132 kv boy & 04 Nos 33 KV boy) NOS 7 1.16.2 SWITCH YARD AC CONSOLE FOR LIGHTING NOS 2 1.16.3 SWITCH YARD RCCEPTACLE BOARD FOR TIFR OIL FILTERATION NOS 1 1.16.4 SWITCH YARD RCCEPTACLE BOARD FOR WELDING & OTHER EMERGENCY NOS 2 1.16.5 CT, PT & CVT Out Door Console Boxes NOS 17 1.16.6 SECTION OF Ages meter panel. NOS 17 1.17.1 EXCAVATION (Open Cast). This also includes excavation in all types of soil or rocks,backfilling,and disposal of excess earth as per the direction of Ages meter panel. Cum 1150 1.17.1 Hard Soil CVT (OUT DOOR SOIL FOR LIGHT READ FOR AGE AND FOR THE READ F				2			
1.14 36KV.1250A.25KA,VACUUM (RCUIT BREAKER WITH SUPPORTING STRUCTURE NOS 8 1.16 SUB STATION SWITCYARD BMK, AC CONSOLE & OTHER MARSHALLING BOXES 1.16.1 BAY MARSHALLING BLOSK (30 Nos 132 kv boy & 04 Nos 33 KV boy) NOS 7 1.16.2 SWITCH YARD AC CONSOLE FOR LIGHTING NOS 2 1.16.3 SWITCH YARD RCCEPTACLE BOARD FOR TIFR OIL FILTERATION NOS 1 1.16.4 SWITCH YARD RCCEPTACLE BOARD FOR WELDING & OTHER EMERGENCY NOS 2 1.16.5 CT, PT & CVT Out Door Console Boxes NOS 17 1.16.6 SECTION OF Ages meter panel. NOS 17 1.17.1 EXCAVATION (Open Cast). This also includes excavation in all types of soil or rocks,backfilling,and disposal of excess earth as per the direction of Ages meter panel. Cum 1150 1.17.1 Hard Soil CVT (OUT DOOR SOIL FOR LIGHT READ FOR AGE AND FOR THE READ F	1.13	36 KV ,2 CORE,SINGLE PHASE,IVT	NOS	3			
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1.16.1 BAY MARSHALLING KIOSK (03 Nos 132 kt bby & 04 Nos 33 KV bby) 1.16.2 SWITCH YARD AC CONSOLE FOR LIGHTING 1.16.3 SWITCH YARD RECEPTACLE BOARD FOR TFR OIL FILTERATION 1.16.4 SWITCH YARD RECEPTACLE BOARD FOR TREDING & OTHER EMERGENCY 1.16.5 C., TP & CVTO LUD Door Console Boxes NOS 1.16.6 Frection of Apex meter panel. 1.17.1 Normal Soli(SOFT/LOOSE) 1.17.2 EXCAVATION (Open Cast).:This also includes excavation in all types of soil or rocks,backfilling,and disposal of excess earth as per the direction of Enginer in charge. 1.17.1 Normal Soli(SOFT/LOOSE) 1.17.2 Soft Rock 1.17.3 Soft Rock 1.17.4 Hard Rock(Requiring Blasting/Using breaker machinery) 1.17.5 Softs, Regineering, Providing and laying of plain cement concrete (PCC 1:3:6) of grade M10 with approved quality coarse aggregates (Normial size 12mm to 20mm), fine aggregates, cement in for the above column/equipment/marshalling box foundations (5 No. 1.1 & 1.2) column and equipment foundation as blind layer inclusive of labour charges for concrete mixing & curing. This includes supply of all labourers, T&P and dewatering wherever required as per Technical specification and instruction of Engineer in charge. 1.17.6 Open cast foundation for the above column/equipment/marshalling box foundations (5 No. 1.1 & 1.2) with RCC: 1.15.3 (Grade M-20) ,including supply of Labour all materials like cement, coarse and fine aggregates, Shuttering, proper curing of the foundations/concrete and T&P in line with the Technical Specification and as per direction of Engineer in Charge. (without cost of steel)	1.15	33 KV Bus Post Insulators	NOS	15			
1.16.2 SWITCH YARD AC CONSOLE FOR LIGHTING 1.16.3 SWITCH YARD RECEPTACLE BOARD FOR TR OIL FILTERATION 1.16.4 SWITCH YARD RECEPTACLE BOARD FOR WELDING & OTHER EMERGENCY 1.16.5 CT, PT & CVT Out Door Console Boxes 1.16.6 Erection of Apex meter panel. 1.17 EXCAVATION (Open Cast):This also includes excavation in all types of soil or rocks,backfilling,and disposal of excess earth as per the direction of Enginer in charge. 1.17.1 Normal Soil(SOFT/LOOSE) 1.17.2 Hard Soil 1.17.3 Soft Rock 1.17.5 Design, Engineering, Providing and laying of plain cement concrete (PCC 1:3:6) of grade M10 with approved quality coarse aggregates (Nominal size 12mm to 20mm) , fine aggregates, cement in for the above column/equipment/marshalling box foundations (S I No. 1.1 & 1.2) column and equipment foundation as blind layer inclusive of labour charges for concrete mixing & curing. This includes supply of all labourers, T&P and dewatering wherever required as per Technical specification and instruction of Engineer in charge. 1.17.6 Open cast foundation for the above column/equipment/marshalling box foundations (S I No. 1.1 & 1.2) with RCC: 1:1.5:3 (Grade M-20) including supply of labour all materials like cement, coarse and fine aggregates, Switching, proper curing of the foundations/concrete and T&P in line with the Technical Specification and as per direction of Engineer in Charge. (without cost of steel) 1.17.7 Cutting, Bending, Binding Placing in position of steel rod for foundation including cost of binding wire with supply all	1.16	SUB STATION SWITCYARD BMK, AC CONSOLE & OTHER MARSHALLING BOXES					
1.16.3 SWITCH YARD RECEPTACLE BOARD FOR TER OIL FILTERATION NOS 1 1.16.4 SWITCH YARD RECEPTACLE BOARD FOR WELDING & OTHER EMERGENCY NOS 2 1.16.5 CT, PT & CVT Out Door Console Boxes NOS 17 1.16.6 Erection of Apex meter panel. NOS 1 1.17 EXCAVATION (Open Cast). This also includes excavation in all types of soil or rocks,backfilling,and disposal of excess earth as per the direction of Enginer In charge. 1.17.1 Normal Soil(SOFT/LOOSE) Cum 850 1.17.2 Hard Soil Cum 1150 1.17.3 Soft Rock Cum 1150 1.17.4 Hard Rock(Requiring Blasting/Using breaker machinery) 1.17.5 Design, Engineering, Providing and laying of plain cement concrete (PCC 1:3:6) of grade M10 with approved quality coarse aggregates (Nominal size 12mm to 20mm), fine aggregates, cement in for the above column/equipment/marshalling box foundations (S INo. 1.1 & 1.2) column and equipment foundation as blind layer inclusive of labour charges for concrete mixing & curing. This includes supply of all labourers, T&P and dewatering wherever required as per Technical specification and instruction of Engineer in charge. 1.17.6 Open cast foundation for the above column/equipment/marshalling box foundations (S INo. 1.1 & 1.2) with RCC: 1:1.5:3 (Grade M-20), including supply of Labour all materials like cement, coarse and fine aggregates, shuttering, proper curing of the foundations/concrete and T&P in line with the Technical Specification and as per direction of Engineer in charge. (without cost of steel) 1.17.7 Cutting, Bending, Binding Placing in position of steel rod for foundation including cost of binding wire with supply all	1.16.1	BAY MARSHALLING KIOSK (03 Nos 132 kv bay & 04 Nos 33 KV bay)	NOS	7			
1.16.4 SWITCH YARD RECEPTACLE BOARD FOR WELDING & OTHER EMERGENCY 1.16.5 CT, PT & CVT Out Door Console Boxes NOS 1.16.6 Fection of Apex meter panel. NOS 1.17 EXCAVATION (Open Cast):This also includes excavation in all types of soil or rocks,backfilling,and disposal of excess earth as per the direction of Enginer In charge. 1.17.1 Normal Soil(SOFT/LOOSE) L17.2 Hard Soil 1.17.3 Soft Rock 1.17.4 Hard Rock(Requiring Blasting/Using breaker machinery) 1.17.5 Design, Engineering, Providing and laying of plain cement concrete (PCC 1:3:6) of grade M10 with approved quality coarse aggregates (Nominal size 12mm to 20mm) , fine aggregates, cement in for the above column/equipment/marshalling box foundations (S INo. 1.1 & 1.2) column and equipment foundation as blind layer inclusive of labour charges for concrete mixing & curing. This includes supply of all labourers, T&P and dewatering wherever required as per Technical specification and instruction of Engineer In charge. 1.17.6 Open cast foundation for the above column/equipment/marshalling box foundations (S INo. 1.1 & 1.2) with RCC: 1:1.5:3 (Grade M-20) , including supply of Labour all materials like cement, coarse and fine aggregates, extenting, proper curing of the foundations/concrete and T&P in line with the Technical Specification and as per direction of Engineer in Charge. (without cost of steel) 1.17.6 Cutting, Bending, Binding Placing in position of steel rod for foundation including cost of binding wire with supply all	1.16.2	SWITCH YARD AC CONSOLE FOR LIGHTING	NOS	2			
1.16.5 CT, PT & CVT Out Door Console Boxes 1.16.6 Erection of Apex meter panel. 1.17 EXCAVATION (Open Cast). This also includes excavation in all types of soil or rocks, backfilling, and disposal of excess earth as per the direction of Enginer In charge. 1.17.1 Normal Soil(SOFT/LOOSE) 1.17.2 Hard Soil 1.17.3 Soft Rock 1.17.4 Hard Rock(Requiring Blasting/Using breaker machinery) 1.17.5 Design, Engineering, Providing and laying of plain cement concrete (PCC 1:3:6) of grade M10 with approved quality coarse aggregates (Nominal size 12mm to 20mm) , fine aggregates, cement in for the above column/equipment/marshalling box foundations (§ IN o. 1.1 & 1.2) column and equipment foundation as blind layer inclusive of labour charges for concrete mixing & curing. This includes supply of all labourers, T&P and dewatering wherever required as per Technical specification and instruction of Engineer In charge. 1.17.6 Open cast foundation for the above column/equipment/marshalling box foundations (§ IN o. 1.1 & 1.2) with RCC: 1:1.5:3 (Grade M-20) ,including supply of Labour all materials like cement, coarse and fine aggregates, bundations/correte and T&P in line with the Technical Specification and as per direction of Engineer in Charge. (without cost of steel) 1.17.7 Cutting, Bending, Binding Placing in position of steel rod for foundation including cost of binding wire with supply all	1.16.3	SWITCH YARD RECEPTACLE BOARD FOR TFR OIL FILTERATION	NOS	1			
1.16.6 Erection of Apex meter panel. 1.17 EXCAVATION (Open Cast). This also includes excavation in all types of soil or rocks, backfilling, and disposal of excess earth as per the direction of Enginer In charge. 1.17.1 Normal Soil(SOFT/LOOSE) 1.17.2 Hard Soil 1.17.3 Soft Rock Cum 1150 1.17.4 Hard Rock(Requiring Blasting/Using breaker machinery) 1.17.5 Design, Engineering, Providing and laying of plain cement concrete (PCC 1:3:6) of grade M10 with approved quality coarse aggregates (Nominal size 12mm to 20mm) , fine aggregates, cement in for the above column/equipment/marshalling box foundations (SI No. 1.1 & 1.2) column and equipment foundation as blind layer inclusive of labour charges for concrete mixing & curing. This includes supply of all labourers, T&P and dewatering wherever required as per Technical specification and instruction of Engineer In charge. 1.17.6 Open cast foundation for the above column/equipment/marshalling box foundations (SI No. 1.1 & 1.2) with RCC: 1:1.5.3 (Grade M-20), including supply of Labour all materials like cement, coarse and fine aggregates, subtriening, proper curing of the foundations/correte and T&P in line with the Technical Specification and as per direction of Engineer in Charge. (without cost of steel)	1.16.4	SWITCH YARD RECEPTACLE BOARD FOR WELDING & OTHER EMERGENCY	NOS	2			
1.17.1 Normal Soil(SOFT/LOOSE) 1.17.2 Hard Soil 1.17.3 Soft Rock 1.17.4 Hard Rock(Requiring Blasting/Using breaker machinery) Design, Engineering, Providing and laying of plain cement concrete (PCC 1:3:6) of grade M10 with approved quality coarse aggregates (Nominal size 12mm to 20mm) , fine aggregates, cement in for the above column/equipment/marshalling box foundations (S INo. 1.1 & 1.2) column and equipment foundation as blind layer inclusive of labour charges for concrete mixing & curing. This includes supply of all labourers, T&P and dewatering wherever required as per Technical specification and instruction of Engineer In charge. 1.17.6 Open cast foundation for the above column/equipment/marshalling box foundations (SI No. 1.1 & 1.2) with RCC: 1:1.5:3 (Grade M-20), including supply of all ball ballowers, T&P and fine aggregates, shuttering, proper curing of the foundations/concrete and T&P in line with the Technical Specification and as per direction of Engineer in Charge. (without cost of steel)	1.16.5	CT, PT & CVT Out Door Console Boxes	NOS	17			
excess earth as per the direction of Enginer In charge. 1.17.1 Normal Soil(SOFT/LOOSE) Cum 850 1.17.2 Hard Soil Cum 1150 1.17.3 Soft Rock Cum 1900 Soft Rock 1.17.4 Hard Rock(Requiring Blasting/Using breaker machinery) Design, Engineering, Providing and laying of plain cement concrete (PCC 1:3:6) of grade M10 with approved quality coarse aggregates (Nominal size 12mm to 20mm) , fine aggregates, cement in for the above column/equipment/marshalling box foundations { SI No. 1.1 & 1.2} column and equipment foundation as blind layer inclusive of labour charges for concrete mixing & curing. This includes supply of all labourers, T&P and dewatering wherever required as per Technical specification and instruction of Engineer in Charge. 1.17.6 Open cast foundation for the above column/equipment/marshalling box foundations { SI No. 1.1 & 1.2} with RCC: 1:1.5:3 (Grade M-20) including supply of Labour all materials like cement, coarse and fine aggregates, shuttering, proper curing of the foundations/concrete and T&P in line with the Technical Specification and as per direction of Engineer in Charge. (without cost of steel) 1.17.7 Cutting, Bending, Binding Placing in position of steel rod for foundation including cost of binding wire with supply all	1.16.6	Erection of Apex meter panel.	NOS	1			
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1:1.5:3 (Grade M-20) ,including supply of Labour all materials like cement, coarse and fine aggregates, shuttering, proper curing of the foundations/concrete and T&P in line with the Techinical Specification and as per direction of Engineer in Charge. (without cost of steel) 1.17.7 Cutting, Bending, Binding Placing in position of steel rod for foundation including cost of binding wire with supply all							
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and as per direction of Engineer in Charge. (without cost of steel) 1.17.7 Cutting, Bending, Binding Placing in position of steel rod for foundation including cost of binding wire with supply all		, , , , , , , , , , , , , , , , , , , ,	_				
1.17.7 Cutting, Bending, Binding Placing in position of steel rod for foundation including cost of binding wire with supply all			Cum	1656			
		and as per direction of Engineer in Charge. (without cost of steel)					
		Continue Describer Discriber Describer and the office of the latest the continue of the contin			1	1	1
	1.17.7		MT	60			
		SIZE OT FOO (TATA) KAIL/ SAII MAKE)	1411				

1.17.0	Fabrication (Cutting and different since angles) flate duling of help Visited Property of Claude		ı			I	
1.17.8	Fabrication (Cutting and different sizes angles/ flats, drilling of holes) including cost of GI angle, consumable, labour,	MT	5				
	T&P and other anccillary item.	IVII	,		1		1
2	Cable Trenches: Design, engineering, and construction of RCC cable trenches and all associated works for cable						
	trench and cable trench crossings as per technical specifications and approved drawings and as per direction of the						
	Engineer in Charge.						
	(1) This also includes excavation in all types of soil or rocks, back filling, and disposal of excess earth as per the						
	direction of Engineer In charge.						
	g g						
	(2) Design, Engineering, Providing and laying of plain cement concrete (PCC 1:3:6) of grade M10 with approved						
	quality coarse aggregates (Nominal size 12mm to 20mm) , fine aggregates, cement in cable trench as blind layer						
	inclusive of labour charges for concrete mixing & curing. This includes supply of all labourers, T&P and dewatering						
	wherever required as per Technical specification and instruction of Engineer In charge.						
	(3) Open cast foundation for the cable trench with RCC: 1:1.5:3 (Grade M-20 Nominal mixing), including supply of						
	Labour all materials like MS Rod,Cement, coarse and fine aggregates,shuttering,cutting,bending,binding of M.S.Rod						
	including supply of binding wire proper curing of the foundations/concrete and T&P in line with the Specification						
	and as per direction of Engineer in Charge.						
	(4) Fly ash Brickwork with fly ash Brick ,plastering (1:6 Ratio) & curing, wherever required including the supply of						
	labour,material, cement, etc.						
	(5)Supply,fabrication & Fixing of MS Angle(G.I) for cable tray support (as per specification). The cable tray support						
	frame shall be pre fabricated GI angle as per requirement and to be welded with the plate fixed on the trench wall						
	for better rigidity. The plate (6mm) fixed on the wall are also to be welded with the MS rods provided for the trench						
	wall before concreting.						
	(6) Precast of RCC covers (1:1.5:3) and its fixing on the cable trench as per spec and instruction of Engg. In Charge.						
	(7) CABLE TRENCHES INSIDE THE CONTROL ROOM SHALL BE COVERED WITH M.S CHEQUERED PLATE(Duly painted						
	as per instruction of Engg in charge) INCLUDING STANDARD SUPPORT STAND (HD Galvanised (M.S JOIST						
	,CHANNEL,ANGLE)}.						
2.1	Section 1-1	Mtrs	330				
2.2	Section 2- 2	Mtrs	230				
2.3	Section 3-3	Mtrs	330				
2.4	Section 4-4	Mtrs	530				
3	Rain water harvesting system as per Technical specification and approval of drawing and as per the direction of the	Nos	4		1		1
	Engineer in charge.	1403	4				
4	Cable trench crossing:Design,engineering,construction including supply of labour,materials,cement,reinforcement						
	steel,formwork etc,and all associated works for construction of trench crossing as per technical specification and						
	approved drawing.(Road crossing)						
4.1	Section 1-1	Nos	1				
4.2	Section 2- 2	Nos	1				
4.3	Section 3-3	Nos	3				
5	Boundary wall: Soil investigation, Design, engineering, procurement of material, labour including all associated works for construction of boundary-wall along the property line of the sub-station as per technical specification and instruction of the						
	Engineer in Charge. (the size of the Fly ash Bricks shall be 250mm using fly ash Fly ash Brick & having compressive strength with						
	75kg/cm2). This also includes excavation in all types of soil or rocks, backfilling, and disposal of excess earth as per the direction						
1	of Engineer In charge.(**APPROXIMATE LENGHTH OF THE BOUNDARY WALL) and approved drawing. Appox.						
1							
5.1	1						
3.1	Appox length of the boundary walls (Brick works rested on RCC Ream and RCC Column & footings as per TS) in mtre			1		1	1
	Appox length of the boundary walls(Brick works rested on RCC Beam and RCC Column & footings as per TS) in mtrs	RM	1100				
5.2	Appox length of the boundary walls(Brick works rested on RCC Beam and RCC Column & footings as per TS) in mtrs Appox length of the Boundary wall rested on pile foundation: size of the pile shall be 375mm dia & depth of	RM	1100				
	Appox length of the Boundary wall rested on pile foundation:. size of the pile shall be 375mm dia & depth of	RM RM	100				
	Appox length of the Boundary wall rested on pile foundation:. size of the pile shall be 375mm dia & depth of 5000mm minimum at an interval of 3000mm having 300x300 Grade beam on the pile & Brick works rested on RCC						
	Appox length of the Boundary wall rested on pile foundation:. size of the pile shall be 375mm dia & depth of 5000mm minimum at an interval of 3000mm having 300x300 Grade beam on the pile & Brick works rested on RCC						
5.2	Appox length of the Boundary wall rested on pile foundation: size of the pile shall be 375mm dia & depth of 5000mm minimum at an interval of 3000mm having 300x300 Grade beam on the pile & Brick works rested on RCC Beam and RCC Columns & footings as per TS Contour Survey & Leveling, Back Filling:						
5.2	Appox length of the Boundary wall rested on pile foundation: size of the pile shall be 375mm dia & depth of 5000mm minimum at an interval of 3000mm having 300x300 Grade beam on the pile & Brick works rested on RCC Beam and RCC Columns & footings as per TS Contour Survey & Leveling, Back Filling: Contour survey and furnishing contour map including supply of all materials, Labour and T&P	RM Sq. Mtr	100				
5.2 6 6.1	Appox length of the Boundary wall rested on pile foundation: size of the pile shall be 375mm dia & depth of 5000mm minimum at an interval of 3000mm having 300x300 Grade beam on the pile & Brick works rested on RCC Beam and RCC Columns & footings as per TS Contour Survey & Leveling, Back Filling: Contour survey and furnishing contour map including supply of all materials, Labour and T&P Soil investigation: Supply of labour, T&P and other necessary arrangements for Soil investigation/testing of the	RM Sq. Mtr	100				
5.2 6 6.1	Appox length of the Boundary wall rested on pile foundation: size of the pile shall be 375mm dia & depth of 5000mm minimum at an interval of 3000mm having 300x300 Grade beam on the pile & Brick works rested on RCC Beam and RCC Columns & footings as per TS Contour Survey & Leveling, Back Filling: Contour survey and furnishing contour map including supply of all materials, Labour and T&P Soil investigation: Supply of labour,T&Pand other necessary arrangements for Soil investigation/testing of the Switchyard,control Room, transformer, Quarters area etc.as per the site requirement,Technical specification &	RM Sq. Mtr	100 20692				
5.2 6 6.1	Appox length of the Boundary wall rested on pile foundation: size of the pile shall be 375mm dia & depth of 5000mm minimum at an interval of 3000mm having 300x300 Grade beam on the pile & Brick works rested on RCC Beam and RCC Columns & footings as per TS Contour Survey & Leveling, Back Filling: Contour survey and furnishing contour map including supply of all materials, Labour and T&P Soil investigation: Supply of labour, T&P and other necessary arrangements for Soil investigation/testing of the	RM Sq. Mtr	100 20692				

7.1	LEVELLING OF S/S AREA:Providing, neatly dressing up and levelling of substation area including switchyard area to a required level as decided by the Engineer in Charge, the work includes removal, clearing of the entire area from vegetation, trees, bushes, uprooting of plants and disposal of surplus earth and unusable material from the site by means of any mechanical transport, if required as per direction of the Project In charge, with all labours, tools, tackles and plants complete as per approved drawing and specification. This also includes excavation in all type of soils or rocks, back filling and disposal of excess earth or rocks to make the area to a level for construction as per scope and as per approved drawing and specification.				
7.1.1	CUTTING of substation area				
7.1.1.1	[i]Soft/loose soil	Cum	9320		
7.1.1.2	[ii]Dense/ Compact soil	Cum	8300		
7.1.2	FILLING of substation area with borrowed earth with supply of all labour, T & P.				
7.1.2.1	Beyond 100mtr lead	Cum	10000		
8	CONTROL ROOM BUILDING: Design, engineering and construction of switch yard buildings including the piling, the cost of material, supply of all labour, T&P, cement, reinforcement- steel, form work and excavation as per the approved drawing and technical specification (The RCC structure frame should be in the ratio 1:1.5:3). This also includes excavation in all types of soil or rocks,back filling,and disposal of excess earth as per the direction of Engineer In charge. As per approved drawings and specification. CONTROL ROOM BUILDING: (one building): A) Area of the Ground floor with portico at front side, stair case to first floor and top of the building. The details of rooms to be provided are as per the Tech spec. B) Area of the first floor. The details of rooms to be provided are as per the Tech spec. Size of Ground floor. Nos./ area of ground floor/area of first floor . 01 No/ Area of Ground Floor : 42 mtrsX13 mtrs (546 sq mtrs). & Area of first floor 21 mtrsX13mtrs (273 sq mtrs), Only Fly ash brick is to used for brick work. One no. room shall be used for ladies rest room & should have attached toilet facilty meant for ladies staff is to be included in ground floor of the Control room building.				
8.1	RCC volume including MS rods(including column ,Beams and roofs etc) as per technical spec & approved drawings.	Lot	1		
8.2	Fly ash brick masonry work in cement sand mortar 1: 6 with Fly ash bricks of class designation 75 as per technical spec & approved drawings.	Lot	1		
8.3	Flooring with double charged vitrified tiles with dado in all the rooms,Bath and toilets shall be provided with anti skid ceramic tiles(wall of the same also to be provided with ceramic tiles),Acid proof industrial tiles to be provided on the floor and wall of the battery room as per technical spec & approved drawings.	Lot	1		
8.4	External and internal wall (External (18mm thk) and internal (12 mm thk) wall and ceiling plastering as per technical spec mentioned in the civil section) and Building internal & external & ceiling paintings as per technical spec mentioned in the civil section. The left over portion of walls and ceiling of Battery room shall be acid proof paints as per specification & approved drawings.	Lot	1		
8.5	Provision of ceiling in the control room area as per specification mentioned in the civil section & approved drawings.	Lot	1		
8.6	Doors and windows shall be of sliding type with locking facility and shall be of aluminium with glaze of 6mm & windows shall have aluminium grills. As per technical spec & approved drawing.	Lot	1		
8.7	Provision of PHD and other fittings(in Toilets,wash room,overhead water tank of adequate capacity etc) of reputed make,provision of rain water discharge pipes at different locations and etc as per requirement and approved drawing. There shall be septic tank and soak pit of required capacity including complete sewage system as per approved drawing & technical specification & as per instruction of Engg- in-Charge. It includes supply of all types of materials of reputed make, labour etc to complete the work. Toilets for Gents & Ladies to be provided including all good quality reputed fittings as per technoical specification. The toilets & wash room shall have antiskid floor tiles & wall tiles of seramic upto height of 8 feet.	Lot	1		
8.8	Internal concealed wiring (including supply of flexible copper FRP 1.1 KV PVC wire,conduits & its accessories,modular type switches & switch board,Junction boxes with required MCB & Earth leakage detector switcephear etc),supply & fixing of lighting fixtures & switchegear, ceiling fans of 1400 sweep and regulators (including supply), exhaust fan (including supply), Ercetion of all Lighting FIXTURES & LAMPS (LED), D.C emergency lighting (including supply), as per technical specification and approved drawing and direction of Engineer In charge.	Lot	1		
8.9	Supply, fitting and fixing of stainless steel pf 304 grade in hand railing using 50mm dia of 2mm thick circular pipe with balustrade of size 32mmx32mmx32mm @0.90mtr C/C and stainless square pipe bracing of size 32mmx32mmx32mm in three rows in staincase as per approved design and specification, buffing.polishing etc with cost, conveyance, taxes of all materials, labour, T&P etc required for the complete in all respect	Lot	1		
8.10 9	Provision of smoke and fire detection system of the building.	Lot	1		
9	Roads: Design, construction of roads and walkways/ shoulders within sub-station(Switch yard area,approach road, control room area, main gate to the switch yard gate etc) as per specification, layout and approved drawings complete. This also includes excavation in all types of soil or rocks, back filling, and disposal of excess earth as per the direction of Enginer In charge. Provision of drains on both the side of the roads for easy discharge of rain water.(Refer the indicative drawing of s/s layout)				
9.1	3.75 mtrs Concrete road with shoulder at both the side as per technical specification indicated in the civil section & shall have drain on both side of the road.	MTRS	600		

			1			
9.2	7 mtrs wide Concrete roads with shoulder as per specification indicated in the civil section. & shall have drain on both side of the road. 7 Mtrs wide road inside the switchyard to be connected to switch yard main gate.	MTRS	370			
10	Drainage system:Collection of rainfall data, Design, construction of storm water drainage scheme, road-culverts,					
	and drains crossing cable trenches etc. as per specification and approved drawing. This also includes excavation in all					
	types of soil or rocks,backfilling,and disposal of excess earth as per the direction of Enginer In charge.All the					
	switcyard bays , roads water drainage shall be connected to the mainsurface drain. As per approved drawing and					
	specification.		4			
10.1	Storm water drain	MTRS	1			
10.2	Road-culverts, drain crossings	MTRS	1			
10.3 11	Cable trench crossing	MTRS	1			
11	Foundations for transformers: Design, engineering, supply of labour, material, equipments and construction of					
	Auto-transformer/Transformer foundation including piling if any, all associated works, rail tracks, jacking					
	pads, anchor block RCC and PCC, miscellaneous structural steel including oil collection pits, MS grating(if required),					
	gravel filling, and other items etc. not mentioned herein, but specifically required for the completion of the work					
	as per technical specification and approved drawing. (Rate shall be inclusive of cement, reinforcement steel,					
	angles, flats and form work etc.)(all cement concrete shall have RCC ratio 1:1.5:3). Transformer RCC foundation and					
	Rail Track should be extended upto the approaching road (However,the height of RCC foundation beyond					
	transformer main plinth area should be same as height of concrete road as per item under 7 mtrs concrete road).					
	This also includes excavation in all types of soil or rocks, back filling, and disposal of excess earth as per the direction					
	of Engineer In charge.					
	1. 132/33 KV 40 MVA Transformer (2 Nos)					
11.1	40 MVA, 132/ 33kV transformers					
11.1	a) Overall dimension of transformer(appox)					
	Length:7200 mmX Width 6000 mmX Height 6200 mm	Nos	2			
	b) Total weight with oil and tank: 97.5 MT (appox)					
11.2	OIL SUMP PIT:Oil collection (from transformers)sump pit with provision of pump(5 HP, with auto level control,					
	including cabling, fixing of control gear)as per CIGRE. As per spec and approved drawing.					
	>Oil capacity of each Transformer in ltrs appox.	Nos	1			
	a) 40 MVA,132/33 KV: 26500 ltrs.					
12	Dec hafter site and the Decidion and the Hills are set and the site and the set and the se					
12	PCC before site surfacing: Providing and supplying all labour, material, equipments etc. required for proper leveling of earth after erection of structures and equipments and proper compaction by using roller of adequate					
	capacity(minimum 3 Ton capacity) with water sprinkling of switch yard area. After proper leveling of the switch yard					
	area (after anti-weed treatment), spreading of plain cement concrete with mixing ratio 1:3:6 (M10) and maintaining					
	proper sloping for easy discharge of storm water having concrete thickness of 75 mm. including rolling, dressing,	CUM	242			
	compacting, the area. As per technical specification and approved drawing, and as per the instruction of the Engg-in-	CUM	312			
	Charge. This also includes excavation in all types of soil or rocks, back-filling, and disposal of excess earth as per the					
	direction of Engineer in charge and approved drawing. (Switch yard area)					
13	Metal Spreading: Providing supplying and laying two layers of machine crushed metals (gravel) fill, the first layer				-	
13	after compaction shall make minimum 50 mm thickness coarse/ layer of 20 mm nominal size consolidated/					
	compacted and (by using roller as specified in the specification). A final layer of 50 mm thickness of machine crushed					
	20 mm nominal size of metals(gravel) above the first layer of 50 mm thickness and as per the technical specification	CUM	410			
	and instruction of Engineer in charge above the PCC. The total compacted thickness of the metals(20 mm Nominal)	COIVI	410			
	100mm above the PCC.					
14	PROVISION OF PLANTATIONS: Provision of plantation of 100 nos fruit bearing plants and 100 nos decorative plants					
	at different locations, a garden in front of the control room including supply of plants, soil treatment and its		_			
	plantation including materials, labour and T&P.As per the instruction of Engineer in Charge and specification.	LOT	1			
					1	
15	STONE PITCHING & TOE WALL:Stone pitching including making of toe walls both at top and bottom, including					
	surface drain both at top and bottom and partition wall in every 10 mtrs by using boulders and RR masonry walls					
	respectively. This also includes excavation in all types of soil or rocks, back filling, and disposal of excess earth and	LOT	1			
	supply of materials and labour as per the direction of Engineer In charge and as per approved drawing and					
	specification.					
16	RETAINING WALL: Construction of RCC retaining wall below the FGL and from NSL as per the site condition to					
	sustain the earth pressure. The depth and length of RCC wall shall be designed as per site requirement. This					
	includes excavation in all type of soil, PCC(1:3:6), & RCC (1:1.5:3) with supply of steel(Fe-500), cement ,sand etc.	CUM	100			
	including cutting, bending, binding, backfilling in layers after concreting for soil compaction and also supply of other					
	required materials and labour . The work shall be executed as per the approved design , drawing as per direction					
	of Engineer In charge .		I	1	I	I I

17	Switch yard fencing: Providing and fixing of G.I Goat mesh (2.5 mm dia) fencing(the posts and links shall be of HD Galvanized) in switch yard and other areas of the substation with a total fence height complete as per specification and approved drawings, and as required under the safety regulation of local, state and central government bodies and as per instruction of the Engineer-in-Charge.(The PCC work for grouting the post shall be 1:2:4 and a continuous Brick masonry work with ratio 1:5 and cement pointing of the joints, for the fencing up to a height from the finished ground level). This also includes excavation in all types of soil or rocks, back filling, and disposal of excess earth as per the direction of Engineer In charge. The earthing of the fencing as per specification.	MTR-RUN	335		
18	Fire wall: Design, engineering, procurement of labour, material including all associated works for construction of fire-walls as per technical specification and approved drawings(column shall be RCC ratio1:1.5:3 and the walls are of fire resistant bricks). This also includes excavation in all types of soil or rocks, back filling, and disposal of excess earth as per the direction of Engineer In charge. As per approved drawing and specification. Painting of the walls as per direction of the Site In charge. (If Transformers are adjacent).	NO.	1		
19	Any other civil work to be included in the schedule by the Bidder if required essential for successful completion of project, including supply of labour, material, cement reinforcement steel, form work etc. Bidder shall also quote the unit rate for the following items of works.(Rate shall be inclusive of supply of labour, material, cement, reinforcement steel, form work etc.)				
19.1	Brick masonry work in cement sand mortar 1: 6 with bricks of class designation 75.	Cu.m.	1		
19.2	12 mm thick plaster in cement sand mortar (1:6).	Sq.m.	1		
19.3	Cutting, bending, binding (supply of binding wires) and fixing of reinforcement (including supply of reinforcement).	M.T.	1		
19.4	Fabrication and welding (if any): Fabrication (cutting of different size angles flats drilling of holes including cost of consumable labour T& P and steel	M.T.	1		
20	Construction of township/colony (residential quarters) for staff and employees of the employer. Layout, design, survey, leveling, site dressing and clearing of the area, soil investigation, excavation, piling, PCC, RCC, brick work, plastering ,flooring(flooring shall be with vitrified tiles of reputed make with a dado of minches),fixing of doors windows and window grills, including all labour material like cement, sand aggregate, bricks, reinforcements etc with all bought items required for completion of the quarters as per approved construction drawings with all facilities for supply of drinking water. The outer paint shall be applied with weather coat synthetic enamel paint as per the standard practice of application and the inner paint shall be applied with distemper of approved quality as per the instruction and approval of the same by OPTCL. This also includes excavation in all types of soil or rocks, (piling if required), back filling, and disposal of excess earth as per the direction of Engineer In charge. Internal electrical wiring with fixing of light fixtures and fans with electronic regulators and exhaust fans as per technical specification and approved drawing. Construction of over head RCC tank(1000 Itrs capacity one for each quarters), sewerage disposal and connection with main sewerage/ septic tank and soak pit, storm water and surface drainage, culverts, roads, with suitable radius on the curves and its connection with main road the substation, street lighting, internal lighting, internal plumbing and sanitation including internal/external finishing of quarters etc. required for completion of the town ship.				

22.1	IIION Anno Contra Anno Andreigh and Contra C					
20.1	"D" type Quarter As per technical specification (one no. two storied flat. Each flat shall be with 1 no quarters on ground floor & 1 No quarters on 1st floor).					
20.1.1	"D" type Quarter As per technical specification: 1 no quarter on ground floor & the size of quarter plinth area shall be 120 Sq Mtrs(appox)	SQ Mtr	120			
20.1.2	"D" type Quarter As per technical specification: 1 no quarter on first floor & the size of quarter plinth area shall be 120 Sq Mtrs(appox)	SQ Mtr	120			
20.2	"E" type Quarter As per technical specification (one no. two storied flat. Each flat shall be with 2 nos quarters on ground floor & 2 Nos quarters on 1st floor). (There shall be 4 Nos quarters to be accommodated in one flat as E1, E2, E3 & E4)					
20.2.1	"E" type Quarter As per technical specification: 2 nos quarters on ground floor & the quarters to be accommodated in ground floor E1 & E2 (Each quarter size plinth area shall be 73 Sq Mtrs(appox)	SQ Mtr	146			
20.2.2	"E" type Quarter As per technical specification: 2 nos quarters on first floor & the quarters to be accommodated in First floor E3 & E4(Each quarter size shall be 73 Sq Mtrs(appox)	SQ Mtr	146			
21	MAIN & SWITCH YARD GATES: Design, engineering, procurement of labour, material including all associated works for construction and fixing of of a main gate and one no. switch yard gates with men gates as per specification and approved drawing. This also includes excavation in all types of soil or rocks, backfilling, and disposal of excess earth as per the direction of Engineer In charge. Provision of gate lights (Post top lantern type) on each pillar of the gate. It includes supply & fixing of light fixtures including LED lamp, LV XLPE cables, switchgear etc required to complete works as per specification and approved drawings					
21.1	MAIN GATE	Nos.	1			
21.2	WICKET GATE NEAR MAIN GATE	Nos.	1		Ì	
21.3	SWITCH YARD GATE(ON BOTH SIDES OF 7MTRS. CONCRETE ROAD OF SWITCHYARD)	Nos.	2			
21.4	WICKET GATE NEAR SWITCHYARD	Nos.	1			
22	COLOUR CODING, BAY MARKING Etc:Design, engineering, procurement of labour, material including all associated works for the followings. This should be as per direction of site in charge. a)Color coding (red,Yellow & Blue) for equipments,Bus gantry &column of entire switch yard. Good quality weather proof sticker may be used for identification. b)Each bay should be identified with the help of bay marker sign board, suitably grouted. MS sign board with stand to be installed. Proper painting and lettering to be done of the entire switch yard area.	Lot	1			
23	STATION TRANSFORMER:Design, engineering, procurement of labour,material including all associated works for construction of foundation and DP structure for station transformers 33/0.415 KV,250 KVA STN TRANSFORMER as per approved drawing and specification.33 KV AB Switch(600A),HG Fuse, DP Structure & Angles (duly painted),Chanels, Plinth for erection of the transformer, including fixing and laying of (insulators,surge arresters,XLPE armoured power cables3.5 core 300 sq mm,LT out door kiosk near transformers and other accessories for complete installation of transformer as per standard) and instruction of Engineer In charge. As per the specification and approved drawing.	NOS	2			
24	SECURITY SHED & CUM VISITOR ROOM AND VEHICLE PARKING SHED: Design, engineering, procurement of labour, material including all associated works for construction of Security shed near main gate, watch tower shed at the corners of switch yard as per the approved drawing and instruction of Engineer in charge. This also includes excavation in all types of soil or rocks, back filling, and disposal of excess earth as per the direction of Engineer In charge. Internal electrification including supply of lighting fixtures, fan with regulators and provision of incoming AC supply from the main ACDB/outdoor kiosks installed for street light or colony quarters. Also includes painting of the building (in side and out side) as per recommended for colony building in the specification. (* REMARKS : FOR SUPPLY OF ALL THE CABLES AS INDICATED ARE COVERED IN THE supply))					
24.1	SECURITY SHED: The size of the security shed shall be 3.5 mtrsX5mtrs and height of 3.5mtrs RCC roof, Fly ash Brick masonary works, plastering and painting and fixing of MS doors and windows. Internal concealed wiring (including supply of flexible copper FRP 1.1 KV PVC wire, conduits & its accessories, modular type switches & switch board, Junction boxes with required MCB & Earth leakage detector switcehear etc), fixing of lighting fixtures with lamps(LED Type) & switchgear, ceiling fans of 1400 sweep and regulators(including supply) and provision of incoming AC supply from the main ACDB/outdoor klosks installed for street light or colony quarters. Also includes painting of the building (in side and out side) as per recommended for colony building in the specification. (* REMARKS: FOR SUPPLY OF ALL THE CABLES AS INDICATED ARE COVERED IN THE supply)}		1			
24.2	VEHICLE PARKING SHED: The size of the parking area shall be 15mtrs X 15 mtrs, out of the entire area there shall be provision of shed for 5 mtrs X 15 mtrs and rest of the area shall be without shed. Roof of the parking place shall be RCC & Parking shed shall be as per TS-E6-Civil & as per the direction of Engineer in Charge.	Nos	1	 		

25	BORE WELL & PUMP HOUSE:Design, engineering, procurement of labour, material including all associated works for construction of two nos. bore wells for control room building including switch yard and colony quarters as per specification and approved drawing and instruction of Engineer in charge. This includes supply and fixing and commissioning of two nos 5 HP submersible water pump with starter and other protection. Construction of two nos pump house at ideal location for fixing of the electrical starter units. The pump house be of RCC roof and having walls of Fly ash Brick masonry and plastering and painting with MS door having locking arrangement & Internal concealed wiring and lighting (including supply of flexible copper FRP 1.1 KV PVC wire,conduits & its accessories,modular type switches & switch board, fixing of lighting fixtures with lamps(LED Type)). The size of the room shall be 2.5mtrsX2.5 mtrs having height of 3 mtrs. as per approved drawing and specification. There shall be approach road to the pump house. This includes supply of materials,labours and T&P & excavation of altype of soils including rock and disposal of excess materials as per instruction of Engineer In charge Supply & laying of LV XLPE 3.5CX 35 sq mm cable from ACDB to pump house, control gear & earthing of the system etc to complete the scheme as per approved drawing & instruction of Engineer-in charge.	NOS	2		
26	STORE SHED:Design, engineering, procurement of labour, material including all associated works for construction of store shed as per specification and approved drawing. This also includes excavation in all types of soil or rocks,back filling,and disposal of excess earth as per the specification,approved drawing and direction of Engineer In charge. One no store shed of floor size 10X10 mtr having Fly ash Brick walls and plastering with RCC roof. The flooring shall be of 75 mm thickness PCC (mix ratio1:2:4) over RR masonry works (as per standard practice of flooring). Provision of adequate nos of MS racks (proper paintings also to be done as per the direction of site in charge) for keeping the spare materials. The height of the shed shall be 4mtrs above the plinth. Internal concealed wiring (including supply of flexible copper FRP 1.1 KV PVC wire,conduits & its accessories,modular type switches & switch board,Junction boxes with required MCB & Earth leakage detector switcghear etc),fixing of lighting fixtures & switchgear ,ceiling fans of 1400 sweep and regulators(including supply) and provision of incoming AC supply from the main ACDB/outdoor kiosks installed for street light or colony quarters. Also includes painting of the building (in side and out side) as per recommended for colony building in the specification. (* REMARKS: FOR SUPPLY OF ALL THE CABLES AS INDICATED ARE COVERED IN THE supply))	Lot	1		
27	PLATFORM FOR STORING EQUIMENTS:Design, engineering, procurement of labour, material including all associated works for construction of a platform for storing of bushings,Instrument transformers etc, as per specification and approved drawing. This also includes excavation in all types of soil or rocks,backfilling,and disposal of excess earth as per the specification,approved drawing and direction of Engineer In charge. One no platform outside the store shed RR masonry (compacted) with PCC at the top for storing the transformer bushings, Instrument transformers, transformer oil drums etc. The floor size of the platform shall be 15mtrX10 mtr with Galvanised Corrugated Sheet (Tata Make) top cover and associated MS supporting structure duly painted.	Lot	1		
28	PROVISION OF RAMP:Design, engineering, procurement of labour, material including all associated works for construction and fixing of Ramp as per specification and approved drawing. This also includes excavation in all types of soil or rocks,back filling,and disposal of excess earth as per the direction of Engineer In charge. Provision of a ramp of adequate size and capable of for loading and unloading of the materials of 5 Ton capacity from the lorry or to the lorry near the store shed. Adequate size of MS frames and RCC (1:1.5:3) based ramps to be used for the said purpose.	Lot	1		
29	Anti-Weed Treatment Supply of labour,T&P,Chemicals and other necessary arrangements for anti-weed treat of the switch-yard	Sq.Mtrs			
29.1	areas,controlroom etc. as per the instruction of Engineer-in-Charge.	545	5000		
	TOTAL OF SUBSTATION (Civil Work)(PART-B) TOTAL OF ERECTION OF SUBSTATION (Electrical Work) & (Civil Work) -Schedule-4-ss (to Schedule No. 6 Grand				
	Summary)				
1 Casalforn				ne of Bidder:	
1 Specify curr	ency in accordance with specifications in Bid Data Sheet under ITB 19.1 in Single-Stage Bid, or ITB 34.1 in Two-Stage Bi	a.			

NAME OF THE WORK:- Design, Supply and Installation of Sub-Stations & Transmission Lines for Construction of 2X20 MVA-132/33 KV Sub-station at Gondia and associated 132 KV D/C Lilo line from TTPS-DUBURI 132 KV Line (Line length-25.304 Km approximately) in Odisha State of India under PACKAGE-6 Under Japan International Cooperation Agency (JICA)'s ODA Loan.

Loan Agreement No: [ID-P245] - FB No: [CPC/JICA/ICB/06/17-18/......]- Reference Identification No[OPTCL/JICA/PKG-6]

		o. [CPC/JICA/ICB	/06/17-18/]-		Reference fue	entification NotOP	ICL/JICA/PRG-0]
	e No. 4. Installation and Other Services	T					
NAME (OF THE BIDDER						
			ing 34	Unit	Price ¹	Tota	Price ¹
SI. No.	DESCRIPTION OF ITEMS(SCHEDULE-4-line) ERECTION,TESTING & COMMISSIONING OF FOLLOWING EQUIPMENTS ALONG WITH CIVIL WORKS (As per Technical Specification)	UNIT	132kV LILO line from existing 132kV TTPS-Duburi to proposed GONDIA S/S (Approx. Line length- 25.034 km)	Foreign Currency Portion	Local Currency Portion	Foreign Currency Portion	Local Currency Portio
			1	2	3	(1x2)	(1x3)
PART A 1.0	ERECTION, TESTING & COMMISSIONING of Following tested Lattice type Galvanized					9	
	steel tangent / Angle tower without stubs and cleats including different type of G.I HT Nuts & Bolts, washer, spring washer for the above type towers ,hanger and all accessories, tower super structure complete with tightening, punching of bolts including step bolts. All other left out portion of the bolts above bottom cross arm shall be riveted by using suitable hammer. Painting of black bituminous paints three coats shall be provided up to a height of 500mm above the cooping legs & bracing members. All Erection should confirm to the Technical Specification laid there in the Tender Specification.						
1.1	PA TYPE (SUSPENSION) TOWERS (Nominal unit weight 3.430 MT) (73nos)	MT	250.390				
1.1.1	+3 EXTENSION (Nominal unit weight 0.611 MT) (06 nos)	MT	3.666				
1.1.2	+6 EXTENSION (Nominal unit weight 1.349 MT) (0 nos)	MT	0.000				
1.2	PB TYPE (30 deg ANGLE) TOWERS (Nominal unit weight 4.973 MT) (10nos)	MT	49.730				
1.2.1	+3 EXTENSION (Nominal unit weight 1.018 MT) (0 Nos)	MT	0.000				
1.2.2	+6 EXTENSION (Nominal unit weight 2.104 MT) (0 nos)	MT	0.000				
1.3	PC TYPE (60 deg ANGLE) TOWERS (Nominal unit weight6.214MT) (9 NOS.)	MT	55.926				
1.3.1	+3 EXTENSION (Nominal unit weight 1.119 MT) (2 nos)	MT	2.238				
1.3.2	+6 EXTENSION (Nominal unit weight 2.342 MT) (0 nos)	MT	0.000				
1.4	WEIGHT OF THE STRUCTURES	MT	361.950				
1.5	Weight of different type G.I Nuts and Bolts[including 5% extra]	MT	29.400				
1.3.3	Fixing of Templates						
1.4	PA (Nominal unit weight 0.665 MT)(73 Nos.)	MT	48.545				
1.5	PB (Nominal unit weight 0.602MT)(10 Nos.)	MT	6.020				

1.5.1	PC (Nominal unit weight 0.904MT)(9 Nos.)	MT	8.136		
1.6	Erection of the following tower accessories as per technical specification and as directed by the engineer-in charge.				
1.6.1	EARTHING DEVICE	Nos.	92		
1.6.2	DANGER BOARD	Nos.	92		
1.6.3	NUMBER PLATE	Sets	92		
1.6.4	PHASE PLATE	Sets	552		
1.6.5	BIRD GUARD	Sets	438		
1.6.6	ANTICLIMBING DEVICE	Nos.	92		
1.6.7	CIRCUIT PLATE	Nos.	184		
2	Hoisting and fixing of insulators with required accessories, paying out of conductor				
	jointing, stringing, sagging & Jumpering etc. of power conductor in the proposed,				
	lines with all required accessories including scaffolding for 33 KV,11 KV, LT , P&T				
	lines, roads and using own required T&P and compression jointing machines etc.				
	with 1.5% provision for Sag & Wastage and as per the direction of Engineer in charge.				
2.1	DOLIDLE CIDCUIT (ACCE DANITHED SIX DOWLED CONDCTOR)	Pouto (I/m)	25.304		
3.0	DOUBLE CIRCUIT (ACSR PANTHER,SIX POWER CONDCTOR) Erection of OPGW fibre Optic Cable for speech, data & protection	Route (Km)	25.304		
3.0	Erection of 48Fibre(DWSM)OPGW fibre Optic along with hardwares sand approach				
3.1	cables	Kmtr	26		
	TOTAL of ELECTRICAL WORKS Part- (A)				
PART B	CIVIL WORKS				
	SURVEY OF LINE & PREPARATION LAND SCHEDULE: Supply of required T&P's,				
1	Technical personnel's, labours for conducting				
1.1	Preliminary survey, Detail survey and resurvey (required for avoiding ROW problem)				
	including but not limited to taking of levels, profile plotting, tower spotting, marking of towers locations at site including showing P&T line, power line, Railway line, river crossing, roads and submission of route map and survey report etc. The P&T lines and railway lines for a minimum distance of 8 kms on either side of alignment shall be clearly indicated.	KM.	25.304		
1.2	Check survey including supply of all labour, T&P as per instruction of Engineer in Charge and as per the approved profile.	KM.	25.304		
1.3	Preparation of land schedule on revenue (if required)maps indicating alignment therein duly authenticated by Revenue Inspector & Tahasildar, enumeration of trees with the help of Forest officer and other prominent features required for alignment of the proposed 132 KV line. Final route to be plotted on 1:50000 topo sheet for approval.Detail GIS (Geographical Information System) of towers to be included.	KM.	25.304		
1.4	Soil Testing in complete shape along with submission of report etc. up to the depth of 7.0 Mtrs.	Per Loc.	40		
1.5	Soil Testing in complete shape along with submission of report etc. upto the depth of 45 mtrs for River bed pile.	Per Loc.	4		
2	EXCAVATION WORKS FOR OPEN CAST/SHALLOW TYPE FOUNDATIONS				

2.1.1 2.1.2	Excavation for following type of soil and rocks and back filling (back filling shall be done in layers of 500mm sprinkling of water and compaction thereafter and disposed of excess quantity of excavated soil at suitable place after back filling), & if required for filling the foundation, borrowed earth/morrum/sand shall be brought for filling and compaction, including supply of sand, all T&P, labour as required for foundation Soft/Loose soil Wet soil	CUM CUM	500 0		
2.1.3	Dense/Compact soil	CUM	1200		
2.1.4	Partial Submerged soil	CUM	2500		
2.1.5	Fully submerged soil	CUM	0		
2.1.6	Soft/Disintegrated rock(Not requiring Blasting)	CUM	2200		
2.1.7	Hard Rock(Requiring Blasting/Using breaker machinery)	CUM	500		
3	FOUNDATION MATERIALS: Supply of all materials like cement, steel, all coarse aggregates, fine aggregates and making foundations of the required above mentioned type towers as per the direction laid down in the technical specification and the direction of the site- in charge				
3.1	PCC(Lean Concrete) in the ratio 1:3:6(Grade M-10)	CUM	75		
3.2	(i) FOR OPENCAST FOUNDATION:Providing & laying of RCC work of ratio 1:1.5:3 (Grade M-20) with approved quality stone chips of nominal size 12mm to 20mm in tower foundation and cooping inclusive of cost of mixing, supply of form boxes Chimney & fixing, curing, testing of sample cement concrete cubes & cost of all materials like cement, etc. as per IS.456 (ii) The cooping height shall be 350mm above the ground level. The surrounding area shall be clear from materials and damage of land if any shall be repaired before measurement and as per requirement, including labours and T&P as per specification in the concrete ratio 1:1.5:3 (Grade M-20.)	сим	970		
3.2.1	Steel of different size (as per design) with cutting, bending , binding in position of M.S.Rod for reinfocement of foundation concret of towers (open cast) including supply of binding wire (With supply of steel rod (TATA/RINL/SAIL make)	МТ	20		
3.2	PILE FOUNDATION (UNDER-REAMED)				
3.2.1	Boring for under reemed cast in situ piling with betonite showing for stabilisation of bore pile diameter (375mm) & approximate length of the bore is 10 Mtrs with under reemed	Mtr	320		
3.2.2	Supply of all materials like cement ,steel, all coarse aggregates,labours , T&P & making pile foundation as per specification in R.C.C: 1:1.5:3(Grade M20) (Without cost of steel)	CUM	105		
3.2.3	Steel of different size (as per design) with cutting, bending , binding in position of M.S.Rod for reinfocement of foundation concret of towers (Under reem Pile) including supply of binding wire (With supply of steel rod (TATA/RINL/SAIL make)	MT	8		
3.2.4	Pile riser (if required) ,cap ,tie beam with R.C.C:1:1.5:3(Grade M-20), including supply of all materials like cement ,coarse, fine aggregates ,shuttering t&p, labours,dewatering ,proper curing of the foundation /concrete as per technical specification (Without cost of steel)	СИМ	30		

3.2.5	Steel of different size (as per design) with cutting, bending , binding in position of M.S.Rod for reinfocement of foundation concret of towers (pile riser &capping)	MT	2		
3.2.3	including supply of binding wire (With supply of steel rod (TATA/RINL/SAIL make)		-		
3.4	PILEFOUNDATION IN THE RIVER BED				
3.4.1	Supply of all materials like cement, steel, all coarse aggregrates, fine aggregrates and making 1000 mm dia pile foundations (after pile boring as per required depth, basing on design by DMC method or motor driven machinery etc.) of the required above mentioned type towers and as per requirement including supply of all equipments with labours, proper curing of the foundations and T&P as per specification in the concrete grade M-25 including supply of Bentonite required for stabilization bore of required diameter bore holes applicable for piles upto the required depth.				
3.4.1.1	Boring for river bed cast in situ piling	Mtrs.	200		
3.4.1.2	Concrete ratio 1:1:2 (Grade M-25) without supply of Steel for river bed piling	Cum	250		
3.4.1.3	Cutting , bending, hooking, fixing and binding in position of MS bar for reinforcement of foundation concrete of towers including supply of steel and binding wire	MT	24		
3.4.2	Fixing charges of MS Liner including the supply of materials like MS Sheet of adequate thickness, fabrication, cutting, bending, binding, putting the liner in appropriate position and other related works	MT	49		
3.4.3	PILE RISER, CAPPING, PEDESTAL & TIE BEAM CONCRTE WORKS OF RIVER BED PILE				
3.4.3.1	PCC (Lean Concrete) in the ratio 1:3:6 (Grade M-10)	Cum	13		
3.4.3.2	Pile riser (if required),cap ,tie beam with R.C.C:1:1.5:3(Grade M-20), including supply of all materials like cement ,coarse, fine aggregates ,shuttering t&p, labours,dewatering ,proper curing of the foundation /concrete as per technical specification (Without cost of steel)	Cum	238		
3.4.3.3	Steel of different size (as per design) with cutting, bending , binding in position of M.S.Rod for reinfocement of foundation concret of towers (pile riser &capping) including supply of binding wire (With supply of steel rod (TATA/RINL/SAIL make)	MT	12		
4.0	DE-WATERING(FOR OPEN CAST LOCATION)				
4.1	With Supply of all T&P, Fuel, Lubricant & electricity on HP Hour basis.	HP Hour	1250		
5.0	Supply of borrowed earth/morrum for back filling for foundation/revertment works				
5.1	Beyond 30 mtr and upto 100 mtr lead	CUM	450		
6	SHORING & SHUTTERING-Required in wet/submerged or special locations of open cast/shallow type foundations with supply of all materials, T&P and Labour.	SQ.MTR.	2400		
7	Head-Loading of all types of foundation-materials, towers, structures, conductors, Insulators, Hard-wares for inaccessible Locations beyond 400 mtrs from the nearest approach road as per the recommendation of site Engineer-In- Charge and approval of the General Manager of Concerned circle.	Per MT/ Per Mtr	20000		
8	WELDING OF TOWER MEMBERS				

8.1	Supply of all materials for continuous welding of bolts & nuts (around the bolts) up to top of tower without cross arm, including welding rods, welding generator machine (diesel engine operator.), application of required zinc rich paints around the welding portion after welding (two coats),fuel,lubricants,T&P and labours and other arrangements etc.	Nos.	51,902		
9	REVETMENT: (including Benching) Supply of all materials like cement, Late-rite stone (stone masonry) all type aggregates, labours, & T&P for construction of revetment walls as per requirement to protect the towers, where felt unsafe and as per approved drawing and the direction of Engineer in charge.				
9.1	Excavation in all type of soil including rock & back filling including supply of sand with back filling.	CUM	2200		
9.2	Lean Concrete in the ratio1:3:6(Grade M-10) including supply of sand chips etc.	CUM	300		
9.3	PCC in the ratio 1:2:4(Grade M-15) as above.	CUM	50		
9.4	RR Massonary work in the ratio 1:5.	CUM	2200		
10	Supply & painting of black bituminous paint three coats shall be provided up to a height of 500mm above the cooping (Both leg & bracing members)	LOC	92		
11	PTCC approval, railway crossing has to be obtained by submitting the required documents to the concerned department through OPTCL. The documents for PTCC clearance & Railway clearance including required drawings etc has to be submitted by the contractor within 5 months of award of contract. Beyond the above period L.D as applicable & the amount shall be deducted as specified in the specification.	LS	1		
	TOTAL of CIVIL WORKS Part- (B)				
	TOTAL OF ERECTION LINE (Electrical Work) & (Civil Work) -Schedule-4-line				

Name of Bidder:	
Signature of Bidder:	

¹ Specify currency in accordance with specifications in Bid Data Sheet under ITB 19.1 in Single-Stage Bid, or ITB 34.1 in Two-Stage Bid.

	ODISHA POWER TRANSMISSION C	ORPORATION LIMITED	
NAME C	OF THE WORK:-Design, Supply and Installation of Sub-Stations & Transmission Lines f	or Construction of 2X20 MVA-	132/33 KV Sub-station at Gondia and
associat	ted 132 KV D/C Lilo line from TTPS-DUBURI 132 KV Line (Line length-25.304 Km app	proximately) in Odisha State of	India under PACKAGE-6 Under Japan
Internat	tional Cooperation Agency (JICA)'s ODA Loan.		
Loan Ag	reement No: [ID-P245] - FB No: [CPC/JICA/ICB/06/17-18/]-	Reference	Identification No[OPTCL/JICA/PKG-6]
Schedu	ule No. 6. Grand Summary		
NAME	OF THE BIDDER		
Item	Description		Total Price ¹
		Foreign	Local
1	Total Schedule No. 1. Plant, Supplied from Abroad (Substation+Line)		
2	Total Schedule No. 2. Plant, Supplied from Within the Employer's Country (substation+Line)		
3	Total Schedule No. 3. Design Services (Not Applicable)		
4	Total Schedule No. 4. Installation and Other Services (substation+Line)		
5	Total Schedule No. 5. Provisional Sums (Not to be considered for Evaluation)		
	Total(to Bid Form)		
			Name of Bidder:

¹ Specify currency in accordance with specifications in Bid Data Sheet under ITB 19.1 in Single-Stage Bidding, or ITB 34.1 in Two-Stage Bidding. Create and use as many columns for Foreign Currency requirement as there are foreign

currencies.

Signature of Bidder:_

	ODISHA	POWER TRAI	NSMISSION CO	ORPORATION I	.IMITED			
associate	F THE WORK:- Design, Supply and Installation of Sub-Sed 132 KV D/C Lilo line from TTPS-DUBURI 132 KV Lilional Cooperation Agency (JICA)'s ODA Loan.							
Loan Agi	reement No: [ID-P245] - FB No: [CPC/JICA/ICB/	06/17-18/]	-	Referer	ference Identification No[OPTCL/JICA/PKG-6		
Schedul	e No. 7. Recommended Spare Parts							
NAME OF	THE BIDDER							
	DESCRIPTION OF ITEMS SUPPLY OF SPARES FOR THE FOLLOWING EQUIPMENTS. (As per Technical Specification)			Unit	Price			
Sl. No.		Unit	Quantity	CIP (foreign parts)	Ex-Works Price Local Parts	Total Price in INR		
		<i>(1)</i>	(1)	(2)	(3)	(1) x (2) or (3)		
	TOTAL							
				Name of Bidder:				

Signature of Bidder:_____

Note: Recommended Spares shall not be taken in to consideration for evaluation purpose.

NAME OF THE WORK:- Design, Supply and Installation of Sub-Stations & Transmission Lines for Construction of 2X20 MVA-132/33 KV Sub-station at Gondia and associated 132 KV D/C Lilo line from TTPS-DUBURI 132 KV Line (Line length-25.304 Km approximately) in Odisha State of India under PACKAGE-6 Under Japan International Cooperation Agency (JICA)'s ODA Loan.

Loan Agreement No: [ID-P245] - FB No: [CPC/JICA/ICB/06/17-18/]- Reference Identification No[OPTCL/JICA/PKG-6]

NOTICE Schedule No. 8. Details of Taxes & Duties NAME OF THE BIDDER SI No Description of Applicable Tax/Levy Tax @ __% Total Amount of Taxes /Duty/ Levies Details of Taxes and levies on the direct / bought out transactions between Bidder and ODISHA POWER TRANSMISSION CORPORATION LTD included in the Bid Price above but as may be payable by ODISHA POWER TRANSMISSION CORPORATION LTD (Schedue-1 & 2) TOTAL IGST (i) TOTAL CGST (III) TOTAL OGST TOTAL Any other tax (iv) TOTAL OF TAXES AND DUTIES [Sum (i) to (iv) Details of Taxes and levies on the direct / bought out transactions between Bidder and ODISHA POWER TRANSMISSION CORPORATION LTD included in the Bid Price above but as may be payable by ODISHA POWER TRANSMISSION CORPORATION LTD (Schedue- 4) TOTAL IGST (i) (ii) TOTAL CGST TOTAL OGST (111) (iv) TOTAL Any other tax TOTAL OF TAXES AND DUTIES [Sum (i) to (iv) 4 F. Total Bid Price: (including Taxes & Duties and other levies) Name of Bidder:_

Signature of Bidder:_