	ODISHA POWER TRANSMISSION	CORPOR	ATION	LIMITED			
NAN	AE OF THE WORK:- Design, Supply and Installation of Sub-Stations & Transmission Lines for Construct 132 KV Katapali - Bargarh line (Line length- 22.833Kms approximately) in Odisha State of India und				-		
	Loan Agreement No: [ID-P245] - IFB No: [CPC/JICA/ICB/08/15-16	/]-		Reference	Identification No	: [OPTCL/JICA	/PKG-8]
	NOTICE INVITING TENDER- & BID DOCUMENT No.:			- TENDER	- Deogarh JICA	PACKAGE- 8	/ 2016
	Schedule No. 1. Plant and Mandatory Spar	e Parts Sup	plied from	Abroad			
	NAME OF THE BIDDER						
				f 2X20 2 KV Bay- C ,2nos Bay-08 /C)	Unit	Price ²	
tem	DESCRIPTION OF ITEMS(SCHEDULE-2-SS) SUPPLY OF FOLLOWING EQUIPMENT & MATERIALS (As per Technical Specification)	Code ¹	UNITS	QUANTITY: for Construction of 2X20 MVA, 132/33 KV SS; Thunghi (1.32 KV Bay- S 05 Nos: 0.2 FDR, 0.2 TRF, 01 B/C, 2nos unequipped spare bay) & (33 KV Bay-08 Nos: 05FDR, 02 TRF & 01 B/C)	In Foreign Currency	CIP	Total Price ²
	145 KV,800-400-200 A,31.5 KA,4CORE SINGLE PHASE CURRENT TRANSFORMER (3 NOS PS CLASS & 1 NO. 0.2s CLASS)		NOS	(1) 15	(2)	(3)	(1) x (3)
	145 KV,1250A,31.5KA,ISOLATORS						
	S/I WITH OUT EARTH SWITCH		NOS	9			
	D/I WITH SINGLE EARTH SWITCH		NOS	2			
	D/I WITHOUT EARTH SWITCH		NOS	2			
	145 KV, 6600pF, 3CORE,SINGLE PHASE CAPACITOR VOLTAGE TRANSFORMER 120 KV METAL OXIDE SURGE ARRESTOR, 10 KA, Class III		NOS NOS	6 12			
4 5	145 KV, 2 CORE, SINGLE PHASE, IVT			3			
			NOS				
6 7	132 KV Bus Post Insulators 145KV, 3150A, 40KA, SF6, CIRCUIT BREAKER WITH SUPPORTING STRUCTURE		NOS SET	<u>18</u> 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			
	36 KV, 800-400-200, 25KA, 4 CORE SINGLE PHASE CURRENT TRANSFORMER (3 NOS PS CLASS & 1 NO. 0.2s CLASS)		NOS	6			
	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			
	36 KV,1250A,25KA,ISOLATORS		NOO	0			
	S/I WITH OUT EARTH SWITCH D/I WITH SINGLE EARTH SWITCH		NOS NOS	9 5			
	D/I WITH SINGLE EARTH SWITCH		NOS	2			
	S/I WITH BEAM MOUNTED		NOS	2	1		1
	30 KV, METAL OXIDE SURGE ARRESTOR, 10KA, class II		NOS	27			
1	36 KV ,2 CORE,SINGLE PHASE,IVT(1 core 3P & other core 0.2s)		NOS	3	1		
	36 KV,1250A,25KA,VACUUM CIRCUIT BREAKER WITH SUPPORTING STRUCTURE		NOS	8			
	33 KV Bus Post Insulators		NOS	27			
14	BUS BAR & CIRCUIT MATERIALS						

ODISHA POWER TRANSMISSION CORPORATION I IMITED

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121 CSR MODE CONDUCTOR NOS 4 121 CSR MODE SCREEN CONDUCTOR NOS 4 122 CSR MODE CONDUCTOR NOS 4 123 CSR MODE SCREEN CONDUCTOR NOS 4 123 CSR MODE CONDUCTOR NOS 4 124 CSR MODE CONDUCTOR NOS 4 123 CSR MODE CONDUCTOR NOS 4 124 CSR MODE CONDUCTOR NOS 4 123 CSR MODE CONDUCTOR NOS 4 124 CSR MODE CONDUCTOR NOS 4 123 CSR MODE CONDUCTOR NOS 4 124 CSR MODE CONDUCTOR NOS 4 123 CSR MODE CONDUCTOR NOS 4 124 CSR MODE CONDUCTOR NOS 4 124 CONDUCTOR						-	
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N3.15 Exposer for Twin Bun ACSR 33 INV Bus NOS 22 13.3.15 [3.3.17]	14.3.12	132 KV PI Clamp	NO	DS	18		
13.13 [12.13] [12.13] [12.13] [12.13] 13.13] [12.15] [13.13] [12.15] [13.13] [12.15] [13.13] [12.15] [13.13] [12.15] [13.13] [12.15] [13.13] [12.15] [13.13] [13.15] [13.15] [13.15] [13.15] [13.17] [13.13] [13.17] [13.13] [13.17] [13.13] [13.17] [13.13] [13.17] [13.13] [13.17] [13.13] [13.17] [13.13] [13.17] [13.13] [13.17] [13.13] [13.17] [13.13] [13.17] [13.13] [13.17] [13.13] [13.17] [13.13] [13.17] [13.13] [13.17] [13.13] [13.17] [13.13] [13.17] [13.13] [13.17] [13.13] [13.17] [13.17] [13.13] [13.17] [13.17] [13.13] [13.17] <t< td=""><td></td><td></td><td>NO</td><td>DS</td><td></td><td></td><td></td></t<>			NO	DS			
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13.37 13.28 V/ TC Gamp (BMETALLIC) NOS 39 13.38 13.28 V/TC Gamp NOS 6 13.39 13.28 V/TC Gamp NOS 127 13.30 13.28 V/TC Gamp NOS 36 13.31 13.28 V/TC Gamp NOS 27 13.31 13.28 V/TC Gamp NOS 27 13.31 13.81 V/TC Gamp NOS 27 13.32 13.81 V/TC Gamp NOS 27 13.33 13.81 V/TC Gamp NOS 48 13.33 13.81 V/TC Gamp NOS 48 13.33 13.81 V/TC Gamp NOS 48 13.34 S1 V/TC Gamp NOS 48 13.31 13.81 V/TC Gamp NOS 58 13.31 13.81 V/TC Gamp NOS 13.91 13.32 13.71 V/TC Gamp NOS 13.91 13.32 14.71 V/TC Gamp NOS <td< td=""><td>14.3.15</td><td>132 KV LA Clamp</td><td>NC</td><td>DS</td><td>12</td><td></td><td></td></td<>	14.3.15	132 KV LA Clamp	NC	DS	12		
14.3.10 132.1V NOS 6 6 14.3.10 132.1V CB Clamp NOS 127 14.3.20 132.1V CB Clamp NOS 36 14.3.20 33.1V St VF Clamp NOS 27 14.3.21 33.1V CC Clamp NOS 177 14.3.22 33.1V CC Clamp NOS 47 14.3.23 33.1V CC Clamp NOS 48 14.3.23 33.1V CC Clamp NOS 48 14.3.23 33.1V CC Clamp NOS 48 14.3.24 NOT Store NOS 48 144 14.3.24 NOT Store NOS 48 144 14.3.44 FOR T3XNV SIDE 28 NOS & TMIRS LENGTH EACH SET 26 144 14.3.47 FOR T3XNV SIDE 28 NOS & TMIRS LENGTH EACH SET 26 144 14.3.47 FOR T3XNV SIDE 28 NOS & TMIRS LENGTH EACH SET 26 144 14.3.48 FOR T3XNV SIDE 28 NOS & TMIRS LENGTH EACH SET 26 144 14.3.48 FOR T3XNV			NC	DS	12		
143.30 1330/0000000000000000000000000000000000	14.3.17	132 KV CT Clamp(BIMETALLIC)	NC	DS	36		
13.30 132 KV (26 Clamp NOS 36 13.31 33 KV (26 Clamp NOS 17			N	DS	6		
14.32 [33 KV, PL Clamp) NOS 27 Image: Clamp (Clamp) 14.32 [33 KV, DC Clamp NOS 117 Image: Clamp (Clamp) 14.32 [33 KV, DC Clamp NOS 27 Image: Clamp (Clamp) Image: Clamp (Clamp) 14.32 [33 KV, DC Clamp NOS 48 Image: Clamp (Clamp)	14.3.19	132kKV Isolater Pad Clamp	NC	DS	127		
143.21 33 KV Isolator jaid damp NOS 117 Image: Constraint of the image	14.3.20	132 KV CB Clamp	NC	DS	36		
14.32 33 KV LA Clamp NOS 27 Image: Constraint of the image: Constreating: Constraint of the image: Constraint of the ima	14.3.21	33 KV PI Clamp	NO	DS	27		
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14.3.23 3K V CT Clamp NOS 48 14.3.23 14.3.23 3K V NT Clamp NOS 48 14.3.23 14.3.23 3K V NT Clamp NOS 48 14.3.23 14.3.25 3K V NT Clamp NOS 48 14.3.23 13.27 PG Clamp for ACSR Moses NOS 48 14.3.27 14.3.2 14.3.27 14.3.2 14.3.27 14.3.2 14.3.27 14.3.2 14.3.2 14.3.2 14.3.2 14.3.2 14.3.2 14.3.2 14.3.2 14.3.2 14.3.2 14.3.2 14.3.2 14.3.2 14.3.2	14.3.23	33 KV LA Clamp	NC	DS	27		
14.3.2 33 KV VT Clamp NOS 3 14.3.2 33 KV CV CB Clamp NOS 48 14.3.2 03 KV CB Clamp NOS 48 14.3.2 03 KV CB Clamp NOS 48 14.3.2 03 KV CB Clamp NOS 48 14.4 EARTH SPIKES & ITS HARDWARES & FITTING NOS 48 14.4 EARTH SPIKES & ITS HARDWARES & FITTING SET 26 14.4.1 FOR 132KV SIDE 28 NOS @ 5 MTRS LENCTH EACH SET 26 14.4.2 FOR 33 KV SIDE 28 NOS @ 5 MTRS EACH SET 26 14.4.3 SUBSTATION EARTHING SCHOULDTOR FOR BURRIAL : 75X10 mm GI Flat for laying (spacing maximum 5m both way) MT 18.00 14.3.2 EARTHING CONDUCTOR FOR BURRIAL : 76X10 mm GI Flat for laying (spacing maximum 5m both way) MT 18.00 14.3.2 EARTHING CONDUCTOR FOR BURRIAL : 76X10 mm GI Flat for laying (spacing maximum 5m both way) MT 18.00 14.3.2 EARTHING CONDUCTOR FOR BURRIAL : 76X10 mm GI Flat for laying (spacing maximum 5m both way) MT 18.00 14.3.2 EARTHING CONDUCTOR FOR BURRIAL : 76X10 mm GI Flat for laying (spacing maximum 5m both way) MT 18.00 14.3.2 EARTHING CONDUCTOR FOR BURRIAL : 76X10 mm GI Flat for laying (spacing maximum 5m both way) MT 18.00 14.3.3 EARTHING CONDUCTOR ADS BURRIAL : 76X10							
143.23 NOS 48 143.27 143.27 PG Camp for ACSR Moses NOS 48 144.1 FOR 132KV SIDE 28 NOS @ 7 MTRS LENGTH EACH SET 26 144.1 FOR 132KV SIDE 28 NOS @ 5 MTRS EACH SET 25 145.3 EARTHING CONDUCTOR FOR BURRIAL : 75X10 mm GI Flat for laying (spacing maximum 5m both way) MT 18.00 145.3 EARTHING CONDUCTOR FOR BURRIAL : 75X10 mm GI Flat for laying (spacing maximum 5m both way) MT 18.00 145.3 EARTHING CONDUCTOR: SOK 0m GI Flat for Raiser from the burial earth nat to equipment,structure etc) MT 9.00 145.3 EARTHING DEVICE & ASSOCIATED ACCESSORIES (50 mm heavy duty GI PERFORATED PIPE 3 mtrs long for nor treated earth pil) NOS 185 145.4 EARTHING DEVICE & ASSOCIATED ACCESSORIES 40mm MS rod 3 mtrs long for non treated earth pil) NOS 185 145.4 GI Cable Trays (size: 300x75x2500mm) MTRS 1550 1454 146.3 GI Cable Trays (size: 40x75x2500mm) MTRS 1550 1454 146.3 GI Cable Trays (size: 40x75x2500mm) MTRS 1550 1454 146.3 GI Cable Trays (size: 40x75x2500mm) MTRS 1550 1454					-		
14.3 22 PG Clamp for ACSR Moose NOS 48 144 EARTH SPIKES & ITS NARDWARES & FITTING SET 26 144.1 FOR 132KV SIDE 28 NOS @ 7 MTRS LENGTH EACH SET 26 144.1 FOR 13 KV SIDE 28 NOS @ 7 MTRS LENGTH EACH SET 26 144.2 FOR 33 KV SIDE 28 NOS @ 5 MTRS EACH SET 26 145.3 EARTH STION EARTHING SYSTEMS SET 26 145.1 FOR 33 KV SIDE 28 NOS @ 5 MTRS EACH SET 26 145.2 EARTHING CONDUCTOR FOR BURRIAL : 72X10 mm GI Flat for laying (spacing maximum 5m both way) MT 18.00 145.2 EARTHING CONDUCTOR: 500K mm of Flat for Raiser from the burial earth mat to equipment.structure etc) MT 9.00 145.3 EARTHING DEVICE & ASSOCIATED ACCESSORIES (50 mm heavy duty GI PERFORATED PIPE 3 mtrs long for not reated earth pit) NOS 225 146.4 EARTHING DEVICE & ASSOCIATED ACCESSORIES 40mm MS rod 3 mtrs long for not reated earth pit) NOS 166 146.4 EARTH Signer 45007562500mm) MTRS 1550 1462 146.3 GL Cable Trays(size: 45007562500mm) MTRS 1550 147.1			NC	DS	48		
144 EARTH SPIKES & IT'S HARDWARES & FITTING Set 26 144.1 FOR 33 KV SIDE 26 NOS @ 5 MTRS ELANGTH EACH SET 25 144.2 FOR 33 KV SIDE 25 NOS @ 5 MTRS ELANGTH EACH SET 25 145.1 DRATING CONDUCTOR FOR BURRIAL. 75X10 mm GI Flat for laying (specing maximum 5m both way) MT 18.00 145.1 EARTHING CONDUCTOR: FOR BURRIAL. 75X10 mm GI Flat for laying (specing maximum 5m both way) MT 9.00 145.2 EARTHING CONDUCTOR: FOR BURRIAL. 75X10 mm GI Flat for laying (specing maximum 5m both way) MT 9.00 145.3 EARTHING CONDUCTOR: 50X6 mm GI Flat for laying (specing maximum 5m both way) MT 9.00 145.3 EARTHING CONDUCTOR: 50X6 mm GI Flat for Raiser from the burial earth mat to equipment structure etc) MT 9.00 145.4 EARTHING DEVICE & ASSOCIATED ACCESSORIES 40mm MS rod 3 mtrs long for non treated earth pil NOS 165 146.4 GL Gable Trays(size: 300x75x2500mm) MTRS 1550 144.3 146.3 GL Gable Trays(size: 300x75x2500mm) MTRS 1550 144.3 146.4 Support G.1 angle 50x50x6 mm for cable tray MT 3 144			NC	DS			
144.1 FOR 132KV SIDE 26 NOS @ 7 MTRS LENGTH EACH SET 26 144.2 FOR 33KV SIDE 26 NOS @ 5 MTRS LEACH SET 25 14.3 SUBSTATION EARTHING SYSTEMS MT 18.00 14.4.1 CORN SUB 5 MTRS LENGT (ALL : 75X10 mm GI Flat for laying (spacing maximum 5m both way) MT 18.00 14.5.2 EARTHING CONDUCTOR: 50X6 mm GI Flat for Raiser from the burial earth mat to equipment, structure etc) MT 9.00 14.5.2 EARTHING CONDUCTOR: 50X6 mm GI Flat for Raiser from the burial earth mat to equipment, structure etc) MT 9.00 14.5.2 EARTHING DEVICE & ASSOCIATED ACCESSORIES (50 mm heavy duty GI PERFORATED PIPE 3 mtrs long for threated earth pit) NOS 225 14.4.4 EARTHING DEVICE & ASSOCIATED ACCESSORIES 40mm MS rod 3 mtrs long for non treated earth pit) NOS 165 14.4.5 GI Cable Trays including G1. support Angle suitable for different sections i.e. Section:1-1,2-2,3-3 & 4-4 along with its accessories as per TS. MTRS 1550 14.6.1 GI Cable Trays(size: 450X75X2600mm) MTRS 1550 144.2 144.2 145.2 145.2 145.2 145.2 145.2 145.2 145.2 145.2 145.2 145.2 145.2 145.2 145.2							
144.2 ICR 33 KV SIDE 25 NOS @ 5 MTRS EACH SET 25 145 SUBSTATION EARTHING SYSTEMS NT 18.00 145.1 EARTHINS CONDUCTOR FOR BURRIAL: 75X10 mm GI Flat for laying (spacing maximum 5m both way) MT 18.00 145.2 EARTHING CONDUCTOR: 50X6 mm GI Flat for Raiser from the burial earth mat to equipment, structure etc) MT 9.00 145.3 EARTHING DEVICE & ASSOCIATED ACCESSORIES (50 mm heavy duty GI PERFORATED PIPE 3 mtrs long for treated earth pit) NOS 225 145.4 EARTHING DEVICE & ASSOCIATED ACCESSORIES 40mm MS rod 3 mtrs long for non treated earth pit) NOS 165 146.4 EARTHING State: 300/75x2500mm) MTRS 1550 146.3 GLable Trays (size: 450/75x2500mm) MTRS 2200 146.3 GLable Trays (size: 450/75x2500mm) MTRS 1250 146.4 GLable Trays (size: 450/75x2500mm) MTRS 1250 1463 146.4 GLable Trays (size: 450/75x2500mm) MTRS 1250 147.3 146.4 GLable Trays (size: 450/75x2500mm) MTRS 1250 147.3 147.3 SUB STATION SWITCYARD BMK, AC CONSOLE & OT			SE	т	26		
14.5 SUBSTATION EARTHING SYSTEMS Image: Constraint of the state o							
143.1 EARTHING CONDUCTOR FOR BURRIAL: 75X10 mm GI Flat for laying (spacing maximum 5m both way) MT 18.00 145.2 EARTHING CONDUCTOR: 50X6 mm GI Flat for Raiser from the burial earth mat to equipment, structure etc) MT 9.00 145.3 EARTHING DEVICE & ASSOCIATED ACCESSORIES (50 mm heavy duty GI PERFORATED PIPE 3 mirs long for meawle duty GI PERFORATED PIPE 3 mirs long for NOS 225 145.4 EARTHING DEVICE & ASSOCIATED ACCESSORIES 40mm MS rod 3 mirs long for on treated earth pit) NOS 165 14.5.4 GI Cable Tray since: 400x75x2500mm) GI Cable Tray since: 400x75x2500mm) NTRS 1550 14.6.3 GI Cable Tray since: 400x75x2500mm) MTRS 1550 165 14.6.3 GI Cable Tray since: 400x75x2500mm) MTRS 1350 146.3 14.6.4 Gupot Tray since: 300x75x2500mm) MTRS 1350 146.4 146.4 Support G. I angle 50x50x6 mm for cable tray MT 3 147.4 SUB STATION SWITCYARD BMK, AC CONSOLE & OTHER MARSHALLING BOXES MT 3 147.1 147.1 147.1 147.1 147.1 147.1 147.1 147.1 147.1 147.1 147.1 147.1 147.1 147.1 147.1 147.1 147.1 147.1 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
14.3.2 EARTHING CONDUCTOR: 50X6 mm Gi Flat for Raiser from the burial earth mat to equipment, structure etc.) MT 9.00 14.3.3 EARTHING DEVICE & ASSOCIATED ACCESSORIES (50 mm heavy duty GI PERFORATED PIPE 3 mtrs long for Irreated earth pit) NOS 225 14.5.4 EARTHING DEVICE & ASSOCIATED ACCESSORIES 40mm MS rod 3 mtrs long for non treated earth pit) NOS 165 14.5.4 EARTHING DEVICE & ASSOCIATED ACCESSORIES 40mm MS rod 3 mtrs long for non treated earth pit) NOS 165 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. MTRS 1550 14.6.1 G.I Cable Trays (size: 450x75x2500mm) MTRS 1550 14.6.2 G.I Cable Trays (size: 150x75x2500mm) MTRS 1350 14.6.3 G.I Cable Trays (size: 150x75x2500mm) MTRS 1350 14.6.4 Support G. langle 50x50x6 mm for cable tray MT 3 14.7.1 BAY MARSHALLING KIOSK MT 3 14.7.3 BAY MARSHALLING KIOSK NOS 7 14.7.3 BAY MARSHALLING KIOSK NOS 7			M	т	18.00		
14.3.3 EARTHING DEVICE & ASSOCIATED ACCESSORIES (50 mm heavy duly GI PERFORATED PIPE 3 mtrs long for treated earth pit) NOS 225 14.4.3 EARTHING DEVICE & ASSOCIATED ACCESSORIES 40mm MS rod 3 mtrs long for non treated earth pit) NOS 225 14.4.4 EARTHING DEVICE & ASSOCIATED ACCESSORIES 40mm MS rod 3 mtrs long for non treated earth pit) NOS 165 14.6 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. NITES 165 14.6.1 G.I Cable Trays(size: 450x75x2500mm) MTRS 1550							
Itreated earth pil) NOS 223 145.4 EARTHING DEVICE & ASSOCIATED ACCESSORIES 40mm MS rod 3 mtrs long for non treated earth pit) NOS 165 14.6 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. NOS 165 14.6.1 G.I Cable Trays(size: 450x75x2500mm) MTRS 1550 165 14.6.2 G.I Cable Trays(size: 300x75x2500mm) MTRS 2200 14.6.3 G.I Cable Trays(size: 150x75x2500mm) MTRS 1350 14.6.4 Support G. I angle 50x50x6 mm for cable tray MTRS 1350 14.6.4 Support G. Collow For aspectation of the tray for cable tray MT 3 14.7.1 SUB STATION SWITCYARD BMK, AC CONSOLE & OTHER MARSHALLING BOXES MT 3 14.7.2 SWITCH YARD AC CONSOLE FOR LIGHTING NOS 7 14.7.3 SWITCH YARD RECEPTACLE BOARD FOR TFR OIL FILTERATION NOS 1 14.7.3 SWITCH YARD RECEPTACLE BOARD FOR WELDING & OTHER EMERGENCY NOS 1 14.7.4 SWITCH YARD RECEPTACLE BOARD FOR WELDING & OTHER EMERGENCY NOS 17 14.7.5 SWITCH YARD RECEPTACLE BOARD FOR WELDING & OTHER EMERGENCY NOS 17 14.7.5 SWITCH YARD STRUCTURES COLUMNA & BEAM (LATTICE TYPE) FOR 132/33 KV CLASS							
14.5.4 EARTHING DEVICE & ASSOCIATED ACCESSORIES 40mm MS rod 3 mtrs long for non treated earth pit) NOS 165 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. MTRS 1550 14.6.1 G.I Cable Trays(size: 450x75x2500mm) MTRS 1550 165 14.6.2 G.I Cable Trays(size: 500x75x2500mm) MTRS 2200 165 14.6.3 G.I Cable Trays(size: 50x75x2500mm) MTRS 1350 165 165 14.6.3 G.I Cable Trays(size: 50x75x2500mm) MTRS 1350 165			NC	DS	225		
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. Image: Construct of the image: Construle of the image: Construct of the image: Co			NC	DS	165		
with its accessories as per TS. MTRS MTRS 1500 144.61 G.I Cable Trays(size: 450x75x2500mm) MTRS 1500 MTRS 1500 144.63 G.I Cable Trays(size: 30x75x2500mm) MTRS 2200 MTRS 1600 14.6.3 G.I Cable Trays(size: 150x75x2500mm) MTRS 2200 MTRS 1600 14.6.4 Support G. I angle 50x50x6 mm for cable tray MT 3 MT 3 MT 14.7 SUB STATION SWITCYARD BMK, AC CONSOLE & OTHER MARSHALLING BOXES NOS 7 MT 14.7 14.7 SUB STATION SWITCYARD BMK, AC CONSOLE & OTHER MARSHALLING BOXES NOS 7 MT 14.7.1 BAY MARSHALLING KIOSK NOS 7 MT 14.7.2 SWITCH YARD AC CONSOLE FOR LIGHTING NOS 1 14.7.3 SWITCH YARD AC CONSOLE FOR LIGHTING & OTHER EMERGENCY NOS 1 14.7.3 SWITCH YARD RECEPTACLE BOARD FOR WELDING & OTHER EMERGENCY NOS 2 MT 14.7.4 SWITCH YARD STRUCTURES COLUMN & BEAM (LATTICE TYPE) FOR 132/33 KV CLASS INCLUDING & OTHER NOS 17 1 17 14.7.5 17				-			
146.1 G.I Cable Trays(size: 450x75x2500mm) MTRS 1550 146.2 G.I Cable Trays(size: 300x75x2500mm) MTRS 2200							
14.6.3 G.I Cable Trays(size: 150x75x2500mm) MTRS 1350 14.6.4 Support G. I angle 50x50x6 mm for cable tray MT 3 14.7 SUB STATION SWITCYARD BMK, AC CONSOLE & OTHER MARSHALLING BOXES MT 3 14.7.1 SUA YMARSHALLING KIOSK NOS 7 14.7.2 SWITCH YARD AC CONSOLE FOR LIGHTING NOS 7 14.7.3 SWITCH YARD RECEPTACLE BOARD FOR TFR OIL FILTERATION NOS 1 14.7.4 SWITCH YARD RECEPTACLE BOARD FOR TFR OIL FILTERATION NOS 1 14.7.3 SWITCH YARD RECEPTACLE BOARD FOR WELDING & OTHER EMERGENCY NOS 2 14.7.4 SWITCH YARD DOOR Console Boxes (132 KV CT-5 Nos., 33 KV CT-08Nos., 132 KV CVT-2 No., 132 KV IVT-1 NOS 17 14.7.5 CT, PT & CVT Out Door Console Boxes (132 KV CT-5 Nos., 33 KV CT-08Nos., 132 KV IVT-1 NOS 17 15 SWITCH YARD STRUCTURES COLUMN & BEAM (LATTICE TYPE) FOR 132/33 KV CLASS INCLUDING 17 15.10 DIFFERENT TYPES OF COLUMNS WITH DETAILS MT 24.00 15.11 T1S - 132 KV (NOMINAL UNIT WT- 1.2 MT) = 20Sets. MT 5.70			MT	RS			
14.6.3 G.I Cable Trays(size: 150x75x2500mm) MTRS 1350 14.6.4 Support G. I angle 50x50x6 mm for cable tray MT 3 14.7 SUB STATION SWITCYARD BMK, AC CONSOLE & OTHER MARSHALLING BOXES MT 3 14.7.1 SUA YMARSHALLING KIOSK NOS 7 14.7.2 SWITCH YARD AC CONSOLE FOR LIGHTING NOS 7 14.7.3 SWITCH YARD RECEPTACLE BOARD FOR TFR OIL FILTERATION NOS 1 14.7.4 SWITCH YARD RECEPTACLE BOARD FOR TFR OIL FILTERATION NOS 1 14.7.3 SWITCH YARD RECEPTACLE BOARD FOR WELDING & OTHER EMERGENCY NOS 2 14.7.4 SWITCH YARD DOOR Console Boxes (132 KV CT-5 Nos., 33 KV CT-08Nos., 132 KV CVT-2 No., 132 KV IVT-1 NOS 17 14.7.5 CT, PT & CVT Out Door Console Boxes (132 KV CT-5 Nos., 33 KV CT-08Nos., 132 KV IVT-1 NOS 17 15 SWITCH YARD STRUCTURES COLUMN & BEAM (LATTICE TYPE) FOR 132/33 KV CLASS INCLUDING 17 15.10 DIFFERENT TYPES OF COLUMNS WITH DETAILS MT 24.00 15.11 T1S - 132 KV (NOMINAL UNIT WT- 1.2 MT) = 20Sets. MT 5.70			MT	RS	2200		
14.7 SUB STATION SWITCYARD BMK, AC CONSOLE & OTHER MARSHALLING BOXES NOS 7 Image: Construction of the construction			MT	RS	1350		
14.7 SUB STATION SWITCYARD BMK, AC CONSOLE & OTHER MARSHALLING BOXES NOS 7 Image: Construction of the construction			M	Т	3		
14.7.2 SWITCH YARD AC CONSOLE FOR LIGHTING NOS 2 14.7.3 14.7.3 SWITCH YARD RECEPTACLE BOARD FOR TR OIL FILTERATION NOS 1 14.7.3 14.7.4 SWITCH YARD RECEPTACLE BOARD FOR WELDING & OTHER EMERGENCY NOS 2 14.7.3 14.7.5 CT, PT & CVT Out Door Console Boxes (132 KV CT-5 Nos., 33 KV CT-08Nos., 132 KV CVT-2 No., 132 KV IVT-1 NOS 2 16 14.7.5 SWITCH YARD STRUCTURES COLUMN & BEAM (LATTICE TYPE) FOR 132/33 KV CLASS INCLUDING FOUNDATION BOLTS & NUTS. 17 17 17 15 SWITCH TYPES OF COLUMNS WITH DETAILS MT 24.00 15.1.2 15.1.2 T4S - 132 KV (NOMINAL UNIT WT - 0.95 MT) = 06 sets MT 5.70							
14.7.3 SWITCH YARD RECEPTACLE BOARD FOR TFR OIL FILTERATION NOS 1 14.7.4 SWITCH YARD RECEPTACLE BOARD FOR WELDING & OTHER EMERGENCY NOS 2 14.7.4 SWITCH YARD RECEPTACLE BOARD FOR WELDING & OTHER EMERGENCY NOS 2 14.7.5 CT, PT & CVT Out Door Console Boxes (132 KV CT-5 Nos., 33 KV CT-08Nos., 132 KV CVT-2 No., 132 KV IVT-1 NOS 17 15 SWITCH YARD STRUCTURES COLUMN & BEAM (LATTICE TYPE) FOR 132/33 KV CLASS INCLUDING FOUNDATION BOLTS & NUTS. 17 16 15.1 DIFFERENT TYPES OF COLUMNS WITH DETAILS MT 24.00 16 15.1.1 T15 - 132 KV (NOMINAL UNIT WT- 1.2 MT) = 20Sets. MT 24.00 15.1.2 T4S - 132 KV (NOMINAL UNIT WT- 0.95 MT) = 06 sets MT 5.70	14.7.1	BAY MARSHALLING KIOSK	NC	DS	7		
14.7.4 SWITCH YARD RECEPTACLE BOARD FOR WELDING & OTHER EMERGENCY NOS 2 14.7.5 CT, PT & CVT Out Door Console Boxes (132 KV CT-5 Nos., 33 KV CT-08Nos., 132 KV CVT-2 No., 132 KV IVT-1 NOS 17 15 SWITCH YARD STRUCTURES COLUMN & BEAM (LATTICE TYPE) FOR 132/33 KV CLASS INCLUDING FOUNDATION BOLTS & NUTS. 17 17 15.1 DIFFERENT TYPES OF COLUMNS WITH DETAILS 15.1.1 171S - 132 KV (NOMINAL UNIT WT - 1.2 MT) = 20Sets. MT 24.00 15.1.2 T4S - 132 KV (NOMINAL UNIT WT - 0.95 MT) = 06 sets MT 5.70	14.7.2	SWITCH YARD AC CONSOLE FOR LIGHTING	NC	DS	2		
14.7.5 CT, PT & CVT Out Door Console Boxes (132 KV CT-5 Nos., 33 KV CT-08Nos., 132 KV CVT-2 No., 132 KV IVT-1 NOS 17 15 SWITCH YARD STRUCTURES COLUMN & BEAM (LATTICE TYPE) FOR 132/33 KV CLASS INCLUDING FOUNDATION BOLTS & NUTS. NOS 17 15.1 DIFFERENT TYPES OF COLUMNS WITH DETAILS Image: Column of the text of			NC	DS	1		
No., 33 KV IVT-1 No.) NOS 17 15 SWITCH YARD STRUCTURES COLUMN & BEAM (LATTICE TYPE) FOR 132/33 KV CLASS INCLUDING FOUNDATION BOLTS & NUTS. Image: Column Switch Details Image: Column Switch Details <td></td> <td></td> <td>NC</td> <td>DS</td> <td>2</td> <td></td> <td></td>			NC	DS	2		
15 SWITCH YARD STRUCTURES COLUMN & BEAM (LATTICE TYPE) FOR 132/33 KV CLASS INCLUDING FOUNDATION BOLTS & NUTS. Image: Column Switch Details & NUTS. 15.1. DIFFERENT TYPES OF COLUMNS WITH DETAILS Image: Column Switch Details & NUTS. 15.1. TIS - 132 KV (NOMINAL UNIT WT - 1.2 MT) = 20Sets. Image: Column Switch Details & NUTS. 15.1.2 T4S - 132 KV (NOMINAL UNIT WT - 0.95 MT) = 06 sets Image: Column Switch Details & NUTS.			NC	os	17		
FOUNDATION BOLTS & NUTS. Image: Constraint of the second sec							
15.1.1 T1S - 132 KV(NOMINAL UNIT WT- 1.2 MT) = 20Sets. MT 24.00 15.1.2 T4S - 132KV (NOMINAL UNIT WT- 0.95 MT) = 06 sets MT 5.70		FOUNDATION BOLTS & NUTS.					
15.1.2 T4S - 132KV (NOMINAL UNIT WT - 0.95 MT) = 06 sets MT 5.70							
15.1.5 100 - SORV[INUMINAL UNIT WT+ 0.05 MT] = 11 Gets.	15.1.3	T8S - 33KV(NOMINAL UNIT WT- 0.83 MT) =11 Sets.	N	IT 🗌	9.13		

			- 1	0.40	٦		
	T9S - 33KV(NOMINAL UNIT WT- 0.6 MT) = 14 Sets.	M	1	8.40			
	DIFFERENT TYPE OF BEAMS WITH DETAILS		F	7.44	-		
	G1 - 132 KV(NOMINAL UNIT WT- 0.62 MT) =12 Sets.	M		7.44	-		
	G1X - 132 KV (NOMINAL UNIT WT- 0.62 MT) = 2 Sets. G2 - 132 KV (NOMINAL UNIT WT- 0.9 MT) = 06 Sets	M		1.24 5.40	-		
	G2 - 132 KV(NOMINAL UNIT WI - 0.9 MI) = 06 Sets G1.2 - 132 KV(Each two beams of G1 type) (NOMINAL UNIT WT- 1.25 MT) =2	M		2.50	-		
	$G_{1,2} - 132 \text{ KV}(\text{Each two beams of GT type) (NOMINAL UNIT WT- 1.25 MT) = 2}$ $G_{6} - 33\text{KV}$ (NOMINAL UNIT WT- 0.53 MT) = 04 Sets.	M		2.50	-		
	G6 - 33KV (NOMINAL UNIT WT- 0.4MT) = 9 Sets.	M		3.60	-		
15.2.6	G4 - 33KV (NOMINAL UNIT WT- 0.4MT) = 9 Sets. G4X - 33KV (NOMINAL UNIT WT- 0.52 MT) =5 Sets.	M		2.60	-		
15.2.7	TOTAL WEIGHT OF COLUMN & BEAM					1	1
		м	Г	72.13			
15.4	SWITCH YARD EQUIPMENT STRUCTURES (LATTICE TYPE) FOR 132/33 KV CLASS INCLUDING FOUNDATION BOLTS & NUTS.						
15 4 1	ISOLATORS-132KV		_				1
	S.I.WITH & WITHOUT E/S (Unit weight - 658.767 Kg) =9 Nos	M	r l	5.93			
	D.I. WITHOUT E/S (Unit Weight - 979.10 Kg) = 2 Nos.	M		1.96			
15.4.5	D.I. WITH E/S (Unit Weight - 1120.559 Kg) = 2 Nos.	M		2.24			
	ISOLATORS-33 KV	101		2.27	-		
	S.I. WITHOUT E/S (Unit weight - 294.893 Kg) =9 Nos.	M	r	2.65			
	D.I. WITHOUT E/S (Unit weight - 655.764 Kg) = 2 Nos.	M		1.31	•		
	D.I. WITH E/S (Unit weight ~ 670.555 Kg) = 5 Nos.	M		3.35			
	CTS-132 KV (Unit Weight - 214.546 Kg) = 15 Nos.	M		3.22			
	CTS-33 KV (Unit Weight - 148.80 Kg) = 18 Nos	M		2.68			
	CVTS-132 KV (Unit Weight - 236.628 Kg) = 6Nos.	M		1.42			
	IVTS-132 KV (Unit Weight - 231.195 Kg) = 3 Nos	M		0.69			
	IVTS-33 KV (Unit Weight - 124.336 Kg) = 3 Nos	M		0.37			
	Surge Arrester-132 kV (Unit Weight - 179.893 Kg) = 12 Nos	М		2.16			
	BPI-132 KV (Unit Weight - 309.883 Kg) = 18Nos	M	Г	5.58			
	BPI-33 KV (Unit Weight - 148.80 Kg) = 15 Nos	M	Г	2.23			
	NCTS (Unit Weight - 138.24 Kg) = 4 Nos	М		0.55			
15.4.18	TOTAL WEIGHT OF EQUIPMENT STRUCTURE	м	г	36.35			
	TOTAL WEIGHT OF EQUIPMENT STRUCTURE Total weight of GI Nuts and bolts for the above Column, Beam & equipment structures	M		36.35 6.50			
15.5	Total weight of GI Nuts and bolts for the above Column, Beam & equipment structures						
15.5 16	Total weight of GI Nuts and bolts for the above Column, Beam & equipment structures GENERAL EQUIPMENT & SUBSTATION ACCESSORIES						
15.5 16 16.1	Total weight of GI Nuts and bolts for the above Column, Beam & equipment structures GENERAL EQUIPMENT & SUBSTATION ACCESSORIES POWER CABLES,1.1KV,XLPE/PVC ARMOURED, ALUMINIUM CONDUCTOR (As per Specification)	M	r				
15.5 16 16.1 16.1.1	Total weight of GI Nuts and bolts for the above Column, Beam & equipment structures GENERAL EQUIPMENT & SUBSTATION ACCESSORIES POWER CABLES,1.1KV,XLPE/PVC ARMOURED, ALUMINIUM CONDUCTOR (As per Specification) XLPE 3.5 CX300 mm ²		r				
15.5 16 16.1 16.1.1	Total weight of GI Nuts and bolts for the above Column, Beam & equipment structures GENERAL EQUIPMENT & SUBSTATION ACCESSORIES POWER CABLES,1.1KV,XLPE/PVC ARMOURED, ALUMINIUM CONDUCTOR (As per Specification) XLPE 3.5 CX300 mm ²	M	r RS	6.50			
15.5 16 16.1 16.1.1 16.1.2	Total weight of GI Nuts and bolts for the above Column, Beam & equipment structures GENERAL EQUIPMENT & SUBSTATION ACCESSORIES POWER CABLES,1.1KV,XLPE/PVC ARMOURED, ALUMINIUM CONDUCTOR (As per Specification) XLPE 3.5 CX300 mm ² XLPE 3.5 CX185 mm ²	M MT MT	r 	6.50 500 300			
15.5 16 16.1 16.1.1 16.1.2 16.1.3	Total weight of GI Nuts and bolts for the above Column, Beam & equipment structures GENERAL EQUIPMENT & SUBSTATION ACCESSORIES POWER CABLES,1.1KV,XLPE/PVC ARMOURED, ALUMINIUM CONDUCTOR (As per Specification) XLPE 3.5 CX300 mm ² XLPE 3.5 CX185 mm ² XLPE 3.5 CX120 mm ²	M MT MT MT	r RS RS RS RS	6.50 500 300 200			
15.5 16 16.1 16.1.1 16.1.2 16.1.3 16.1.4	Total weight of GI Nuts and bolts for the above Column, Beam & equipment structures GENERAL EQUIPMENT & SUBSTATION ACCESSORIES POWER CABLES,1.1KV,XLPE/PVC ARMOURED, ALUMINIUM CONDUCTOR (As per Specification) XLPE 3.5 CX300 mm ² XLPE 3.5 CX120 mm ² PVC 3.5 CX70 mm ²	M MT MT MT	r 	6.50 500 300 200 600			
15.5 16 16.1 16.1.1 16.1.2 16.1.3 16.1.4 16.1.5	Total weight of GI Nuts and bolts for the above Column, Beam & equipment structures GENERAL EQUIPMENT & SUBSTATION ACCESSORIES POWER CABLES,1.1KV,XLPE/PVC ARMOURED, ALUMINIUM CONDUCTOR (As per Specification) XLPE 3.5 CX300 mm ² XLPE 3.5 CX185 mm ² XLPE 3.5 CX120 mm ² PVC 3.5 CX70 mm ² PVC 3.5 CX35 mm ²	M MT MT MT MT	r 	6.50 500 300 200 600 1750			
15.5 16 16.1 16.1.2 16.1.3 16.1.4 16.1.5 16.1.6	Total weight of GI Nuts and bolts for the above Column, Beam & equipment structures GENERAL EQUIPMENT & SUBSTATION ACCESSORIES POWER CABLES,1.1KV,XLPE/PVC ARMOURED, ALUMINIUM CONDUCTOR (As per Specification) XLPE 3.5 CX300 mm² XLPE 3.5 CX120 mm² PVC 3.5 CX70 mm² PVC 3.5 CX35 mm² PVC 4 CX 16 mm²	MT MT MT MT MT	r - RS -	6.50 500 300 200 600 1750 1000			
15.5 16 16.1 16.1.2 16.1.3 16.1.4 16.1.5 16.1.6 16.1.7	Total weight of GI Nuts and bolts for the above Column, Beam & equipment structures GENERAL EQUIPMENT & SUBSTATION ACCESSORIES POWER CABLES,1.1KV,XLPE/PVC ARMOURED, ALUMINIUM CONDUCTOR (As per Specification) XLPE 3.5 CX300 mm ² XLPE 3.5 CX120 mm ² PVC 3.5 CX700 mm ² PVC 3.5 CX35 mm ² PVC 4.5 X 5 mm ² PVC 4 CX 16 mm ² PVC 4 CX 6 mm ²	M MT MT MT MT	r - RS -	6.50 500 300 200 600 1750			
15.5 16 16.1 16.1.2 16.1.3 16.1.4 16.1.5 16.1.6 16.1.7	Total weight of GI Nuts and bolts for the above Column, Beam & equipment structures GENERAL EQUIPMENT & SUBSTATION ACCESSORIES POWER CABLES,1.1KV,XLPE/PVC ARMOURED, ALUMINIUM CONDUCTOR (As per Specification) XLPE 3.5 CX300 mm² XLPE 3.5 CX120 mm² PVC 3.5 CX70 mm² PVC 3.5 CX35 mm² PVC 4 CX 16 mm²	MT MT MT MT MT	r - RS -	6.50 500 300 200 600 1750 1000			
15.5 16 16.1 16.1.1 16.1.2 16.1.3 16.1.4 16.1.5 16.1.6 16.1.7 16.1.8	Total weight of GI Nuts and bolts for the above Column, Beam & equipment structures GENERAL EQUIPMENT & SUBSTATION ACCESSORIES POWER CABLES,1.1KV,XLPE/PVC ARMOURED, ALUMINIUM CONDUCTOR (As per Specification) XLPE 3.5 CX300 mm ² XLPE 3.5 CX120 mm ² PVC 3.5 CX700 mm ² PVC 3.5 CX35 mm ² PVC 4.5 X 5 mm ² PVC 4 CX 16 mm ² PVC 4 CX 6 mm ²	MT MT MT MT MT MT	r - RS -	6.50 500 300 200 600 1750 1000 3750			
15.5 16 16.1 16.1.1 16.1.2 16.1.3 16.1.4 16.1.5 16.1.6 16.1.7 16.1.8 16.2	Total weight of GI Nuts and bolts for the above Column, Beam & equipment structures GENERAL EQUIPMENT & SUBSTATION ACCESSORIES POWER CABLES,1.1KV,XLPE/PVC ARMOURED, ALUMINIUM CONDUCTOR (As per Specification) XLPE 3.5 CX300 mm ² VLPE 3.5 CX120 mm ² PVC 3.5 CX300 mm ² PVC 3.5 CX300 mm ² PVC 3.5 CX35 mm ² PVC 4 CX 16 mm ² PVC 4 CX 6 mm ² PVC 2CX 6 mm ²	MT MT MT MT MT MT	T I XS I	6.50 500 300 200 600 1750 1000 3750			
15.5 16 16.1 16.1.1 16.1.2 16.1.3 16.1.4 16.1.5 16.1.6 16.1.7 16.1.8 16.2 16.2.1	Total weight of GI Nuts and bolts for the above Column, Beam & equipment structures GENERAL EQUIPMENT & SUBSTATION ACCESSORIES POWER CABLES,1.1KV,XLPE/PVC ARMOURED, ALUMINIUM CONDUCTOR (As per Specification) XLPE 3.5 CX300 mm ² XLPE 3.5 CX185 mm ² XLPE 3.5 CX185 mm ² PVC 3.5 CX10 mm ² PVC 3.5 CX70 mm ² PVC 4 CX 16 mm ² PVC 4 CX 6 mm ² PVC 2X 6 mm ² PVC 2X 6 mm ² PVC 2X 5 mm ² PVC 2X 6 mm ² PVC 2X 5 mm ²	MT MT MT MT MT MT MT MT MT	RS	6.50 500 300 200 600 1750 1000 3750 2200 5500			
15.5 16 16.1 16.1.2 16.1.3 16.1.4 16.1.5 16.1.6 16.1.7 16.1.8 16.2 16.2.1 16.2.2	Total weight of GI Nuts and bolts for the above Column, Beam & equipment structures GENERAL EQUIPMENT & SUBSTATION ACCESSORIES POWER CABLES,1.1KV,XLPE/PVC ARMOURED, ALUMINIUM CONDUCTOR (As per Specification) XLPE 3.5 CX300 mm ² XLPE 3.5 CX100 mm ² YLPE 3.5 CX120 mm ² PVC 3.5 CX100 mm ² PVC 4 CX 16 mm ² PVC 4 CX 16 mm ² PVC 2 CX 6 mm ² PVC 2 CX 6 mm ² CONTROL CABLES,1.1 KV, PVC, STRANDED COPPER(As per specification) 2 CX 2.5 mm ² 4 CX 2.5 mm ²	M MT MT MT MT MT MT MT MT MT	R I RS I	6.50 500 300 200 600 1750 1000 3750 2200 5500 10500			
15.5 16 16.1 16.1.2 16.1.3 16.1.4 16.1.5 16.1.6 16.1.7 16.2 16.2.1 16.2.2 16.2.3	Total weight of GI Nuts and bolts for the above Column, Beam & equipment structures GENERAL EQUIPMENT & SUBSTATION ACCESSORIES POWER CABLES,11KV,XLPE/PVC ARMOURED, ALUMINIUM CONDUCTOR (As per Specification) XLPE 3.5 CX300 mm ² XLPE 3.5 CX120 mm ² PVC 3.5 CX120 mm ² PVC 4 CX 16 mm ² PVC 4 CX 6 mm ² PVC 2X 6 mm ² CONTROL CABLES,1.1 KV, PVC, STRANDED COPPER(As per specification) 2 CX 2.5 mm ² 4 CX 2.5 mm ²	M MT MT MT MT MT MT MT MT MT MT	Image: constraint of the sector of	6.50 500 300 200 600 1750 1000 3750 2200 5500 10500 4500			
15.5 16 16.1 16.1.2 16.1.3 16.1.4 16.1.5 16.1.6 16.1.7 16.2.1 16.2.2 16.2.3 16.2.4	Total weight of GI Nuts and bolts for the above Column, Beam & equipment structures GENERAL EQUIPMENT & SUBSTATION ACCESSORIES POWER CABLES,1.1KV,XLPE/PVC ARMOURED, ALUMINIUM CONDUCTOR (As per Specification) XLPE 3.5 CX300 mm² XLPE 3.5 CX120 mm² PVC 3.5 CX70 mm² PVC 4 CX 16 mm² PVC 4 CX 6 mm² PVC 2CX 6 mm² CONTROL CABLES,1.1 KV, PVC, STRANDED COPPER(As per specification) 2 CX 2.5 mm² COX CS 5 CM2 COX 2.5 mm² COX 2.5 mm² CX 2.5 mm² CX 2.5 mm² CX 2.5 mm²	M MT MT MT MT MT MT MT MT MT M	Image: constraint of the sector of	6.50 500 300 200 600 1750 1000 3750 2200 5500 10500 4500 5500			
15.5 16 16.1 16.1.1 16.1.2 16.1.3 16.1.4 16.1.5 16.1.6 16.1.7 16.1.8 16.2.1 16.2.2 16.2.3 16.2.4 16.2.5	Total weight of GI Nuts and bolts for the above Column, Beam & equipment structures GENERAL EQUIPMENT & SUBSTATION ACCESSORIES POWER CABLES,1.1KV,XLPE/PVC ARMOURED, ALUMINIUM CONDUCTOR (As per Specification) XLPE 3.5 CX300 mm ² XLPE 3.5 CX120 mm ² PVC 3.5 CX70 mm ² PVC 4 CX 16 mm ² PVC 4 CX 6 mm ² PVC 2X 6 mm ² CONTROL CABLES,1.1 KV, PVC, STRANDED COPPER(As per specification) 2 CX 2.5 mm ² COX CX 5 mm ² CX 2.5 mm ² CX 2.5 mm ² CX 2.5 mm ²	M MT MT MT MT MT MT MT MT MT M	RS Image: Constraint of the sector of the sect	6.50 500 300 200 600 1750 2200 5500 10500 4500 5500 10000			
15.5 16 16.1 16.1.2 16.1.3 16.1.4 16.1.5 16.1.6 16.1.7 16.1.8 16.2.1 16.2.2 16.2.3 16.2.4 16.2.5 16.2.6	Total weight of GI Nuts and bolts for the above Column, Beam & equipment structures GENERAL EQUIPMENT & SUBSTATION ACCESSORIES POWER CABLES,1.1KV,XLPE/PVC ARMOURED, ALUMINIUM CONDUCTOR (As per Specification) XLPE 3.5 CX300 mm ² XLPE 3.5 CX185 mm ² PVC 3.5 CX70 mm ² PVC 3.5 CX70 mm ² PVC 3.5 CX35 mm ² PVC 4 CX 16 mm ² PVC 4 CX 6 mm ² PVC 2CX 6 mm ² CONTROL CABLES,1.1 KV, PVC, STRANDED COPPER(As per specification) 2 CX 2.5 mm ² CX 2.5 mm ² 10 CX 2.5 mm ² 10 CX 2.5 mm ² 10 CX 2.5 mm ²	M MT MT MT MT MT MT MT MT MT M	RS Image: Constraint of the constraint of th	6.50 500 300 200 600 1750 1000 3750 2200 5500 10500 4500 5500 10000 9000			
15.5 16 16.1 16.1.1 16.1.2 16.1.3 16.1.4 16.1.5 16.1.6 16.1.7 16.1.8 16.2 16.2.1 16.2.3 16.2.4 16.2.5 16.2.6 16.2.7	Total weight of GI Nuts and bolts for the above Column, Beam & equipment structuresGENERAL EQUIPMENT & SUBSTATION ACCESSORIESPOWER CABLES,1.1KV,XLPE/PVC ARMOURED, ALUMINIUM CONDUCTOR (As per Specification)XLPE 3.5 CX300 mm²XLPE 3.5 CX185 mm²VC 3.5 CX100 mm²PVC 3.5 CX100 mm²PVC 3.5 CX300 mm²PVC 3.5 CX300 mm²PVC 3.5 CX30 mm²PVC 4 CX 16 mm²PVC 4 CX 6 mm²PVC 4 CX 6 mm²PVC 2CX 6 mm²CONTROL CABLES,1.1 KV, PVC, STRANDED COPPER(As per specification)2 CX 2.5 mm²10 CX 2.5 mm²	M MT MT MT MT MT MT MT MT MT M	RS Image: Constraint of the constraint of th	6.50 500 300 200 600 1750 2200 5500 10500 4500 5500 10000			
15.5 16 16.1 16.1.1 16.1.2 16.1.3 16.1.4 16.1.5 16.1.6 16.1.7 16.1.8 16.2 16.2.1 16.2.3 16.2.4 16.2.5 16.2.6 16.2.7	Total weight of GI Nuts and bolts for the above Column, Beam & equipment structuresGENERAL EQUIPMENT & SUBSTATION ACCESSORIESPOWER CABLES,1.1KV,XLPE/PVC ARMOURED, ALUMINIUM CONDUCTOR (As per Specification)XLPE 3.5 CX300 mm²XLPE 3.5 CX185 mm²VC 3.5 CX100 mm²PVC 3.5 CX100 mm²PVC 3.5 CX300 mm²PVC 3.5 CX300 mm²PVC 3.5 CX30 mm²PVC 4 CX 16 mm²PVC 4 CX 6 mm²PVC 4 CX 6 mm²PVC 2CX 6 mm²CONTROL CABLES,1.1 KV, PVC, STRANDED COPPER(As per specification)2 CX 2.5 mm²10 CX 2.5 mm²	M MT MT MT MT MT MT MT MT MT M	Image: constraint of the second sec	6.50 500 300 200 600 1750 1000 3750 2200 5500 10500 4500 5550 10000 9000 5000			
15.5 16 16.1 16.1.1 16.1.2 16.1.3 16.1.4 16.1.5 16.1.6 16.1.7 16.1.8 16.2.1 16.2.3 16.2.4 16.2.5 16.2.6 16.2.7	Total weight of GI Nuts and bolts for the above Column, Beam & equipment structuresGENERAL EQUIPMENT & SUBSTATION ACCESSORIESPOWER CABLES,1.1KV,XLPE/PVC ARMOURED, ALUMINIUM CONDUCTOR (As per Specification)XLPE 3.5 CX300 mm²XLPE 3.5 CX185 mm²VC 3.5 CX100 mm²PVC 3.5 CX100 mm²PVC 3.5 CX300 mm²PVC 3.5 CX300 mm²PVC 3.5 CX30 mm²PVC 4 CX 16 mm²PVC 4 CX 6 mm²PVC 4 CX 6 mm²PVC 2CX 6 mm²CONTROL CABLES,1.1 KV, PVC, STRANDED COPPER(As per specification)2 CX 2.5 mm²10 CX 2.5 mm²	M MT MT MT MT MT MT MT MT MT MT MT MT MT	RS	6.50 500 300 200 600 1750 1000 3750 2200 5500 10500 4500 5550 10000 9000 5000 2000			
15.5 16 16.1 16.1.1 16.1.3 16.1.4 16.1.3 16.1.4 16.1.5 16.1.6 16.1.7 16.1.8 16.2 16.2.1 16.2.2 16.2.3 16.2.4 16.2.5 16.2.5 16.2.6 16.2.7 16.2.8 16.2.9	Total weight of GI Nuts and bolts for the above Column, Beam & equipment structuresGENERAL EQUIPMENT & SUBSTATION ACCESSORIESPOWER CABLES,1.1KV,XLPE/PVC ARMOURED, ALUMINIUM CONDUCTOR (As per Specification)XLPE 3.5 CX300 mm²XLPE 3.5 CX185 mm²XLPE 3.5 CX100 mm²PVC 3.5 CX100 mm²PVC 3.5 CX70 mm²PVC 4.5 CX35 mm²PVC 4.5 CX35 mm²PVC 4.5 CX6 mm²PVC 4.5 CX 6 mm²PVC 2.5 CX6 mm²CONTROL CABLES,1.1 KV, PVC, STRANDED COPPER(As per specification)2 CX 2.5 mm²10 CX 2.5 mm²11 CX 120 mm² BAT TO BAT CHARGER & CHARGER TO DCDB	M MT MT MT MT MT MT MT MT MT M	RS	6.50 500 300 200 600 1750 1000 3750 2200 5500 10500 4500 5550 10000 9000 5000			
15.5 16 16.1 16.1.2 16.1.3 16.1.4 16.1.5 16.1.6 16.1.7 16.1.8 16.2.1 16.2.2 16.2.3 16.2.4 16.2.5 16.2.6 16.2.6 16.2.6 16.2.9 17	Total weight of GI Nuts and bolts for the above Column, Beam & equipment structures GENERAL EQUIPMENT & SUBSTATION ACCESSORIES POWER CABLES,1.1KV,XLPE/PVC ARMOURED, ALUMINIUM CONDUCTOR (As per Specification) XLPE 3.5 CX300 mm² XLPE 3.5 CX120 mm² PVC 3.5 CX120 mm² PVC 4 CX 16 mm² PVC 4 CX 6 mm² PVC 2.0X 6 mm² CONTROL CABLES,1.1 KV, PVC, STRANDED COPPER(As per specification) 2 CX 2.5 mm² 10 CX 2.5 mm² 10 CX 2.5 mm² 110 CX 2.5 mm² 12 CX 2.5 mm² 13 CX 2.5 mm² 14 CX 2.5 mm² 15 CX 2.5 mm² 16 CX 2.5 mm² 17 CX 2.5 mm² 18 CX 2.5 mm² 19 CX 2.5 mm² 10 CX 2.5 mm² 10 CX 2.5 mm² 11 CX 2.0 mm² BAT TO BAT CHARGER & CHARGER TO DCDB ACCESSORIES FOR PLCC SYSTEM With OPGW cable	M MT MT MT MT MT MT MT MT MT M	T I RS I	6.50 500 300 200 600 1750 1000 3750 2200 5500 10500 4500 5500 10000 9000 5000 2000 600			
15.5 16 16.1 16.1.2 16.1.3 16.1.4 16.1.5 16.1.6 16.1.7 16.1.8 16.2 16.2.3 16.2.4 16.2.5 16.2.6 16.2.7 16.2.8 16.2.9 17 17.1	Total weight of GI Nuts and bolts for the above Column, Beam & equipment structures GENERAL EQUIPMENT & SUBSTATION ACCESSORIES POWER CABLES,1.1KV,XLPE/PVC ARMOURED, ALUMINIUM CONDUCTOR (As per Specification) XLPE 3.5 CX300 mm ² XLPE 3.5 CX120 mm ² PVC 3.5 CX120 mm ² PVC 3.5 CX120 mm ² PVC 4 CX 16 mm ² PVC 4 CX 6 mm ² PVC 2CX 6 mm ² PVC 2CX 6 mm ² CONTROL CABLES,1.1 KV, PVC, STRANDED COPPER (As per specification) 2 CX 2.5 mm ² 10 CX 2.5 mm ² 10 CX 2.5 mm ² 12 CX 2.5 mm ² 10 CX 2.5 mm ² 12 CX 2.5 mm ² 13 CX 2.5 mm ² 14 CX 2.5 mm ² 15 CX 2.5 mm ² 16 CX 2.5 mm ² 17 CX 2.5 mm ² 18 CX 2.5 mm ² 19 CX 2.5 mm ² 10 CX 2.5 mm ² 12 CX 2.5 mm ² 13 CX 2.5 mm ² 14 CX 2.5 mm ² 15 CX 2.5 mm ² 16 CX 2.5 mm ² 17 CX 2.5 mm ² 18 CX 2.5 mm ² 19 CX 2.5 mm ² 10 CX 2.5 mm ² 12 CX 2.5 mm ²	M MT MT MT MT MT MT MT MT MT MT MT MT MT	T I RS I	6.50 500 300 200 600 1750 1000 3750 2200 5500 10500 4500 5550 10000 9000 5000 2000			
15.5 16 16.1 16.1.2 16.1.3 16.1.4 16.1.5 16.1.6 16.1.7 16.1.8 16.2.1 16.2.2 16.2.3 16.2.4 16.2.5 16.2.6 16.2.6 16.2.6 16.2.9 17	Total weight of GI Nuts and bolts for the above Column, Beam & equipment structures GENERAL EQUIPMENT & SUBSTATION ACCESSORIES POWER CABLES,1.1KV,XLPE/PVC ARMOURED, ALUMINIUM CONDUCTOR (As per Specification) XLPE 3.5 CX300 mm ² XLPE 3.5 CX185 mm ² XLPE 3.5 CX100 mm ² PVC 3.5 CX100 mm ² PVC 3.5 CX100 mm ² PVC 4.5 CX300 mm ² PVC 4.5 CX100 mm ² PVC 4.5 CX100 mm ² PVC 4.5 CX165 mm ² PVC 4.5 CX 6 mm ² PVC 2.5 cX35 mm ² PVC 2.5 cm ² CONTROL CABLES,1.1 KV, PVC,STRANDED COPPER(As per specification) 2 CX 2.5 mm ² 4 CX 2.5 mm ² 5 CX 2.5 mm ² 10 CX 2.5 mm ² 10 CX 2.5 mm ² 12 CX 2.5 mm ² 13 CX 2.5 mm ² 14 CX 2.5 mm ² 15 CX 2.5 mm ² 16 CX 2.5 mm ² 17 CX 2.5 mm ² 18 CX 2.5 mm ² 19 CX 2.5 mm ² 12 CX 2.5 mm ² 13 CX 120 mm ² BAT TO BAT CHARGER & CHARGER TO DCDB ACCESSORIES FOR P	M MT MT MT MT MT MT MT MT MT M	T I RS I	6.50 500 300 200 600 1750 1000 3750 2200 5500 10500 4500 5500 10000 9000 5000 2000 600 			
15.5 16 16.1 16.1.1 16.1.2 16.1.3 16.1.4 16.1.5 16.1.6 16.1.7 16.1.8 16.2 16.2.1 16.2.2 16.2.3 16.2.4 16.2.5 16.2.6 16.2.7 16.2.8 17.1	Total weight of GI Nuts and bolts for the above Column, Beam & equipment structures GENERAL EQUIPMENT & SUBSTATION ACCESSORIES POWER CABLES,1.1KV,XLPE/PVC ARMOURED, ALUMINIUM CONDUCTOR (As per Specification) XLPE 3.5 CX300 mm ² XLPE 3.5 CX120 mm ² PVC 3.5 CX120 mm ² PVC 3.5 CX120 mm ² PVC 4 CX 16 mm ² PVC 4 CX 6 mm ² PVC 2CX 6 mm ² PVC 2CX 6 mm ² CONTROL CABLES,1.1 KV, PVC, STRANDED COPPER (As per specification) 2 CX 2.5 mm ² 10 CX 2.5 mm ² 10 CX 2.5 mm ² 12 CX 2.5 mm ² 10 CX 2.5 mm ² 12 CX 2.5 mm ² 13 CX 2.5 mm ² 14 CX 2.5 mm ² 15 CX 2.5 mm ² 16 CX 2.5 mm ² 17 CX 2.5 mm ² 18 CX 2.5 mm ² 19 CX 2.5 mm ² 10 CX 2.5 mm ² 12 CX 2.5 mm ² 13 CX 2.5 mm ² 14 CX 2.5 mm ² 15 CX 2.5 mm ² 16 CX 2.5 mm ² 17 CX 2.5 mm ² 18 CX 2.5 mm ² 19 CX 2.5 mm ² 10 CX 2.5 mm ² 12 CX 2.5 mm ²	M MT MT MT MT MT MT MT MT MT MT MT MT MT	T I RS I	6.50 500 300 200 600 1750 1000 3750 2200 5500 10500 4500 5500 10000 9000 5000 2000 600			

170					1	
17.3	Supply of FODP(Fibre Optic Distribution Panel)48 F: Indoor type,rack mounted with FCPC coupling and pig tails(DWSm Fibre)		No	1		
	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		
17.5	48 V, 300 AH, maintenance free VRLA Battery set.		Set	1		
17.6	SMPS based battery charger of 75A suitable for 48V VRLA battery.		No	1		
	2.5 sq. mm 2 core control cable(power supply,Transducer/MFT PT supply)	1	Metre	500		
	2.5 sq. mm multi strand 4 core control cable(Transducer/MFT CT, supply)		Metre	500		
	1.5 sq. mm 10 core control cable(Digital Input)		Metre	200		
	10 sq. mm 2 core multi strand control cable(Battery)		Metre	100		
17.11	Earth Flat, Cable Tray, Telephone cable, ACDB, DCDB, Foundation rail, Junction Box,.		Set	1		
18	SUPPLY OF POWER TRANSFORMER, STATION TRANSFORMER & OTHER MATERIALS FOR MEETING THE AUXILIARY SUPPLY OF THE SUB-STATION AS PER TECHNICAL SPECIFICATION					
18.1	POWER TRANSFORMER 132/33KV,20MVA (AS PER SPECIFICATION)		NOS	2		
	STATION TRANSFORMER 33KV/433V.250 KVA (AS PER SPECIFICATION)		NOS	2		
18.3	Supply of materials for erection of station transformers			~		
	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].	S	SETS	2		
	33 KV AB SWITCH IN 33 KV SIDE(600AMP) including required GI pipe(horizontal & vertically down) & handle for operation of AB switch	;	SETS	2		
18.3.3	HG fuse set for 33 KV side of the Station transformer including base(each set comprises three single HG fuse)	:	SETS	2		
18.3.4	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.	5	SETS	2		
19	Switch yard lighting: Design, engineering, procurement of labour, material including all associated works for construction of switch yard lightings as per technical specification and approved drawings. The fixture shall be of reputed make (Philips/CGL/Bajaj) and fixtures shall be LED and proper cabling from the lighting outdoor distribution boards to the junction boxes and from junction boxes to the fixtures. The lighting fixtures are to be installed on the switch yard structures. The quantity of such fixtures are to be designed and to be ascertained.					
	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		
	STREET LIGHTING: IT INCLUDES SUPPLY OF GI TUBULAR POLE AS PER TECHNICAL SPECIFICATION, LED LIGHTING FIXTURES including LAMPS of reputed make (Philips/CGL/Bajaj).(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).(100 watt each) for Street Light.		SET	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		
	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		
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		
19.2.4	FROM POLE TO LIGHTING FIXTURES. 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		NO	1		

20	2 TR CAPACITY 5-STAR rated SPLIT AIR CONDITIONING UNITS WITH REMOTE CONTROL FACILITY:				
	INCLUDING SUPPLY OF AIR CONDITIONERS, VOLTAGE STABILISER, CONTROL BOXES ETC FOR	SE	T 20		
	COMPLETING THE A.C SCHEME.(AS PER SPECIFICATION) FOR CONTROL ROOM, CARRIER ROOM &				
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	NO	S 4		
21.2	DRY CHEMICAL POWDER(TROLLEY MOUNTED)- 25 KGS	NO	S 4		
21.3	DRY POWDER TYPE -6 KGS	NO	S 4		
21.4	CO ₂ - 4.5 KGS	NO	S 10		
	CO ₂ - 9.0 KGS	NO	S 10		
21.5	CO ₂ (TROLLY MOUNTED)- 22.5 KGS	NOS	S 4		
	Vater type- 9 LTRS	NOS	S 4		
	Foam type - 50 LTR	NO			
	FIRE BUCKET (6 NOS IN EACH STAND) WITH STAND With Canopy arrangement	SET			
	PROTECTION, CONTROL METERING, EVENT LOGGER, BUS BAR PROTN PAN, COMM PAN, RELAY TOOL KITS				
	AS PER TECH SPEC				
22.1	TIME SYNCH EQUIPMENT	NOS	S 1		
	132 KV SIDE (SIMPLEX TYPE PANEL)				
	FEEDER CONTROL PANEL	NO	S 2		
22.3.2	FEEDER RELAY PANEL	NO	S 2		
22.3.3	TRANSFORMER CONTROL PANEL(FOR 132 KV SIDE OF 132/33 KV POWER TRANSFORMER)	NO	S 2		
22.3.4	TRANSFORMER RELAY PANEL(FOR 132 KV SIDE OF 132/33 KV POWER TRANSFORMER)	NOS	S 2		
	BUSCOUPLER CONTROL	NOS			
	BUSCOUPLER RELAY PANEL	NOS	S 1		
22.3.7	COMMON PANEL (KP-1)	NO	S 1		
22.4	33 KV SIDE				
22.4.1	FEEDER CONTROL & RELAY PANEL	NO	S 5		
22.4.2	TRANSFORMER CONTROL & RELAY PANEL	NOS	S 2		
22.4.3	BUSCOUPLER CONTROL & RELAY PANEL	NOS	S 1		
23	AC & DC SYSTEM				
23.1	AC SYSTEM				
23.1.1	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	Г 1		
23.1.2	ACDB (HAVING 400A MCCB) AS PER SPECIFICATION (AC DB-1, AC DB-2 WITH B/C)	SET	Г 1		
23.1.3	MAIN LIGHTING DISTRIBUTION BOARD (HAVING 250A MCCB AS INCOMER)AS PER SPECIFICATION (WITH DB-1, DB-2 & B/C)	SET	Г 1		
23.1.4	INDOOR LIGHTING DISTRIBUTION BOARD AS PER SPECIFICATION. (WITH DB-1.DB-2 & B/C)	SET	Г 1		
	EMERGENCY LIGHTING DISTRIBUTION BOARD	SET	Г 1		
	INDOOR RECEPTACLE BOARD	SET	Г 1		
23.2	DC SYSTEM				
23.2.1	220 V DC BOARD (HAVING 100A DC MCCB AS INCOMER, E/F (EARTH LEAKAGE), UNDER & OVER VOLTAGE AS PER SPECIFICATION (DC DB-1)	SET	Г 1		
23.2.2	220 V DC EMERGENCY DISTRIBUTION BOARD	SET	Г 1		
23.2.3	BATTERY (350 AH PLANTE TYPE) FOR 220 V DC	SE			
	BATTERY CHARGER FOR 220 V, 350 AH BATTERY (FLOAT AND FLOAT CUM BOOST)	SE			
	DISTLED WATER PLANT OF 10 LTR/HR FOR BATTERY BANKS	SE			
25	WALKIE TALKIE SET	SET			
26	PORTABLE ALUMINIUM LADDER EXTENDABLE TYPE OF ADEQUATE HEIGHT TO BE USED FOR MAINTENANCE OF EQUIPMENT INSIDE SWITCH YARD.	NOS			
27	PEDESTAL MOUNTED WHEEL FITTED DERRICK FOR LIFTING/ LOWERING OF MATERIALS UP TO 1.5 TON CAPACITY.	SET	Г 1		
28	POWER WINCH NEAR STORE SHED FOR HANDLING MATERIALS UPTO 5 TON CAPACITY.	SET	Г 1		
	WATER COOLER WITH WATER PURIFIER SYSTEM	NOS			
29					

r							
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			
32	OFFICE FURNITURE (AS PER ANNEXURE - III ,INDICATED IN TS-TIMK-SCHEDULE OF REQUIREMENTS						
32	OFFICE FURNITURE (AS PER ANNEAURE - III , INDICATED IN TS-TIMK-SCHEDULE OF REQUIREMENTS) OFFICE FURNITURE)>PLACING IN CONTROL ROOM,CONFERENCE ROOM, OFFICE ROOMS, LIBRARY,		SET	1			
	TESTING LAB. etc.		3L1	1			
33	BEST QUALITY & APPROVED MAKE INSULATING MAT (Confirming to IS:15652:2006) TO BE KEPT INFRONT OF						
	ALL PANELS BOARDS ETC.		NOS	37			
Α	TOTAL OF SUBSTATION (PLANT) SUPPLY						
Manc	latory Spare Parts						
	DESCRIPTION OF ITEMS				Unit I	Price ²	
Item	SUPPLY OF MANDATORY SPARES FOR THE FOLLOWING EQUIPMENTS.	Code ¹	UNITS	Quantity			Total Price ²
	(As per Technical Specification)				In Foreign Currency	CIP	
_	145 KV.(800-400-200 A).31.5KA.4CORE SINGLE PHASE CURRENT TRANSFORMER INCLUDING TERMINAL						
1	CONNECTOR		NOS	2			
2	145 KV,1250A,31.5KA,ISOLATORS						
2.1	MALE & FEMALE CONTACTS		SET	1			
2.2	POWER CONTACTOR, RELAYS, MCBs,		SET	1			
2.3			SET	2			
2.4	MOTOR WITH GEAR ASSEMBLY & BEVEL		SET	1			
2.5	GEAR ASSEMBLY COMPLETE.		CET				
2.5 2.6	AUXILIARY SWITCH CONTACTS ASSEMBLY		SET SET	1			
	EARTHING ROD & BLADE CONTACT SIDE HINGE PINS,TERMINAL CONNECTOR,TERMINAL PAD		SET	1			
2.7	POST INSULATOR SUPPORT		SET	1			
	FOST INSULATOR SUFFORT		SET (
2.8			3NOS.	1			
			PER SET)				
	145 KV,6600pF,3CORE,SINGLE PHASE						
3	CAPACITOR VOLTAGE TRANSFORMER INCLUDING TERMINAL CONNECTOR		NOS	1			
4	120 KV, METAL OXIDE 10 KA, CLASS III SURGE ARRESTOR, COMPLETING WITH INSULATING BASE & SURGE		NIGS	2			
4	MONITOR.		NOS	2			
5	145 KV ,2 CORE,SINGLE PHASE,IVT INCLUDING TERMINAL CONNECTOR		NOS	1			
6	132 KV Bus Post Insulators		NOS	2			
7	145KV,3150A,40KA,SF6,CIRCUIT BREAKER						
	COMPLETE ONE POLE ASSEMBLY OF BREAKER		NOS	1			
7.2	SPRING CHARGING MOTOR		NOS	1			
7.3	BREKER AUXILIARY CONTACTS		SET	1			
7.4	POWER CONTACTORS, RELAYS, MCBs,		CET				
7.4	SWITCHES, FUSES, PUSH BUTTONS, RESISTORS, PRESSURE SWITCHES, LIMIT SWITCHES, ETC AS PER APPROVED SCHEMATIC.		SET	1			
7.5	DENSITY MONITORING SYSTEM (IF REQUIRED)		SET	1			
	CLOSING COIL		NOS	4			
	TRIPPING COIL		NOS	4			
	SF6 GAS FILLING DEVICE		NOS	1			
	SET OF GASKETS, "O" RINGS,SEALS PER CIRCUIT BREAKER		SET	1			
	36 KV,(800-400-200 A),25KA,3CORE SINGLE						
8.1	PHASE CURRENT TRANSFORMER		NOS	2			
8.2	36 KV,(800-400-200 A),25KA,4 CORE SINGLE		NOS	1			
	PHASE CURRENT TRANSFORMER		NUS	1			
9	36 KV,1250A,25KA,ISOLATORS						
9.1	MALE & FEMALE CONTACTS		SET	1			
9.2	POWER CONTACTOR, RELAYS, MCBs,		SET	1			
-	SWITCHES, FUSES, PUSH BUTTONS, RESISTORS ETC AS PER APPROVED SCHEMATIC.						
9.3			SET	2			
9.4	MOTOR WITH GEAR ASSEMBLY & BEVEL		SET	1			
0.5	GEAR ASSEMBLY COMPLETE.		CLT	1			
9.5 9.6	AUXILIARY SWITCH CONTACTS ASSEMBLY EARTHING ROD & BLADE CONTACT SIDE		SET SET	1			
	HINGE PINS, TERMINAL CONNECTOR, TERMINAL PAD		SET	1			+
3.1	ITINGE FING, LERIVIIVAL CONNECTOR, LERIVIIVAL PAD		JEI	T			1

		SET	(
9.8	POST INSULATOR SUPPORT	3NO	5. 1			
		PER SI	ET)			
			,		-	
10	30 KV,METAL OXIDE, 10 KA, CLASS II SURGE	NO	3 3			
	ARRESTOR COMPLETE WITH INSULATOR BASE AND SURGE MONITOR					
11	36 KV ,2 CORE,SINGLE PHASE,IVT	NO	5 1			
	36KV, 1250A,25KA,VACUUM CIRCUIT BREAKER					
12.1	ONE COMPLETE POLE ASSEMBLY OF CIRCUIT BREAKER	SET	1			
12.2	TRIPPING CIOLS	NO	5 4			
	CLOSING COL	NO				
	SPRING CHARGING MOTOR	NO				
	AUXILIARY SWITCH CONTACTS ASSEMBLY	SET				
	SET OF GASKET,"O" RINGS, SEALING PER					
12.6	CIRCUIT BREAKER	SET	1			
	POWER CONTACTORS, RELAYS, MCBs,					
	SWITCHES, FUSES, PUSH BUTTONS, RESISTORS, PRESSURE SWITCHES, LIMIT SWITCHES, ETC AS PER	SET	1			
	APPROVED SCHEMATIC	52.	-			
	33 KV Bus Post Insulators	NO	5 3			
	BUS BAR & CIRCUIT MATERIALS	110.	-			
	120 kN ANTIFOG INSULATOR STRINGS for Double Moose cond (TENSION)-132 KV	SET	2			
	120 kN ANTIFOG INSULATOR STRINGS for Single Moose cond (TENSION)-132 KV	SET				
	20 kN ANTIFOG INSULATOR STRINGS for Double Moose cond (TENSION)-33 KV	SET				
	120 kN ANTIFOG INSULATOR STRINGS for Single Moose cond (TENSION)-33 KV	SET				
	90 kN ANTIFOG INSULATOR STRINGS for Double/ Single Moose cond (SUSPENSION)-132 KV	SET				
14.6	90 kN ANTIFOG INSULATOR STRINGS for Double/ Single Moose cond (SUSPENSION) 33 KV	SET	2			
15	ACSR MOOSE CONDUCTOR	MTR	S 250			
		SET				
		(EAC	н			
16	HARDWARES & FITTINGS/SPACERS/CLAMP	TYP	1			
	& CONNECTORS ETC. FOR 132 KV & 33 KV	THRE	E			
		NOS	.)			
17	GENERAL EQUIPMENT & SUBSTATION					
17	ACCESSORIES					
17.1	POWER CABLES,1.1KV,XLPE & PVC,ARMOURED,					
17.1	ALUMINIUM CONDUCTOR(As per Specification)					
	3.5 CX300 mm ² (ONE PIECE OF MAXM. LENGTH OF CABLE USED)-XLPE	PCS	. 1			
	3.5 CX185 mm ² (ONE PIECE OF MAXM. LENGTH OF CABLE USED)-XLPE	PCS	. 1			
		PCS				
	3.5 CX120 mm ² (ONE PIECE OF MAXM. LENGTH OF CABLE USED)-XLPE					
	3.5 CX70 mm ² (ONE PIECE OF MAXM. LENGTH OF CABLE USED)-PVC	PCS				
	3.5 CX35 mm ² (ONE PIECE OF MAXM. LENGTH OF CABLE USED)-PVC	PCS	. 1			
17.1.6	4 CX 16 mm ²⁻ -PVC	MTR	S 250			
	4 CX 6 mm ² -PVC	MTR	S 250			
	2CX 6 mm ² -PVC	MTR			1	1
	CONTROL CABLES,1.1 KV, PVC,STRANDED COPPER(As per specification)					
		Mtr	s 500			
	4 CX 2.5 mm ² (ONE DRUM HAVING LENGTH OF 500 MTRS)	+				
	5 CX 2.5 mm ² (ONE DRUM HAVING LENGTH OF 500 MTRS)	Mtr				
17.2.3	7 CX 2.5 mm ² (ONE DRUM HAVING LENGTH OF 500 MTRS)	Mtr	s 500			
17.2.4	10 CX 2.5 mm ² (ONE DRUM HAVING LENGTH OF 500 MTRS)	Mtr	s 500			
	12 CX 2.5 mm ² (ONE DRUM HAVING LENGTH OF 250 MTRS)	Mtr	s 250			
	16 CX 2.5 mm ² (ONE DRUM HAVING LENGTH OF 250 MTRS)	Mtr			1	1
		Mtr		1	1	
	19 CX 2.5 mm ² (ONE DRUM HAVING LENGTH OF 250 MTRS)	Mtr	5 250		+	
17.2.8	1CX 120 mm ²	MTR	S 50			
	BAT TO BAT CHARGER & CHARGER TO DCDB					
	CARRIER COMMUNICATION & OTHER MATERIALS			-		
17.3.1	ONE COMPLETE CELL ASSEMBLY OF BATTERY(FOR 48 V VRLA TYPE BATTERY 300 AH,)	NO				
17.3.1 17.3.2		NO NO SET	2			

17.3.4 ONE COMPLET	TE SET OF ELECTRONIC CARDS FOR BATTERY CHARGER FOR 350 AH (220V)		SET	1		
PROTECTI	ON, CONTROL METERING, EVENT LOGGER, BUS BAR PROTN PAN, COMM PAN, RELAY TOOL		361	-		
	R TECH SPEC AND BOQ FOR PCM					
18.1 132 KV SID						
18.1.1 DISTANCE	PROTECTION RELAY		NOS	1		
	RENT & EARTH FAULT RELAY		NOS	1		
18.1.3 MASTER T			NOS	2		
18.1.4 DIFFEREN	TIAL PROTECTION RELAY		NOS	1		
18.1.5 TRIP SUPE			NOS	3		
18.1.6 OTHER AU	XILIARY RELAYS(EACH 1 NO. OF DIFFERENT TYPE)		SET	1		
18.1.7 ANNUNCIA	TOR		NOS	1		
18.1.8 DISCREPA	NCY CONTROL SWITCH					
a) FOR CIR	CUIT BREAKER		NOS	2		
b) FOR ISO	LATOR		NOS	2		
18.1.9 PROTECTION	ON TRANSFER SWITCH		NOS	1		
18.1.10 AMMETER	SELECTOR SWITCH		NOS	1		
18.1.11 VOLTMETE	R SELECTOR SWITCH		NOS	1		
	ALONG WITH TRANSDUCER		SET	1		
18.1.13 VOLTMETE	R ALONG WITH TRANSDUCER		SET	1		
18.1.14 MW METER	R ALONG WITH TRANSDUCER		SET	1		
18.1.15 MVAR MET	ER ALONG WITH TRANSDUCER		SET	1		
18.2 33 KV SIDE						
18.2.1 OVER CUR	RENT & EARTH FAULT RELAY		NOS	1		
18.2.2 MASTER T	RIP RELAY		NOS	2		
18.2.3 OTHER AU	XILIARY RELAYS (EACH 1 NO. OF DIFFERENT TYPE)		SET	1		
18.2.4 ANNUNCIA			NOS	1		
18.2.5 CONTROL	SWITCHES FOR					
a) CIRCUIT	BREAKER		NOS	2		
b) ISOLATC			NOS	2		
	ON TRANSFER SWITCH		NOS	1		
	SELECTOR SWITCH		NOS	1		
	R SELECTOR SWITCH		NOS	1		
	ALONG WITH TRANSDUCER		SET	1		
	R ALONG WITH TRANSDUCER		SET	1		
	R ALONG WITH TRANSDUCER		SET	1		
18.2.12 MVAR MET	ER ALONG WITH TRANSDUCER		SET	1		
B TOTAL OF	MANDATORY SPARE PARTS SUPPLY				 	
	TOTAL OF SUBSTATION-SCHEDULE-1-Plant and Mandatory Spare Par	ts (to Schedule No. 6	Grand Su	immary)		
			Name of E	Bidder:	 	
			Signature of	of Bidder:		

¹ Bidders shall enter a code representing the country of origin of all imported plant and equipment.

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 Price and Total Price as there are currencies.

	Country of Origin Declaration Form		
Item	Description	Code	Country

ODISHA POWER TRANSMISSION CORPORATION LIMITED

NAME OF THE WORK:- Design, Supply and Installation of Sub-Stations & Transmission Lines for Construction of 2X20 MVA-132/33 KV Sub-station at Thuapali & its associated 132 KV LILO line from 132 KV Katapali - Bargarh line (Line length- 22.833Kms approximately) in Odisha State of India under PACKAGE-8 Under Japan International Cooperation Agency (JICA)'s ODA Loan.

Loan Agreement No: [ID-P245] - FB No: [CPC/JICA/ICB/08/15-16/......]- Refer

Reference Identification No: [OPTCL/JICA/PKG-8]

Schedule No. 1. Plant and Mandatory Spare Parts Supplied from Abroad

	NAME OF THE BIDDER						
				ine h line ßKms	Unit	Price ²	
Item	DESCRIPTION OF ITEMS(SCHEDULE-2-Line) SUPPLY OF FOLLOWING EQUIPMENT & MATERIALS (As per Technical Specification)	Code ¹	UNITS	Quantity for: 132 KV LILO line from 132 KV Katapali - Bargarh line to Thuapali (Line length- 22.833Kms approximately)	In Foreign Currency	CIP	Total Price ²
				(1)	(2)	(3)	(1) x (3)
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) (40 nos)		MT	137.2			
1.1.1	+3 EXTENSION (Nominal unit weight 0.611 MT) (6 nos)		МТ	3.666			
1.1.2	+6 EXTENSION (Nominal unit weight 1.349 MT) (2 nos)		МТ	2.698			
1.2	PB TYPE (30 deg ANGLE) TOWERS (Nominal unit weight 4.973 MT) (25nos)		МТ	124.325			
1.2.1	+3 EXTENSION (Nominal unit weight 1.018 MT) (3 Nos)		МТ	3.054			
1.2.2	+6 EXTENSION (Nominal unit weight 2.104 MT) (2 nos)		MT	4.208			
1.3	PC TYPE (60 deg ANGLE) TOWERS (Nominal unit weight6.214 MT) (9nos)		МТ	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			

1 1	TEMPLATES				
	PA (Nominal unit weight 0.665 MT)(4 Nos.)	NT	2.66		
	PB (Nominal unit weight 0.602 MT)(1 Nos.)	MT MT	0.602		
		MT	0.904		
1.4.5	PC (Nominal unit weight 0.904 MT)(1 Nos.) WEIGHT OF THE STRUCTURES (Including Tower stubs, & Foundation Nut and		337.481		
1.5	Bolts	MT			
	Weight of different type G.I Nuts and Bolts	MT	16.874		
2.0	Supply of the following tower accessories as per technical specification and as				
_	directed by the engineer in charge.				
	EARTHING DEVICE	Nos.	74		
	DANGER BOARD	Nos.	74		
	NUMBER PLATE	Nos.	74		
	PHASE PLATE	Nos.	444		
	BIRD GUARD	Nos.	240		
	ANTICLIMBING DEVICE	Nos.	74		
2.7	CIRCUIT PLATE	Nos.	148		
	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.				
	ACSR PANTHER	Kms.	139.05		
	POWER CONDUCTOR ACESSORIES				
	For ACSR PANTHER				
	VIBRATION DAMPER	Nos.	888		
	MID SPAN JOINT	Set	139		
	REPAIR SLEEVE	Set	139		
4.1.4	PG CLAMP FOR ACSR PANTHER	Set	24		
	Supply of OPGW fibre Optic Cable for speech, data & protection				
5.1	48Fibre(DWSM)OPGW fibre Optic Cable	Kms.	23.175		
	OPGW hardware set like suspension Asembly, Tensin Assembly(Dead end assembly,				
5.2	Pass through assembly) ,Vibration Damper,Down Lead Clamp Assemblies for 24/48	Kms.	23.175		
	Fibre(DWSM) OPGW, Joint Box				
	Supply of the following Anti fog type disc insulators as per the technical				
6.0	specification and as per the instruction of the Engineer in charge.				
	90 KN Disc Insulator	Nos.	3402		
6.2	120 KN Disc Insulator	Nos.	5670		
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 insulator.	Nos.	120		
7.1.2	Double suspension Hard wares fittings.(AGS type) suitable for 90 KN insulator.	Nos.	120		
	Single tension Hard wares fittings suitable for 120 KN insulator.	Nos.	276		
	Double tension Hard wares fittings suitable for 120 KN insulator.	Nos.	132		
	"D" Shackle	Nos.	100		
	Hanger	Nos.	240		

7.1.7	U'-Bolt.		Nos	40			
	TOTAL OF Schedule-1 Line To Schedule-6 Grand Summary						
		Name of E	Bidder:				
		Signature of Bidder:					

¹ Bidders shall enter a code representing the country of origin of all imported plant and equipment. 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 Price and Total Price as there are currencies.

Country of Origin Declaration Form

Item	Description	Code	Country

NT 4	ODISHA POWER TRANSMISSION CORPORATION LIMITED NAME OF THE WORK:- Design, Supply and Installation of Sub-Stations & Transmission Lines for Construction of 2X20 MVA-132/33 KV Sub-station at Thuapali & its							
	ME OF THE WORK:- Design, Supply and Installation of Sub-Stations & Transmission Lines for Construsion sociated 132 KV LILO line from 132 KV Katapali - Bargarh line (Line length- 22.833Kms approximately International Cooperation Agency (JICA)'s ODA L) in Odi						
Loan Agreement No: [ID-P245] - IFB No: [CPC/JICA/ICB/08/15-16/]- Reference Identification No: [OPTCL/JICA/PKG-8]								
NOTICE INVITING TENDER- & BID DOCUMENT No.: - TENDER- Deogarh JICA PACKAGE- 8/ 2016								
Schedule No. 2. Plant and Mandatory Spare Parts Supplied from Within the Employer's Country								
	NAME OF THE BIDDER							
Item	DESCRIPTION OF ITEMS(SCHEDULE-2-SS) SUPPLY OF FOLLOWING EQUIPMENT & MATERIALS (As per Technical Specification)	UNITS	QUANTITY: for Construction of 2X20 MVA, 132/33 KV S/S,Thuapali (132 KV Bay-05 Nos.: 02 FDR, 02 TRF , 01 B/C, 2nos unequipped spare bay) & (33 KV Bay-08 Nos.: 05FDR, 02 TRF & 01 B/C)	Unit Price ²	Total Price ²			
	145 KV,800-400-200 A,31.5 KA,4CORE SINGLE PHASE CURRENT TRANSFORMER (3 NOS PS CLASS & 1 NO.	NOS	<u>(1)</u> 15	(2)	(1) x (2)			
	0.2s CLASS)	1100	10					
2 2.1	145 KV,1250A,31.5KA,ISOLATORS S/I WITH OUT EARTH SWITCH	NOS	9					
	D/I WITH SINGLE EARTH SWITCH	NOS	2					
	D/I WITHOUT EARTH SWITCH	NOS	2					
	145 KV, 6600pF, 3CORE, SINGLE PHASE CAPACITOR VOLTAGE TRANSFORMER	NOS	6					
	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	18					
7	145KV, 3150A, 40KA, SF6, CIRCUIT BREAKER WITH SUPPORTING STRUCTURE	SET	5					
	36 KV,800-400-200,25KA,3 CORE SINGLE PHASE CURRENT TRANSFORMER(2 NOS PS CLASS & 1 NO. 0.2s CLASS)	NOS	18					
	36 KV, 800-400-200, 25KA, 4 CORE SINGLE PHASE CURRENT TRANSFORMER (3 NOS PS CLASS & 1 NO. 0.2s CLASS)	NOS	6					
	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 36 KV, 2 CORE, SINGLE PHASE, IV I (1 CORE SP & OTHER CORE 0.25)	NOS	8		
		° 27		
13 33 KV Bus Post Insulators	NOS	27		
14 BUS BAR & CIRCUIT MATERIALS	-			
14.1 TENSION & SUSPENSION ANTI FOG TYPE INSULATOR	NOO	4.040		
14.1.1 120 kN ANTIFOG INSULATOR for Double Moose cond (TENSION) for 132kV & 33kV side	NOS	1,240		
14.1.2 90 kN ANTIFOG INSULATOR for Double/ Single Moose cond (SUSPENSION) for 132kV & 33kV side	NOS	350		
14.2 ACSR MOOSE CONDUCTOR	KMS	4		
14.3 HARDWARES & FITTINGS/SPACERS/CLAMP & CONNECTORS	NIGO	4.0	-	
14.3.1 132 KV Single Tension H/W fitting suitable for twin ACSR Moose	NOS	18		
14.3.2 132 KV Single suspension H/W fitting suitable for single ACSR Moose	NOS	24		
14.3.3 132 KV Single suspension H/W fitting suitable for twin ACSR Moose	NOS	3		
14.3.4 132 KV Single Tension H/W fitting suitable for single ACSR Moose	NOS	42		
14.3.5 33 KV Single Tension H/W fitting suitable for single ACSR Moose	NOS	30		
14.3.6 33 KV Single Suspension H/W fitting suitable for single ACSR Moose	NOS	27		
14.3.7 33 KV Single Tension H/W fitting suitable for twin ACSR Moose	NOS	18		
14.3.8 132 KV 'T' Clamp for single Moose run with single Moose ACSR drop	NOS	60		
14.3.9 132 KV 'T' Clamp for twin Moose run with single Moose ACSR drop	NOS	15		
14.3.10 33 KV 'T' Clamp for single Moose run with single Moose ACSR drop	NOS	78		
14.3.11 33 KV 'T' Clamp for twin Moose run with single Moose ACSR drop	NOS	39		
14.3.12 132 KV PI Clamp	NOS	18		
14.3.13 Spacer for Twin Bus ACSR 132 KV Bus	NOS	54		
14.3.14 Spacer for Twin Bus ACSR 33 KV Bus	NOS	22		
14.3.15 132 KV LA Clamp	NOS	12		
14.3.16 132 KV CVT Clamp	NOS	12		
14.3.17 132 KV CT Clamp(BIMETALLIC)	NOS	36		
14.3.18 132 KV IVT Clamp	NOS	6		
14.3.19 132kKV Isolater Pad Clamp	NOS	127		
14.3.20 132 KV CB Clamp	NOS	36		
14.3.21 33 KV PI Clamp	NOS	27		
14.3.22 [33 KV Isolator pad clamp	NOS	117		
14.3.23 33 KV LA Clamp	NOS	27		
14.3.24 33 KV CT Clamp	NOS	48		
14.3.25 33 KV IVT Clamp	NOS	3		
14.3.26 33 KV CB Clamp	NOS	48		
14.3.27 PG Clamp for ACSR Moose	NOS	48		
14.3.27 PG clamp for ACSR Modese 14.4 EARTH SPIKES & IT'S HARDWARES & FITTING	1103	40		
	OFT	200		
14.4.1 FOR 132KV SIDE :26 NOS @ 7 MTRS LENGTH EACH	SET	26		
14.4.2 FOR 33 KV SIDE:25 NOS @ 5 MTRS EACH	SET	25		
14.5 SUBSTATION EARTHING SYSTEMS	MT	40.00		
14.5.1 EARTHING CONDUCTOR FOR BURRIAL : 75X10 mm GI Flat for laying (spacing maximum 5m both way)	MT	18.00		ļ
14.5.2 EARTHING CONDUCTOR: 50X6 mm GI Flat for Raiser from the burial earth mat to equipment, structure etc)	MT	9.00		
14.5.3 EARTHING DEVICE & ASSOCIATED ACCESSORIES (50 mm heavy duty GI PERFORATED PIPE 3 mtrs long for treated earth pit)	NOS	225		
14.5.4 EARTHING DEVICE & ASSOCIATED ACCESSORIES 40mm MS rod 3 mtrs long for non treated earth pit)	NOS	165		

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				
14.0	with its accessories as per TS.				
14.6.1	G.I Cable Trays(size: 450x75x2500mm)	MTRS	1550		
	G.I Cable Trays(size: 400x75x2500mm)	MTRS	2200		
	G.I Cable Trays(size: 150x75x2500mm)	MTRS	1350		
	Support G. I angle 50x50x6 mm for cable tray	MT	3		
	SUB STATION SWITCYARD BMK, AC CONSOLE & OTHER MARSHALLING BOXES	IVII	3		
		NOC	7		
	BAY MARSHALLING KIOSK	NOS			
	SWITCH YARD AC CONSOLE FOR LIGHTING	NOS	2		
	SWITCH YARD RECEPTACLE BOARD FOR TFR OIL FILTERATION	NOS	1		
	SWITCH YARD RECEPTACLE BOARD FOR WELDING & OTHER EMERGENCY	NOS	2		
	CT, PT & CVT Out Door Console Boxes (132 KV CT-5 Nos., 33 KV CT-08Nos., 132 KV CVT-2 No., 132 KV IVT-1 No., 33 KV IVT-1 No.)	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				
	T1S - 132 KV(NOMINAL UNIT WT- 1.2 MT) = 20Sets.	MT	24.00		
	T4S - 132 KV(NOMINAL UNIT WT- 1.2 MT) = 2036IS. T4S - 132KV (NOMINAL UNIT WT- 0.95 MT) = 06 sets	MT	5.70		
	T8S - 33KV(NOMINAL UNIT WT- 0.83 MT) = 10 Sets	MT	9.13	1	
	T9S - 33 KV(NOMINAL UNIT WT- 0.6 MT) = 14 Sets.	MT	8.40		
	DIFFERENT TYPE OF BEAMS WITH DETAILS	IVII	0.70		
	G1 - 132 KV(NOMINAL UNIT WT- 0.62 MT) =12 Sets.	MT	7.44		
	G1X - 132 KV (NOMINAL UNIT WT- 0.62 MT) = 2 Sets.	MT	1.24		
	$G_{1} = 132 \text{ KV} (\text{NOMINAL UNIT WT- 0.9 MT}) = 26 \text{ Sets}$	MT	5.40		
	$G_{1,2}$ - 132 KV(Keach two beams of G1 type) (NOMINAL UNIT WT- 1.25 MT) =2	MT	2.50	-	
	G6 - 33KV (NOMINAL UNIT WT- 0.53 MT) = 04 Sets.	MT	2.12	-	
	G4 - 33KV(NOMINAL UNIT WT- 0.4MT) = 9 Sets.	MT	3.60	-	
	G4X - 33KV (NOMINAL UNIT WT- 0.52 MT) = 5 Sets.	MT	2.60	-	
	TOTAL WEIGHT OF COLUMN & BEAM	MT	72.13		
	SWITCH YARD EQUIPMENT STRUCTURES (LATTICE TYPE) FOR 132/33 KV CLASS INCLUDING FOUNDATION		72.15		
15.4	BOLTS & NUTS.				
15 4 1	ISOLATORS-132KV				
	ISULATORS-T32KV S.I.WITH & WITHOUT E/S (Unit weight - 658.767 Kg) =9 Nos	MT	5.93		
	D.I. WITHOUT E/S (Unit Weight - 979.10 Kg) = 2 Nos.	MT	1.96	-	
	D.I. WITHOUT E/S (Unit Weight - 3/3.10 Kg) = 2 Nos. D.I. WITH E/S (Unit Weight - 1120.559 Kg) = 2 Nos.	MT	2.24	-	
	ISOLATORS-33 KV	IVII	2.24		
	S.I. WITHOUT E/S (Unit weight - 294.893 Kg) =9 Nos.	MT	2.65		
	D.I. WITHOUT E/S (Unit weight - 294.895 Kg) = 9 Nos.	MT	1.31		
	D.I. WITHOUT E/S (Unit weight - 670.555 Kg) = 2 Nos. D.I. WITH E/S (Unit weight - 670.555 Kg) =5 Nos.	MT	3.35		
	CTS-132 KV (Unit Weight - 214.546 Kg) = 15 Nos.	MT	3.22		
	CTS-132 KV (Unit Weight - 148.80 Kg) = 18 Nos.	MT	2.68		
	CVTS-132 KV (Unit Weight - 236.628 Kg) = 6Nos.	MT	1.42		
	VTS-132 KV (Unit Weight - 230.028 Kg) = 6108.	MT	0.69		
	IVTS-33 KV (Unit Weight - 124.336 Kg) = 3 Nos	MT	0.37		
	Surge Arrester-132 kV (Unit Weight - 179.893 Kg) = 12 Nos	MT	2.16		
	BPI-132 KV (Unit Weight - 309.883 Kg) = 18Nos	MT	5.58		
	BPI-33 KV (Unit Weight - 148.80 Kg) = 15 Nos	MT	2.23		
	NCTS (Unit Weight - 138.24 Kg) = 4 Nos	MT	0.55		
	TOTAL WEIGHT OF EQUIPMENT STRUCTURE	MT	36.35		
	Total weight of GI Nuts and bolts for the above Column, Beam & equipment structures	MT	6.50		
16	GENERAL EQUIPMENT & SUBSTATION ACCESSORIES				
	POWER CABLES,1.1KV,XLPE/PVC ARMOURED, ALUMINIUM CONDUCTOR (As per Specification)				
16.1.1	XLPE 3.5 CX300 mm ²	MTRS	500		

40.4.0	2			
	XLPE 3.5 CX185 mm ²	MTRS	300	
	XLPE 3.5 CX120 mm ²	MTRS	200	
	PVC 3.5 CX70 mm ²	MTRS	600	
16.1.5	PVC 3.5 CX35 mm ²	MTRS	1750	
16.1.6	PVC 4 CX 16 mm ²	MTRS	1000	
16.1.7	PVC 4 CX 6 mm ²	MTRS	3750	
	PVC 2CX 6 mm ²	MTRS	2200	
	CONTROL CABLES, 1.1 KV, PVC, STRANDED COPPER(As per specification)			
	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	
	7CX 2.5 mm ²	MTRS	5500	
	10 CX 2.5 mm ²	MTRS	10000	
	12 CX 2.5 mm ²	MTRS	9000	
	16 CX 2.5 mm ²	MTRS	5000	
	19 CX 2.5 mm ²	MTRS	2000	
	1CX 120 mm ² BAT TO BAT CHARGER & CHARGER TO DCDB	MTRS	600	
10.2.3	ACCESSORIES FOR PLCC SYSTEM With OPGW cable	WIR5	600	
	24 Fibre Optic Approach cable along with HDPE Pipes	Kmtr	0.5	
17.1	Optical line Terminal Equipment(OLTE) -STM4 type SDH equipment with integrated MUX & tributary cards for	No	0.5	
17.2	speech & data ports for interfacing of Speech & data which should be compatible with existing OPTCL system	NO	1	
17.3	Supply of FODP(Fibre Optic Distribution Panel)48 F: Indoor type,rack mounted with FCPC coupling and pig tails(DWSm Fibre)	No	1	
	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	
17.5	48 V, 300 AH, maintenance free VRLA Battery set.	Set	1	
	SMPS based battery charger of 75A suitable for 48V VRLA battery.	No	1	
	2.5 sq. mm 2 core control cable(power supply,Transducer/MFT PT supply)	Metre	500	
	2.5 sq. mm multi strand 4 core control cable(Transducer/MFT CT, supply)	Metre	500	
	1.5 sq. mm 10 core control cable(Digital Input)	Metre	200	
	10 sq. mm 2 core multi strand control cable(Battery)	Metre	100	
	Earth Flat, Cable Tray, Telephone cable, ACDB, DCDB, Foundation rail, Junction Box,.	Set	L.S	
	SUPPLY OF POWER TRANSFORMER, STATION TRANSFORMER & OTHER MATERIALS FOR MEETING THE AUXILIARY SUPPLY OF THE SUB-STATION AS PER TECHNICAL SPECIFICATION			
	POWER TRANSFORMER 132/33KV,20MVA (AS PER SPECIFICATION)	NOS	2	
18.2	STATION TRANSFORMER 33KV/433V,250 KVA (AS PER SPECIFICATION)	NOS	2	
18.3	Supply of materials for erection of station transformers			
18.3.1	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	
	33 KV AB SWITCH IN 33 KV SIDE(600AMP) including required GI pipe(horizontal & vertically down) & handle for operation of AB switch	SETS	2	
18.3.3	HG fuse set for 33 KV side of the Station transformer including base(each set comprises three single HG fuse)	SETS	2	

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18.3.4	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	SETS	2		
	OUTGOING SIDE AND SUITABLE BUS BAR ARRANGEMENT FOR TERMINATION of incoming cable from	02.0	-		
40	transformer & outgoing cable to Main ACDB.				
19	Switch yard lighting: Design, engineering, procurement of labour, material including all associated works for				
	construction of switch yard lightings as per technical specification and approved drawings. The fixture shall be of				
	reputed make (Philips/CGL/Bajaj) and fixtures shall be LED and proper cabling from the lighting outdoor distribution				
	boards to the junction boxes and from junction boxes to the fixtures. The lighting fixtures are to be installed on the				
19.1	switch yard structures. The quantity of such fixtures are to be designed and to be ascertained. SUB-STATION SWITCH YARD LIGHTING, IT INCLUDES SUPPLY OF FIXTURES & LAMPS (LED) of reputed make				
15.1	(Philips/CGL/Bajaj) with switch gear, GI Conduit etc. (Lighting fixtures are to be fixed rigidly on the Column at a suitable	SET	46		
	height so that the required lux can be achieved).(150 watt each)	3L1	40		
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).(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).(100 watt each) for Street Light.	SET	25		
		SET	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	SET	25		
	HAVE PROVISION OF FUSES, BUSES, CONNECTORS FOR CABLE IN AND OUT.				
10.2.2	OUTDOOD WOOK of a generative ODOA short duty bat die solveriesed FOD STREET HOUT HAVING A NOS 200				
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 CABLES(3.5 CORE 120 SQMM)	NO	1		
	OUTDOOR KIOSK TO THE STREET LIGHT POLES AND 4CX6 SQMM FROM POLE TO POLE AND 2CX6 SQMM	NO	1		
	FROM POLE TO LIGHTING FIXTURES.				
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	NO	1		
	SQMM FROM KIOSK TO EACH QUARTER.				
20	2 TR CAPACITY 5-STAR rated SPLIT AIR CONDITIONING UNITS WITH REMOTE CONTROL FACILITY:				
	INCLUDING SUPPLY OF AIR CONDITIONERS, VOLTAGE STABILISER, CONTROL BOXES ETC FOR				
	COMPLETING THE A.C SCHEME.(AS PER SPECIFICATION) FOR CONTROL ROOM, CARRIER ROOM &	SET	20		
	CONFERENCE ROOM.				
21	CIDE FIGUEINO OVOTEN/DODTADUE AND MUEEL MOUNTED OFTO FOD CONTROL DOON FOUNDATING UKE				
	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)				
	FOAM TYPE-9 LTRS	NOS	4		
	DRY CHEMICAL POWDER(TROLLEY MOUNTED)- 25 KGS	NOS	4		
	DRY POWDER TYPE -6 KGS	NOS	4		
	CO ₂ - 4.5 KGS	NOS	10		
	CO ₂ - 9.0 KGS	NOS	10		
		NOS	4		
	CO ₂ (TROLLY MOUNTED)- 22.5 KGS				
	Water type- 9 LTRS	NOS NOS	4 4		
	Foam type - 50 LTR	SET	6		
	FIRE BUCKET (6 NOS IN EACH STAND) WITH STAND With Canopy arrangement PROTECTION,CONTROL METERING, EVENT LOGGER,BUS BAR PROTN PAN,COMM PAN, RELAY TOOL KITS	-	0		
~~	AS PER TECH SPEC				
22.1	TIME SYNCH EQUIPMENT	NOS	1		
		1100		I	1

22.3	132 KV SIDE (SIMPLEX TYPE PANEL)			
	FEEDER CONTROL PANEL	NOS	2	
	FEEDER RELAY PANEL	NOS	2	
	TRANSFORMER CONTROL PANEL(FOR 132 KV SIDE OF 132/33 KV POWER TRANSFORMER)	NOS	2	
22.3.4	TRANSFORMER RELAY PANEL(FOR 132 KV SIDE OF 132/33 KV POWER TRANSFORMER)	NOS	2	
	BUSCOUPLER CONTROL	NOS	1	
	BUSCOUPLER RELAY PANEL	NOS	1	
22.3.7	COMMON PANEL (KP-1)	NOS	1	
	33 KV SIDE			
	FEEDER CONTROL & RELAY PANEL	NOS	5	
22.4.2	TRANSFORMER CONTROL & RELAY PANEL	NOS	2	
	BUSCOUPLER CONTROL & RELAY PANEL	NOS	1	
23	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	
	ACDB (HAVING 400A MCCB) AS PER SPECIFICATION (AC DB-1, AC DB-2 WITH B/C)	SET	1	
	MAIN LIGHTING DISTRIBUTION BOARD (HAVING 250A MCCB AS INCOMER)AS PER SPECIFICATION (WITH DB-1, DB-2 & B/C)	SET	1	
23.1.4	INDOOR LIGHTING DISTRIBUTION BOARD AS PER SPECIFICATION. (WITH DB-1,DB-2 & B/C)	SET	1	
23.1.5	EMERGENCY LIGHTING DISTRIBUTION BOARD	SET	1	
23.1.6	INDOOR RECEPTACLE BOARD	SET	1	
23.2	DC SYSTEM			
	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	
23.2.2	220 V DC EMERGENCY DISTRIBUTION BOARD	SET	1	
23.2.3	BATTERY (350 AH PLANTE TYPE) FOR 220 V DC	SET	1	
23.2.4	BATTERY CHARGER FOR 220 V, 350 AH BATTERY (FLOAT AND FLOAT CUM BOOST)	SET	1	
24	DISTLED WATER PLANT OF 10 LTR/HR FOR BATTERY BANKS	SET	1	
	WALKIE TALKIE SET	SET/ PAIR	2	
	PORTABLE ALUMINIUM LADDER EXTENDABLE TYPE OF ADEQUATE HEIGHT TO BE USED FOR MAINTENANCE OF EQUIPMENT INSIDE SWITCH YARD.	NOS	2	
	PEDESTAL MOUNTED WHEEL FITTED DERRICK FOR LIFTING/ LOWERING OF MATERIALS UP TO 1.5 TON CAPACITY.	SET	1	
	POWER WINCH NEAR STORE SHED FOR HANDLING MATERIALS UPTO 5 TON CAPACITY.	SET	1	
	WATER COOLER WITH WATER PURIFIER SYSTEM	NOS	1	
	MAINTENANCE TESTING EQUIPMENT (AS PER ANNEXURE - I , INDICATED IN TS-TIMK-SCHEDULE OF REQUIREMENTS OF MAINTENANCE EQUIPMENT)	SET	1	
	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	
	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	
	BEST QUALITY & APPROVED MAKE INSULATING MAT (Confirming to IS:15652:2006) TO BE KEPT INFRONT OF ALL PANELS, BOARDS ETC.	NOS	37	
	TOTAL OF SUBSTATION (PLANT) SUPPLY			

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Item	DESCRIPTION OF ITEMS SUPPLY OF MANDATORY SPARES FOR THE FOLLOWING EQUIPMENTS. (As per Technical Specification)	UNITS	Quantity	Unit Price ²	Total Price ²
1	145 KV,(800-400-200 A),31.5KA,4CORE SINGLE PHASE CURRENT TRANSFORMER INCLUDING TERMINAL CONNECTOR	NOS	2		
2	145 KV,1250A,31.5KA,ISOLATORS				
2.1	MALE & FEMALE CONTACTS	SET	1		
2.2	POWER CONTACTOR, RELAYS, MCBs,	SET	1		
2.3		SET	2		
2.4	MOTOR WITH GEAR ASSEMBLY & BEVEL GEAR ASSEMBLY COMPLETE.	SET	1		
2.5	AUXILIARY SWITCH CONTACTS ASSEMBLY	SET	1		
2.6	EARTHING ROD & BLADE CONTACT SIDE	SET	1	1 1	
2.0	HINGE PINS, TERMINAL CONNECTOR, TERMINAL PAD	SET	1		
2.1	POST INSULATOR SUPPORT	SET (T	+	
2.8	FOST INSULATOR SUFFORT	3NOS. PER SET)	1		
3	145 KV,6600pF,3CORE,SINGLE PHASE CAPACITOR VOLTAGE TRANSFORMER INCLUDING TERMINAL CONNECTOR	NOS	1		
4	120 KV,METAL OXIDE 10 KA, CLASS III SURGE ARRESTOR, COMPLETING WITH INSULATING BASE & SURGE MONITOR.	NOS	2		
5	145 KV .2 CORE, SINGLE PHASE, IVT INCLUDING TERMINAL CONNECTOR	NOS	1		
6	132 KV Bus Post Insulators	NOS	2		
7	145KV,3150A,40KA,SF6,CIRCUIT BREAKER				
7.1	COMPLETE ONE POLE ASSEMBLY OF BREAKER	NOS	1		
7.2	SPRING CHARGING MOTOR	NOS	1		
7.3	BREKER AUXILIARY CONTACTS	SET	1		
7.4	POWER CONTACTORS, RELAYS, MCBs, SWITCHES, FUSES, PUSH BUTTONS, RESISTORS, PRESSURE SWITCHES, LIMIT SWITCHES, ETC AS PER APPROVED SCHEMATIC.	SET	1		
7.5	DENSITY MONITORING SYSTEM (IF REQUIRED)	SET	1		
7.6	CLOSING COIL	NOS	4		
7.7	TRIPPING COIL	NOS	4		
7.8	SF6 GAS FILLING DEVICE	NOS	1		
7.9	SET OF GASKETS ."O" RINGS SEALS PER CIRCUIT BREAKER	SET	1		
8.1	36 KV,(800-400-200 A),25KA,3CORE SINGLE PHASE CURRENT TRANSFORMER	NOS	2		
8.2	36 KV,(800-400-200 A),25KA,4 CORE SINGLE PHASE CURRENT TRANSFORMER	NOS	1		
9	36 KV.1250A.25KA.ISOLATORS				
9.1	MALE & FEMALE CONTACTS	SET	1		
9.2	POWER CONTACTOR, RELAYS, MCBs, SWITCHES, FUSES, PUSH BUTTONS, RESISTORS ETC AS PER APPROVED SCHEMATIC.	SET	1		
9.3	LIMIT SWITCH	SET	2		
9.4	MOTOR WITH GEAR ASSEMBLY & BEVEL GEAR ASSEMBLY COMPLETE.	SET	1		
9.5		CET.	1		
	AUXILIARY SWITCH CONTACTS ASSEMBLY EARTHING ROD & BLADE CONTACT SIDE	SET SET	1	+	
	HINGE PINS,TERMINAL CONNECTOR,TERMINAL PAD	SET	1		

·				1	
		SET (
9.8	POST INSULATOR SUPPORT	3NOS.	1		
		PER SET)			
	30 KV.METAL OXIDE, 10 KA, CLASS II SURGE	í í			
10	ARRESTOR COMPLETE WITH INSULATOR BASE AND SURGE MONITOR	NOS	3		
11	36 KV ,2 CORE,SINGLE PHASE,IVT	NOS	1		
	INCLUDING TERMINAL CONNECTOR				
12	36KV, 1250A,25KA,VACUUM CIRCUIT BREAKER				
12.1	ONE COMPLETE POLE ASSEMBLY OF	SET	1		
12.1	CIRCUIT BREAKER	SET	1		
12.2	TRIPPING CIOLS	NOS	4		
	CLOSING COIL	NOS	4		
	SPRING CHARGING MOTOR	NOS	1		
		SET	1		
12.5	AUXILIARY SWITCH CONTACTS ASSEMBLY	SET	1		
12.6	SET OF GASKET, "O" RINGS, SEALING PER	SET	1		
	CIRCUIT BREAKER	-			
	POWER CONTACTORS,RELAYS,MCBs,				
12.7	SWITCHES, FUSES, PUSH BUTTONS, RESISTORS, PRESSURE SWITCHES, LIMIT SWITCHES, ETC AS PER	SET	1		
	APPROVED SCHEMATIC.				
13	33 KV Bus Post Insulators	NOS	3		
	BUS BAR & CIRCUIT MATERIALS		-		
	120 KN ANTIFOG INSULATOR STRINGS for Double Moose cond (TENSION)-132 KV	SET	2		
	120 kN ANTIFOG INSULATOR STRINGS for Single Moose cond (TENSION)-132 KV	SET	2		
	120 KN ANTIFOG INSULATOR STRINGS for Double Moose cond (TENSION)-33 KV	SET	2		
14.4	120 KN ANTIFOG INSULATOR STRINGS for Single Moose cond (TENSION)-33 KV	SET	2		
14.5	90 kN ANTIFOG INSULATOR STRINGS for Double/ Single Moose cond (SUSPENSION)-132 KV	SET	2		
14.6	90 kN ANTIFOG INSULATOR STRINGS for Double/ Single Moose cond (SUSPENSION)-33 KV	SET	2		
15	ACSR MOOSE CONDUCTOR	MTRS	250		
		SET			
		(EACH			
10	HARDWARES & FITTINGS/SPACERS/CLAMP	•	1		
16	& CONNECTORS ETC. FOR 132 KV & 33 KV	TYPE	1		
		THREE			
		NOS.)			
17	GENERAL EQUIPMENT & SUBSTATION				
1/	ACCESSORIES				
	POWER CABLES.1.1KV.XLPE & PVC.ARMOURED,				
17.1	ALUMINIUM CONDUCTOR(As per Specification)				
1711		DCC	4		
-	3.5 CX300 mm ² (ONE PIECE OF MAXM. LENGTH OF CABLE USED)-XLPE	PCS.	1		
17.1.2	3.5 CX185 mm ² (ONE PIECE OF MAXM. LENGTH OF CABLE USED)-XLPE	PCS.	1		
17.1.3	3.5 CX120 mm ² (ONE PIECE OF MAXM. LENGTH OF CABLE USED)-XLPE	PCS.	1		
-	3.5 CX70 mm ² (ONE PIECE OF MAXM. LENGTH OF CABLE USED)-PVC	PCS.	1		
	3.5 CX35 mm ² (ONE PIECE OF MAXM. LENGTH OF CABLE USED)-PVC	PCS.	1		
	4 CX 16 mm ²⁻ -PVC	MTRS	250		
		MTRS		+	1
	4 CX 6 mm ² -PVC	-	250		
	2CX 6 mm ² -PVC	MTRS	250		
17.2	CONTROL CABLES, 1.1 KV, PVC, STRANDED COPPER(As per specification)				
17.2.1	4 CX 2.5 mm ² (ONE DRUM HAVING LENGTH OF 500 MTRS)	Mtrs	500		
17.2.2	5 CX 2.5 mm ² (ONE DRUM HAVING LENGTH OF 500 MTRS)	Mtrs	500		
	7 CX 2.5 mm ² (ONE DRUM HAVING LENGTH OF 500 MTRS)	Mtrs	500		
	10 CX 2.5 mm ² (ONE DRUM HAVING LENGTH OF 500 MTRS)	Mtrs	500		
	12 CX 2.5 mm² (ONE DRUM HAVING LENGTH OF 500 MTRS)	Mtrs	250		
17.2.5		IVICI S	230	1	

17.2.6	16 CX 2.5 mm ² (ONE DRUM HAVING LENGTH OF 250 MTRS)	Mtrs	250	
-	19 CX 2.5 mm ² (ONE DRUM HAVING LENGTH OF 250 MTRS)	Mtrs	250	
		IVILIS	230	
17.2.8	1CX 120 mm ²	MTRS	50	
	BAT TO BAT CHARGER & CHARGER TO DCDB			
	CARRIER COMMUNICATION & OTHER MATERIALS			
	ONE COMPLETE CELL ASSEMBLY OF BATTERY(FOR 48 V VRLA TYPE BATTERY 300 AH,)	NO	1	
	ONE COMPLETE CELL ASSEMBLY OF BATTERY(FOR 220 V PLANTE TYPE BATTERY 350 AH,)	NO	2	
	ONE COMPLETE SET OF ELECTRONIC CARDS FOR BATTERY CHARGER FOR 300 AH (48V)	SET	1	
	ONE COMPLETE SET OF ELECTRONIC CARDS FOR BATTERY CHARGER FOR 350 AH (220V)	SET	1	
18	PROTECTION, CONTROL METERING, EVENT LOGGER, BUS BAR PROTN PAN, COMM PAN, RELAY TOOL			
10	KITS AS PER TECH SPEC AND BOQ FOR PCM			
	132 KV SIDE			
18.1.1	DISTANCE PROTECTION RELAY	NOS	1	
18.1.2	OVER CURRENT & EARTH FAULT RELAY	NOS	1	
	MASTER TRIP RELAY	NOS	2	
18.1.4	DIFFERENTIAL PROTECTION RELAY	NOS	1	
18.1.5	TRIP SUPERVISION RELAY	NOS	3	
18.1.6	OTHER AUXILIARY RELAYS(EACH 1 NO. OF DIFFERENT TYPE)	SET	1	
18.1.7	ANNUNCIATOR	NOS	1	
18.1.8	DISCREPANCY CONTROL SWITCH			
	a) FOR CIRCUIT BREAKER	NOS	2	
	b) FOR ISOLATOR	NOS	2	
18.1.9	PROTECTION TRANSFER SWITCH	NOS	1	
18.1.10	AMMETER SELECTOR SWITCH	NOS	1	
18.1.11	VOLTMETER SELECTOR SWITCH	NOS	1	
	AMMETER ALONG WITH TRANSDUCER	SET	1	
18.1.13	VOLTMETER ALONG WITH TRANSDUCER	SET	1	
18.1.14	MW METER ALONG WITH TRANSDUCER	SET	1	
	MVAR METER ALONG WITH TRANSDUCER	SET	1	
18.2	33 KV SIDE			
18.2.1	OVER CURRENT & EARTH FAULT RELAY	NOS	1	
18.2.2	MASTER TRIP RELAY	NOS	2	
18.2.3	OTHER AUXILIARY RELAYS (EACH 1 NO. OF DIFFERENT TYPE)	SET	1	
18.2.4	ANNUNCIATOR	NOS	1	
18.2.5	CONTROL SWITCHES FOR			
	a) CIRCUIT BREAKER	NOS	2	
	b) ISOLATOR	NOS	2	
18.2.6	PROTECTION TRANSFER SWITCH	NOS	1	
	AMMETER SELECTOR SWITCH	NOS	1	
	VOLTMETER SELECTOR SWITCH	NOS	1	
18.2.9	AMMETER ALONG WITH TRANSDUCER	SET	1	
	VOLTMETER ALONG WITH TRANSDUCER	SET	1	
18.2.11	MW METER ALONG WITH TRANSDUCER	SET	1	
18.2.12	MVAR METER ALONG WITH TRANSDUCER	SET	1	
	TOTAL OF MANDATORY SPARE PARTS SUPPLY			
	TOTAL OF SUBSTATION-SCHEDULE-2- Plant and Mandatory Spare Parts (to Schedule No. 6 Gra	nd Summar	y)	
		Name of E	Bidder:	
		Signature of	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 No.-1".

	ODISHA POWER TRANSMISSION CORP	'ORA '	FION L	IMITED	
	ME OF THE WORK:- Design, Supply and Installation of Sub-Stations & Tra 132/33 KV Sub-station at Thuapali & its associated 132 KV LILO line from 33Kms approximately) in Odisha State of India under PACKAGE-8 Under . ODA Loan.	132 KV	Katapali - B	argarh line ((Line length-
	Loan Agreement No: [ID-P245] - FB No: [CPC/JICA/ICB/08/15-1 [OPTCL/JICA/PKG-8]	6/]-	Refer	ence Identific	cation No:
N	OTICE INVITING TENDER- & BID DOCUMENT No.: T	ENDER-	Deogarh	JICA PACK	AGE- 8/ 2016
	Schedule No. 2. Plant and Mandatory Spare Parts Supplied fro	om Wit	hin the En	ployer's Co	ountry
	NAME OF THE BIDDER				
Item	DESCRIPTION OF ITEMS(SCHEDULE-2-Line) SUPPLY OF FOLLOWING EQUIPMENT & MATERIALS (As per Technical Specification)	UNITS	Quantity for: 132 KV LILO line from 132 KV Katapali - Bargarh line to Thuapali (Line length- 22.833Kms approximately)	Unit Price ²	Total Price ²
			(1)	(2)	(1) x (2)
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) (40 nos)	МТ	137.2		

1.1.1	+3 EXTENSION (Nominal unit weight 0.611 MT) (6 nos)	MT	3.666	
1.1.2	+6 EXTENSION (Nominal unit weight 1.349 MT) (2 nos)	МТ	2.698	
1.2	PB TYPE (30 deg ANGLE) TOWERS (Nominal unit weight 4.973 MT) (25nos)	MT	124.325	
1.2.1	+3 EXTENSION (Nominal unit weight 1.018 MT) (3 Nos)	МТ	3.054	
1.2.2	+6 EXTENSION (Nominal unit weight 2.104 MT) (2 nos)	МТ	4.208	
1.3	PC TYPE (60 deg ANGLE) TOWERS (Nominal unit weight6.214 MT) (9nos)	МТ	55.926	
1.3.1	+3 EXTENSION (Nominal unit weight 1.119 MT) (2 nos)	MT	2.238	
1.3.2		MT	0	
	TEMPLATES			
1.4.1		MT	2.66	
	PB (Nominal unit weight 0.602 MT)(1 Nos.)	MT	0.602	
1.4.3	PC (Nominal unit weight 0.904 MT)(1 Nos.)	MT	0.904	
1.5	WEIGHT OF THE STRUCTURES (including Tower stubs, & Foundation Nut and Bolts)	MT	337.481	
1.7	Weight of different type G.I Nuts and Bolts	МТ	16.874	
2.0	Supply of the following tower accessories as per technical specification and as directed by the engineer in charge.			
2.1	EARTHING DEVICE	Nos.	74	
	DANGER BOARD	Nos.	74	
	NUMBER PLATE	Nos.	74	
	PHASE PLATE	Nos.	444	
	BIRD GUARD	Nos.	240	
2.6	ANTICLIMBING DEVICE	Nos.	74	
2.7	CIRCUIT PLATE	Nos.	148	
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.	139.05	
	POWER CONDUCTOR ACESSORIES			
	For ACSR PANTHER			
	VIBRATION DAMPER	Nos.	888	

4.1.3	REPAIR SLEEVE	Set	139	
4.1.4	PG CLAMP FOR ACSR PANTHER	Set	24	
5.0	Supply of OPGW fibre Optic Cable for speech, data & protection			
5.1	48Fibre(DWSM)OPGW fibre Optic Cable	Kms.	23.175	
5.2	OPGW hardware set like suspension Asembly, Tensin Assembly (Dead end assembly, Pass through assembly), Vibration Damper, Down Lead Clamp Assemblies for 24/48 Fibre (DWSM) OPGW, Joint Box	Kms.	23.175	
6.0	Supply of the following Anti fog type disc insulators as per the technical specification and as per the instruction of the Engineer in charge.			
	90 KN Disc Insulator	Nos.	3402	
6.2	120 KN Disc Insulator	Nos.	5670	
7.0	Supply of the following hard ware fittings suitable for ACSR Panther conductors as per the technical specification.			
-	For ACSR PANTHER			
7.1.1	Single suspension Hard wares fittings.(AGS type) suitable for 90 KN insulator.	Nos.	120	
7.1.2	Double suspension Hard wares fittings.(AGS type) suitable for 90 KN insulator.	Nos.	120	
7.1.3	Single tension Hard wares fittings suitable for 120 KN insulator.	Nos.	276	
7.1.4	Double tension Hard wares fittings suitable for 120 KN insulator.	Nos.	132	
7.1.5	"D" Shackle	Nos.	100	
	Hanger	Nos.	240	
7.1.7	U'-Bolt.	Nos	40	
	TOTAL OF LINE-2- line (to Schedule No. 6 Grand Summar	ry)		
			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 No.-1".

	ODISHA POWER TRANSMIS	SION	CORPORATI	ION LIM	ITED		
	OF THE WORK:- Design, Supply and Installation of Sub-Stations & Trans ed 132 KV LILO line from 132 KV Katapali - Bargarh line (Line length- 2 International Cooperation	22.833Kn	ns approximately) i	n Odisha Stat			-
	Loan Agreement No: [ID-P245] - IFB No: [CPC/JICA/ICB/08/	15-16/]- Reference	Identification	No: [OPTCL/.	JICA/PKG-8	l
	NOTICE INVITING TENDER- & BID DOCUMENT	Г No.:	- TENDER- D	eogarh JIC	A PACKAGE-	8/ 2016	
	Schedule No. 4. Instal	lation aı	nd Other Services	;			
	NAME OF THE BIDDER						
			of 2X20 (132 KV 01 B/C (33 KV 01 B/C)	Unit	Price ¹	Tot	al Price ¹
Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-4-S/s) ERECTION,TESTING & COMMISSIONING OF FOLLOWING EQUIPMENTS ALONG WITH CIVIL WORKS (As per Technical Specification)	UNIT	QUANTITY: for Construction of 2X20 MVA, 132/33 KV S/S,Thuapali (132 KV Bay-05 Nos.: 02 FDR, 02 TRF, 01 B/C ,2nos 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)	(1) x (2)	(1) x (3)
	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 7	132 KV Bus Post Insulators 145KV, 3150A, 40KA, SF6, CIRCUIT BREAKER WITH SUPPORTING STRUCTURE	NOS NOS	<u>18</u> 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	1			1

9.4	S/I WITH BEAM MOUNTED	NOS	2		
10	30 KV. METAL OXIDE SURGE ARRESTOR, 10KA, class II	NOS	27		
10	36 KV ,2 CORE,SINGLE PHASE,IVT(1 core 3P & other core 0.2s)	NOS	3		
11	36KV.1250A.25KA.VACUUM CIRCUIT BREAKER WITH SUPPORTING STRUCTURE	NOS	8		
13	33 KV Bus Post Insulators	NOS	27		
14	BUS BAR & CIRCUIT MATERIALS				
14.2	Supply of labour,T&P and other necessary arrangements for stringing of bus bar				
	conductors, hoisting of single or double insulator strings, 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. Single conductor	D 14	4000		
14.2.1	Twin Conductor	Per Mtr.	1000		
14.2.2		Per Mtr.	2500	 	
14.4	EARTH SPIKES & IT'S HARDWARES & FITTING				
14.4.1	FOR 132KV SIDE : 26 NOS @ 7 MTRS LENGTH EACH	SET	26		
14.4.2	FOR 33 KV SIDE: 25 NOS @ 5 MTRS EACH	SET	25	 	
14.5	SUBSTATION EARTHING SYSTEMS				
14.5.1	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 with back	MTRS	4000		
	filling and 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.				
14.5.2	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	MTRS	3600		
	finished ground level to the top of the structure and equipment shall be with 50X6 mm GI Flats, as				
1150	per approved drawing and specification. EARTHING DEVICE & ASSOCIATED ACCESSORIES (50 mm heavy duty GI PERFORATED				
14.5.3	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, supply of Bentonate powder and other	NOS	225		
	materials for the treated earth pit as per standard practice and as per specification.				
14.5.4	EARTHING DEVICE & ASSOCIATED ACCESSORIES 40mm MS rod 3 mtrs long for non treated earth	NOS	165		
	pit)	1105	100		
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		
14.6.2	G.I Cable Trays(size: 300x75x2500mm)	MTRS	2200		
14.6.3	G.I Cable Trays(size: 150x75x2500mm)	MTRS	1350		
14.6.4	Support G. I angle 50x50x6 mm for cable tray	MT	3	 	
14.7	SUB STATION SWITCYARD BMK, AC CONSOLE & OTHER MARSHALLING BOXES				
14.7.1	BAY MARSHALLING KIOSK	NOS	7		
14.7.2	SWITCH YARD AC CONSOLE FOR LIGHTING	NOS	2		
14.7.3	SWITCH YARD RECEPTACLE BOARD FOR TFR OIL FILTERATION	NOS	1		
14.7.4	SWITCH YARD RECEPTACLE BOARD FOR WELDING & OTHER EMERGENCY	NOS	2		
14.7.5	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		1/7	04.00		
15.1.1	T1S - 132 KV(NOMINAL UNIT WT- 1.2 MT) =20Sets.	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) =11Sets.	MT MT	9.13 8.40		
15.1.4	T9S - 33KV(NOMINAL UNIT WT- 0.6 MT) = 14 Sets. DIFFERENT TYPE OF BEAMS WITH DETAILS	IVI I	0.40		
15.2 15.2.1	G1 - 132 KV(NOMINAL UNIT WT- 0.62 MT) = 12 sets	MT	7.44		
	G1 - 132 KV(NOMINAL UNIT WT-0.62 MT) = 12 sets G1X - 132 KV (NOMINAL UNIT WT-0.62MT) =2Sets.	MT	1.24		
15.2.2 15.2.3	G1X - 132 KV (NOMINAL UNIT WT-0.62MT) = 2Sets. G2 - 132 KV(NOMINAL UNIT WT- 0.9 MT) = 06 Sets	MT	5.40		
15.2.3	$G_2 = 132 \text{ KV}(\text{Rominal ONT WI-0.9 MT}) = 06 \text{ Sets}$ G1,2 - 132 KV(Each two beams of G1 type) (NOMINAL UNIT WT-1.25 MT) = 2	MT	2.50		
13.2.4	G1,2 - 132 KV(Latit two beams of G1 type) (NOIVIINAL UNIT WT- 1.25 WT) = 2	IVÍ I	2.00		

15.2.5	G6 - 33KV (NOMINAL UNIT WT- 0.53MT) = 04 Sets.	MT	2.12			
15.2.6	G4 - 33KV(NOMINAL UNIT WT- 0.4 MT) =9Sets.	MT	3.60			
15.2.7	G4X - 33KV (NOMINAL UNIT WT- 0.52 MT) = 5 Sets.	MT	2.60			
15.3	TOTAL WEIGHT OF COLUMN & BEAM	МТ	72.13			
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. WITHOUT E/S (Unit weight - 658.767 Kg) = 9Nos	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) =9Nos.	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) = 5Nos.	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) = 18Nos	MT	2.68			
15.4.11	CVTS-132 KV (Unit Weight - 236.628 Kg) =6 Nos.	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			
	BPI-132 KV (Unit Weight - 309.883 Kg) = 18Nos	MT	5.58			
15.4.17	BPI-33 KV (Unit Weight - 148.80 Kg) =15Nos	MT	2.23			
15.4.18	NCTS (Unit Weight - 138.24 Kg) = 4 Nos	MT	0.55		T	1
15.4.19	TOTAL WEIGHT OF EQUIPMENT STRUCTURE	MT	36.35			
15.5	Total weight of GI Nuts and bolts for the above Column, Beam & structures	MT	6.50			
16	GENERAL EQUIPMENT & SUBSTATION ACCESSORIES					
16.1	POWER CABLES,1.1KV,XLPE/PVC ARMOURED, ALUMINIUM CONDUCTOR (As per					
16.1.1	Specification) XLPE 3.5 CX300 mm ²	MTRS	500			
16.1.2	XLPE 3.5 CX300 mm	MTRS	500 300			
16.1.3	XLPE 3.5 CX185 mm	MTRS	200			
16.1.4	PVC 3.5 CX70 mm ²	MTRS				
16.1.4	PVC 3.5 CX70 mm PVC 3.5 CX35 mm ²	MTRS	600 1750		-	
16.1.6	PVC 3.5 CX35 mm PVC 4 CX 16 mm ²	MTRS	1750		-	
16.1.7		MTRS			-	
16.1.8	PVC 4 CX 6 mm ²	MTRS	3750			
16.1.8	PVC 2CX 6 mm ² CONTROL CABLES,1.1 KV, PVC,STRANDED COPPER(As per specification)	MIRS	2200			
16.2.1	2 CX 2.5 mm2	MTRS	5500			
16.2.1		MTRS	5500			
16.2.2	4 CX 2.5 mm ²	MTRS	10500			
16.2.4	5 CX 2.5 mm ²	MTRS	4500			
16.2.4	7CX 2.5 mm ²		5500			
16.2.5	10 CX 2.5 mm ²	MTRS	10000			
16.2.0	12 CX 2.5 mm ²	MTRS MTRS	9000			
16.2.7	16 CX 2.5 mm ²		5000			
	19 CX 2.5 mm ²	MTRS	2000			
16.2.9	1CX 120 mm ² BAT TO BAT CHARGER & CHARGER TO DCDB	MTRS	600			
17	ERECTION OF MATERIALS FOR SPEECH , DATA FOR 132KV KATAPALLI-BARGARH LILO AT THUAPALLI					
17.1	24 Fibre Optic Approach cable along with HDPE Pipes	Kmtr	0.5			
17.2	Optical line Terminal Equipment(OLTE) -STM4 type SDH equipment with	No				
	integrated MUX & tributary cards for speech & data ports for interfacing of		1			
	Speech & data which should be compatible with existing OPTCL system		I I			
47.0					+	
17.3	Supply of FODP(Fibre Optic Distribution Panel)48 F: Indoor type,rack mounted	No	1			
	with FCPC coupling and pig tails(DWSm Fibre)					

17.4 17.5 17.6 17.7 17.8 17.9 17.10 17.11	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. 48 V, 300 AH, maintenance free VRLA Battery set. SMPS based battery charger of 75A suitable for 48V VRLA battery. 2.5 sq. mm 2 core control cable(power supply,Transducer/MFT PT supply) 2.5 sq. mm 10 core control cable(Digital Input) 10 sq. mm 2 core multi strand 4 core control cable(Battery) Earth Flat, Cable Tray, Telephone cable,ACDB, DCDB, Foundation rail, Junction Box.	No Set No Metre Metre Metre Metre Set	1 1 500 500 200 100 L.S		
18	ERECTION, FILTERATION, TESTING & COMMISSIONING OF POWER				
18.1	TRANSFORMER & ITS OTHER RELATED ACCESSORIES RECEIVING THE TRANSFORMERS AND ITS ACCESSORIES FROM NEAREST OPTCL STORES, DRAGGING AND INSTALLING ON THE PLINTH AND PLACING IN POSITION, ERECTION 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 INCLUDE ALL RELATED WORKS FOR ERECTION, TESTING AND 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	Nos	2		
18.2	ERECTION OF STATION TRANSFORMER & OTHER MATERIALS FOR MEETING THE AUXILIARY SUPPLY OF THE SUB-STATION AS PER TECHNICAL SPECIFICATION				
18.2.1	STATION TRANSFORMER 33KV/433V,250 KVA (AS PER SPECIFICATION)	NOS	2		
18.3	Supply of materials for erection of station transformers				
18.3.1	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		
18.3.2	33 KV AB SWITCH IN 33 KV SIDE(600AMP) including required GI pipe(horizontal & vertically down) & handle for operation of AB switch	SETS	2	 	
18.3.3	HG fuse set for 33 KV side of the Station transformer including base(each set comprises three single HG fuse)	SETS	2		
18.3.4	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.		2		

19	Switch yard lighting: Design, engineering, procurement of labour, material including all associated works for construction of switch yard lightings as per technical specification and approved drawings. The fixture shall be of reputed make (Philips/CGL/Bajaj) and fixtures shall be LED and proper cabling from the lighting outdoor distribution boards to the junction boxes and from junction boxes to the fixtures. The lighting fixtures are to be installed on the switch yard structures. The quantity of such fixtures are to be designed and to be ascertained. 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			
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).(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	SET	25			
19.2.2	(Philips/CGL/Bajaj).(100 watt each) for Street Light. 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			
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			
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			
10	CUD STATION LIGHTING (AS DED SPECIFICATION AND ADDROVED DRAWNOR (2014-1)					
19	SUB STATION LIGHTING (AS PER SPECIFICATION AND APPROVED DRAWINGS (Switch vard and other street area)					
20	Erection of 2 TR CAPACITY 5-STAR rated SPLIT AIR CONDITIONING UNITS WITH REMOTE CONTROL FACILITY: INCLUDING SUPPLY OF AIR CONDITIONERS,VOLTAGE STABILISER,CONTROL BOXES ETC FOR COMPLETING THE A.C SCHEME.(AS PER SPECIFICATION) FOR CONTROL ROOM, CARRIER ROOM & CONFERENCE ROOM ALONG WITH STABILIZER (5KVA, 130-270 V)	SET	20			
21	Erection of FIRE FIGHTING SYSTEM(PORTABLE AND WHEEL MOUNTED SETS FOR CONTROL ROOM,EQUIPMENT LIKE TRANSFORMER AND OTHER AREAS AS PER TECH					
04.4	SPEC(REFER TS-INST TO BIDDER BEFORE DESIGN-SL NO 16-ANNEXURE - I)	NCC	4			
21.1 21.2	FOAM TYPE-9 LTRS DRY CHEMICAL POWDER(TROLLEY MOUNTED)- 25 KGS	NOS NOS	4 4			
21.2	DRT CHEINIGAL FOWDER (TROLLET MOUNTED)- 23 RGS	NU5	4		l	

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	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		
21.8	Foam type - 50 LTR	NOS	4		
	FIRE BUCKET (6 NOS IN EACH STAND) WITH STAND With Canopy arrangement	SET	6		
	PROTECTION,CONTROL METERING, EVENT LOGGER,BUS BAR PROTN PAN,COMM PAN, RELAY TOOL KITS AS PER TECH SPEC				
22.1	TIME SYNCH EQUIPMENT	NOS	1		
22.3	132 KV SIDE (SIMPLEX TYPE PANEL)				
22.3.1	FEEDER CONTROL PANEL	NOS	2		
22.3.2	FEEDER RELAY PANEL	NOS	2		
22.3.3	TRANSFORMER CONTROL PANEL(FOR 132 KV SIDE OF 132/33 KV POWER TRANSFORMER)	NOS	2		
22.3.4	TRANSFORMER RELAY PANEL(FOR 132 KV SIDE OF 132/33 KV POWER TRANSFORMER)	NOS	2		
22.3.5	BUSCOUPLER CONTROL	NOS	1		
22.3.6	BUSCOUPLER RELAY PANEL	NOS	1		
22.3.7	COMMON PANEL (KP-1)	NOS	1		
22.4	33 KV SIDE				
22.4.1	FEEDER CONTROL & RELAY PANEL	NOS	5		
22.4.2	TRANSFORMER CONTROL & RELAY PANEL	NOS	2		

22.4.3	BUSCOUPLER CONTROL & RELAY PANEL	NOS	1		
23	AC & DC SYSTEM				
23.1	AC SYSTEM				
23.1.1	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		
	ACDB (HAVING 400A MCCB) AS PER SPECIFICATION (AC DB-1, AC DB-2 WITH B/C)	SET	1		
23.1.3	MAIN LIGHTING DISTRIBUTION BOARD (HAVING 250A MCCB AS INCOMER)AS PER SPECIFICATION (WITH DB-1, DB-2 & B/C)	SET	1		
23.1.4	INDOOR LIGHTING DISTRIBUTION BOARD AS PER SPECIFICATION. (WITH DB-1,DB-2 & B/C)	SET	1		
23.1.5	EMERGENCY LIGHTING DISTRIBUTION BOARD	SET	1		
23.1.6	INDOOR RECEPTACLE BOARD	SET	1		
23.2	DC SYSTEM				
23.2.1	220 V DC BOARD (HAVING 100A DC MCCB AS INCOMER, E/F (EARTH LEAKAGE), UNDER & OVER	SET	1		
	VOLTAGE AS PER SPECIFICATION (DC DB-1)	3E1	I		
23.2.2	220 V DC EMERGENCY DISTRIBUTION BOARD	SET	1		
23.2.3	BATTERY (350 AH PLANTE TYPE) FOR 220 V DC	SET	2		
23.2.4	BATTERY CHARGER FOR 220 V, 350 AH BATTERY (FLOAT AND FLOAT CUM BOOST)	SET	2		
24	DISTLED WATER PLANT OF 10 LTR/HR FOR BATTERY BANKS	SET	1		
25	WALKIE TALKIE SET	SET/ PAIR	2		
	PORTABLE ALUMINIUM LADDER EXTENDABLE TYPE OF ADEQUATE HEIGHT TO BE USED FOR MAINTENANCE OF EQUIPMENT INSIDE SWITCH YARD.	NOS	2		
27	PEDESTAL MOUNTED WHEEL FITTED DERRICK FOR LIFTING/ LOWERING OF MATERIALS UP TO 1.5 TON CAPACITY.	SET	1		
28	POWER WINCH NEAR STORE SHED FOR HANDLING MATERIALS UPTO 5 TON CAPACITY.	SET	1		
29	WATER COOLER WITH WATER PURIFIER SYSTEM	NOS	1		
	MAINTENANCE TESTING EQUIPMENT (AS PER ANNEXURE - I , INDICATED IN TS-TIMK-SCHEDULE OF REQUIREMENTS OF MAINTENANCE EQUIPMENT)	SET	1		
31	OFFICE FURNITURE (AS PER ANNEXURE - III ,INDICATED IN TS-TIMK-SCHEDULE OF				
	REQUIREMENTS OFFICE FURNITURE)>PLACING IN CONTROL ROOM,CONFERENCE ROOM, OFFICE	SET	1		
32	ROOMS, LIBRARY, TESTING LAB, etc.				
	BEST QUALITY & APPROVED MAKE INSULATING MAT (Confirming to IS:15652:2006) TO BE KEPT INFRONT OF ALL PANELS, BOARDS ETC.	NOS	37		
	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		
	TOTAL OF ELECTRICAL WORKS (PART-A)				
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PART-B	CIVIL WORKS				
1	Foundations : Design, engineering, supply of all labour, material (Cement-OPC-43 Grade, MS Rod,				
	coarse and fine aggregates(Sand and Metal Chips) etc) for construction of RCC (1:1.5:3) & PCC				
ľ	(1:3:6), RCC footings of any depth, pedestal and piling as per requirement including soil				
ľ	investigation, excavation, concreting, shuttering, grouting, underpinning and back filling of foundations etc complete for the following switch yard gantry/ portal structures and equipment				
ł	support & others as per the technical specification and approved drawings. (RCC RATIO 1:1.5:3).				
ł	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.				
1.1	Switch yard gantry/portal structure foundations				
1.1.1	T1S - 132 KV(NOMINAL UNIT WT- 1.2 MT)	NOS	20		
1.1.2	T4S - 132KV (NOMINAL UNIT WT- 0.95 MT)	NOS	6		
1.1.3	T8S - 33KV(NOMINAL UNIT WT- 0.8 MT)	NOS	11		
1.1.4	T9S - 33KV(NOMINAL UNIT WT- 0.6 MT)	NOS	14		
1.2	Equipment foundations :				
1.2.1	145 KV, 800-400-200 A, 31.5 KA, 4CORE SINGLE PHASE CURRENT TRANSFORMER	NOS	15		
1.3	145 KV,1200A, 31.5KA, ISOLATORS				
	S/I WITH OUT EARTH SWITCH	NOS	9		
	D/I WITH SINGLE EARTH SWITCH	NOS	2		
	D/I WITHOUT EARTH SWITCH	NOS	2		
1.4	145 KV, 6600pF, 3CORE, SINGLE PHASE CAPACITOR VOLTAGE TRANSFORMER	NOS	6		
1.5	120 KV METAL OXIDE SURGE ARRESTOR, 10 KA, Class III	NOS	12		
	145 KV ,2 CORE,SINGLE PHASE,IVT	NOS	3		
1.7	132 KV Bus Post Insulators	NOS	18		
1.8	145KV, 3150A, 40KA, SF6, CIRCUIT BREAKER WITH SUPPORTING STRUCTURE	NOS	5		
1.9	36 KV, 800-400-200, 25KA, 3CORE SINGLE PHASE CURRENT TRANSFORMER	NOS	18		
	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		
1.11	36 KV,800A,25KA,ISOLATORS				
1.11.1	S/I WITH OUT EARTH SWITCH	NOS	9		
	D/I WITH SINGLE EARTH SWITCH	NOS	5		
	D/I WITHOUT EARTH SWITCH	NOS	2		
1.13	36 KV ,2 CORE,SINGLE PHASE,IVT	NOS	3		
1.14	36KV,1250A,25KA,VACUUM CIRCUIT BREAKER WITH SUPPORTING STRUCTURE	NOS	8		
1.15	33 KV Bus Post Insulators	NOS	15		
1.16	SUB STATION SWITCYARD BMK, AC CONSOLE & OTHER MARSHALLING BOXES				
1.16.1	BAY MARSHALLING KIOSK (03 Nos 132 kv bay & 04 Nos 33 KV bay)	NOS	7		
1.16.2	SWITCH YARD AC CONSOLE FOR LIGHTING	NOS	2		
	SWITCH YARD RECEPTACLE BOARD FOR TFR OIL FILTERATION	NOS	1		
1.16.4	SWITCH YARD RECEPTACLE BOARD FOR WELDING & OTHER EMERGENCY	NOS	2		
	CT, PT & CVT Out Door Console Boxes (132 KV CT-5 Nos.+2 No., 33 KV CT-10 Nos., 132 KV CVT-2 No. +2 No., 132 KV IVT-1 No., 33 KV IVT-1 No.)	NOS	17		
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	1900		
1.17.4	Hard Rock(Requiring Blasting/Using breaker machinery)	Cum	348		
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				
		Cum	148		
	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		-		

2.3	Section 3-3	Mtrs	330		
2.2	Section 2- 2	Mtrs	230	 	
		Mtrs			
2.1	 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. (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 Eng. In Charge. (7) CABLE TRENCHES INSIDE THE CONTROL ROOM SHALL BE COVERED WITH M.S CHEQUERED PLATE(Duly painted	Mtrs	330		
1.17.7	Supply of steel different sizes(TATA/RINL/SAIL make) (as per the design)with cutting,bending, binding and placing in position of steel rods for foundation concreting including cost of binding wire.		20		
	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 Techinical Specification and as per direction of Engineer in Charge. (without cost of steel)		1656		

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 Engineer in charge.	Nos	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 of Engineer In					
	charge.(**APPROXIMATE LENGHTH OF THE BOUNDARY WALL) and approved drawing.					
	Appox.					
5.1	Appox length of the boundary walls(Brick works rested on RCC Beam and RCC Column &	RM	1100			
	footings as per TS) in mtrs	L IVI	1100			
6	Contour Survey & Leveling, Back Filling:					
6.1	Contour survey and furnishing contour map including supply of all materials, Labour and T&P	Sq. Mtr	20692			
6.2	Soil investigation : Supply of Jabour 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 & instruction of Engineer-in-Charge.	Per point	5			
7	Cutting, Filling and Leveling of Sub-station area including supply of labour and T&P				1	
7.1	LEVELLING OF S/S AREA: Providing, neatly dressing up and levelling of substation area including				1	
	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	[i]Soft/loose soil	Cum	4500	 	<u> </u>	
7.1.1.1	[i]Soft/loose soil [ii]Dense/ Compact soil	Cum	3200			
		Cum	3200			
7.1.2	FILLING of substation area with borrowed earth with supply of all labour, T & P.	C	20500			
7.1.2.1	(i) Beyond 30 mtr & up to 100mtr lead	Cum	38500			
8	CONTROL ROOM BUILDING: Design, engineering and construction of switch yard buildings including the piling where required, 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 facility meant for ladies staff is to be					
	included in ground floor of the Control room building.					
8.1		Lot	1			

8.2	Brick masonry work in cement sand mortar 1: 6 with bricks of class designation 75 as per technical spec & approved drawings.	Lot	1		
8.3	Flooring with 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 switcghear etc), fixing of lighting fixtures & switchgear , ceiling fans of 1400 sweep and regulators(including supply), exhaust fan (including supply), Erection of all Lighting FIXTURES & LAMPS (LED), D.C emergency lighting (including supply) as per 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 staircase 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	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		
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	170		
9.3	7 mtrs wide Concrete roads with shoulder as per specification indicated in the civil section.(for main and approach roads).Shall have drain on both side of the road.	MTRS	850		

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. 10.1 Storm water drain LOT 1 10.2 Road-culverts, drain crossings LOT 1 10.3 Cable trench crossing LOT 1		
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Image: Non-State Storm water drain Image: Non-State Storm water drain 10.1 Storm water drain LOT 10.2 Road-culverts, drain crossings LOT		
10.2 Road-culverts, drain crossings LOT 1		
10.2 Road-culverts, drain crossings LOT 1		
10.3 Cable trench crossing LOT 1		
 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 20/40 MVA Transformer (2 Nos) 		
11.1 20/40 MVA, 132/ 33kV transformers		
a) Overall dimension of transformer(appox) Nos 2		
Length:7200 mmX Width 6000 mmX Height 6200 mm		
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. Nos 1		
>Oil capacity of each Transformer in Itrs appox.		
a) 20/40 MVA,132/33 KV: 26500 ltrs.		
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 1:4:8 (M10) and maintaining proper sloping for easy discharge of storm water having concrete thickness of 75 mm. including rolling , dressing, compacting,the area. As per technical specification and approved drawing, and as per the instruction of the Engg-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 and approved drawing. (Switch yard area)		
13 Metal Spreading: Providing supplying and laying two layers of machine crushed metals (gravel) fill, the first layer 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 and instruction of Engineer in charge above the PCC(1:4:8). The total compacted thickness of the metals(20 mm Nominal) 100mm above the PCC. CUM 410		
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		
nos accorative plants at american locations, a garden in none of the control room including supply		
of plants,soil treatment and its plantation including materials,labour and T&P.As per the	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 supply of materials and labour as per the direction of Engineer In charge and as per approved drawing and specification.	LOT	1		
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. 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	CUM	100		
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	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	Excavation 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.	Cu.m.	1		
19.2	PCC: M10(1: 3 : 6)	Cu.m.	1		
19.3	RCC M 15(1:2:4)	Cu.m.	1		
19.4	RCC: M 20(1:1.5:3)	Cu.m.	1		
19.5	Brick masonry work in cement sand mortar 1: 5 with bricks of class designation 75.	Cu.m.	1		
19.6	12 mm thick plaster in cement sand mortar (1:6).	Sq.m.	1		
19.7	Cutting, bending, binding (supply of binding wires) and fixing of reinforcement (including supply of reinforcement).	M.T.	1		
19.8	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, PCC, RCC, brick work, plastering ,flooring(flooring shall be with vitrified tiles of					
	reputed make with a dado of minimum 6 inches), 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 ltrs 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.					
20.1	"D" type Quarter As per technical specification(01 Nos Quarter, of size 120 SQ Mtrs)					
20.2	"D" type Quarter As per technical specification: 1 no quarter on ground floor & the size of	SQ Mtr	120			
61	quarter plinth area shall be 120 Sq Mtrs(appox)		-	-		
20.4	"E" type Quarter As per technical specification (one no. two storied flat. Each flat shall be with 2					
20.5	"E" type Quarter As per technical specification: 2 nos quarters on ground floor & 2 nos quarters					
	on first floor. The quarters to be accommodated in ground floor E1 & E2 (Each quarter size plinth					
	area shall be 73 Sq Mtrs(appox) and on the first floor quarters to be accommodated E3 & E4(Each	SQ Mtr	292			
	quarter size plinth area shall be 73 Sq Mtrs(appox)					
					_	
21	MAIN & SWITCH YARD GATES: Design, engineering, procurement of labour, material including all					
21	associated works for construction and fixing of of a main gate and one no. switch yard gates with men gates					
21						
21	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					
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21.1 21.2 21.3 21.4 22	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 CFL lamp, LV XLPE cables, switchgear etc required to complete works as per specification and approved drawings MAIN GATE WICKET GATE NEAR MAIN GATE SWITCH YARD GATE(ON BOTH SIDES OF 7MTRS. CONCRETE ROAD OF SWITCHYARD) WICKET GATE NEAR SWITCHYARD 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. 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	Nos. Nos. Nos.	1 2 1 1			
21.1 21.2 21.3 21.4 22	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 CFL lamp, LV XLPE cables, switchgear etc required to complete works as per specification and approved drawings MAIN GATE WICKET GATE NEAR MAIN GATE SWITCH YARD GATE(ON BOTH SIDES OF 7MTRS. CONCRETE ROAD OF SWITCHYARD) WICKET GATE NEAR SWITCHYARD 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. 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	Nos. Nos. Nos.	1 2 1 1			
21.1 21.2 21.3 21.4 22	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 CFL lamp, LV XLPE cables, switchgear etc required to complete works as per specification and approved drawings MAIN GATE WICKET GATE NEAR MAIN GATE SWITCH YARD GATE(ON BOTH SIDES OF 7MTRS. CONCRETE ROAD OF SWITCHYARD) WICKET GATE NEAR SWITCHYARD 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. 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	Nos. Nos. Nos.	1 2 1 1			
21.1 21.2 21.3 21.4 22	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 CFL lamp, LV XLPE cables, switchgear etc required to complete works as per specification and approved drawings MAIN GATE WICKET GATE NEAR MAIN GATE SWITCH YARD GATE(ON BOTH SIDES OF 7MTRS. CONCRETE ROAD OF SWITCHYARD) WICKET GATE NEAR SWITCHYARD 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. 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	Nos. Nos. Nos.	1 2 1 1			

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 with a Toilet 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.				
24.1	SECURITY SHED: The size of the security shed shall be 3.5 mtrsX6.5mtrs and height of 3.5mtrs RCC roof, brick masonary works, plastering and painting and fixing of MS doors and windows with attached Toilet. 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)}	Nos	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 Brick masonry and plastering and painting with MS door having locking arrangement. 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 all type of soils including rock and disposal of excess materials as per instruction of Engineer In charge.	NOS	2		

26	STORE SHED:Design, engineering, supply of all labour, T&P, 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,back filling,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 (1:2:4) 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 29.1	Anti-Weed Treatment	Co. Mano	5000				
29.1	Supply of labour,T&P,Chemicals and other necessary arrangements for anti-weed treat of the Dismentalling of existing structures & shifting of LT/HT lines (if any as per site requirement) at	Sq.Mtrs	5000			+	
	proposed Gondia S/s	LOT	1				
	TOTAL OF SUBSTATION (Civil Work)(PART-B)						
	TOTAL OF ERECTION OF SUBSTATION (Electrical Work) & (C	Civil Woı	rk) -Schedule-4-ss (te	o Schedule No	. 6 Grand Sur	nmary)	
					Name 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 CORPORATION LIMITED							
	NAME OF THE WORK:- Design, Supply and Installation of Sub-Stations & Transmission Lines for Construction of 2X20 MVA-132/33 KV Sub-station at Thuapali & its associated 132 KV LILO line from 132 KV Katapali - Bargarh line (Line length- 22.833Kms approximately) in Odisha State of India under PACKAGE-8 Under Japan International Cooperation Agency (JICA)'s ODA Loan.							
	Loan Agreement No: [ID-P245] - IFB No: [CPC/JICA/ICB/08/15-16/]- Reference Identification No: [OPTCL/JICA/PKG-8]							
	NOTICE INVITING TENDER- & BID DOCUMENT No.: TENDER- Deogarh JICA PACKAGE- 8/ 2016							
	Schedule No. 4. Installation and Other Services							
	NAME OF THE BIDDER							
Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-4-line)		e rp	Unit l	Price ¹	Т	otal Price ¹	
	ERECTION,TESTING & COMMISSIONING OF FOLLOWING EQUIPMENTS ALONG WITH CIVIL WORKS (As per Technical Specification)	UNIT	Quantity for: 132kV LILO line from 132kV Katapalli - Bargarh line to Thuapali (22.833 km)	Foreign Currency Portion	Local Currency Portion	Foreign Currency Portion	Local Currency Portion	
			(1)	(2)	(3)	(1) x (2)	(1) x (3)	
PART A	ELECTRICAL WORKS							
1.0	ERECTION,TESTING & COMMISSIONING of Following tested Lattice type Galvanized 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) (40 nos)	МТ	137.2					
1.1.1	+3 EXTENSION (Nominal unit weight 0.611 MT) (6 nos)	MT	3.666					
1.1.2	+6 EXTENSION (Nominal unit weight 1.349 MT) (2 nos)	MT	2.698					
1.2	PB TYPE (30 deg ANGLE) TOWERS (Nominal unit weight 4.973 MT) (25nos)	MT	124.325					
1.2.1	+3 EXTENSION (Nominal unit weight 1.018 MT) (3 Nos)	MT	3.054					
1.2.2 1.3	+6 EXTENSION (Nominal unit weight 2.104 MT) (2 nos)	MT	4.208					
1.3 1.3.1	PC TYPE (60 deg ANGLE) TOWERS (Nominal unit weight6.214 MT) (9nos)	MT	55.926					
	+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) WEIGHT OF THE STRUCTURES (including Tower stubs, & Foundation Nut and	MT	0					
1.3.3	Bolts)	мт	333.315					

1.4	Weight of different type G.I Nuts and Bolts	MT	16.87		
1.5	Fixing of of Templates				
1.5.1	PA Type(40 Nos.)	MT	26.6		
1.5.2	PB Type (25 Nos.)	MT	15.05		
1.5.3	PC Type (9 Nos.)	MT	8.136		
1.6	Erection of the following tower accessories as per technical specification and				
1.0	as directed by the engineer-in charge.				
1.6.1	DANGER BOARD	Nos.	74		
1.6.2	NUMBER PLATE		74		
1.6.3	PHASE PLATE (R,Y,B)		444		
1.6.4	BIRD GUARD	Sets	240		
1.6.5	ANTICLIMBING DEVICE	Sets	74		
1.6.6	CIRCUIT PLATE (Phase-I,II)	Nos.	148		
1.6.7	EARTHING OF TOWER including supply of all materials except Earthing Device				
1.6.7.1	Pipe Type earthing including cost of charcoal,salt/coke and good borrowed earth and Bentonite where necessary in accordance with IS:3043 and with supply of all T&P and Labour.	Nos.	74		
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	DOUBLE CIRCUIT (ACSR/AAAC,SIX POWER CONDCTOR)	Route (Km)	23.175		
3.0	Erection of OPGW fibre Optic Cable for speech, data & protection				
1	Erection of 24Fibre/48(DWSM)OPGW fibre Optic along with hardwares and approach cables	Kmtr	23.175		

	TOTAL of ELECTRICAL WORKS Part- (A)				<u>г</u>
	CIVIL WORKS			 	
PARTB				1	
1	SURVEY OF LINE & PREPARATION LAND SCHEDULE: Supply of required T&P's, Technical personnel's, labours for conducting				
	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.	22.833		
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.	22.833		
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	22.833		
1.4	Soil Testing in complete shape along with submission of report etc. up to the depth of 7.0 Mtrs.	Per Loc.	15		
1.5	Soil Testing in complete shape along with submission of report etc. up to the depth of 15 Mtrs.	Per Loc.	10		
1.6	Soil Testing in complete shape along with submission of report etc. upto the depth of 45 mtrs for River bed pile.	Per Loc.	0		
2	EXCAVATION WORKS FOR OPEN CAST/SHALLOW TYPE FOUNDATIONS				
	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				
2.1.1	Soft/Loose soil	CUM	500		
2.1.2	Wet soil	CUM	1000		
	Dense/Compact soil	CUM	800		
	Partial Submerged soil	CUM	1200		
	Fully submerged soil	CUM	500		
	Soft/Disintegrated rock(Not requiring Blasting)	CUM	1200		
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)	CLIM	05		
		CUM	65		
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.) 	CUM	800		
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)		16		
4.0	DE-WATERING(FOR OPEN CAST LOCATION)				
4.1	(i) With Supply of all T&P on Man Hour basis.	Man Hour	100		
4.2	(ii) With Supply of all T&P, Fuel, Lubricant & electricity on HP Hour basis.		1250		
5	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	1950		
6	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	6000		
7	WELDING OF TOWER MEMBERS				
7.1	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.	44,393		
8	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.				
8.1	Excavation in all type of soil including rock & back filling including supply of sand with back filling.	CUM	2200		
8.2	Lean Concrete in the ratio1:3:6(Grade M-10) including supply of sand chips etc.	CUM	300		
8.3	PCC in the ratio 1:2:4(Grade M-15) as above.		50		
8.4	RR Massonary work in the ratio 1:5.	CUM	2200		

9	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.	1			
	TOTAL OF Line (Civil Work)				
	TOTAL OF ERECTION LINE (Electrical Work) &				
	(Civil Work) - To Schedule-6 Grand Summary				
			Name of Bidde	er:	

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.

132/33 I	ODISHA POWER TRANSMISSION OF THE WORK:- Design, Supply and Installation of Sub-Sta VS Sub-station at Thuapali & its associated 132 KV LILO line kimately) in Odisha State of India under PACKAGE-8 Under V	tions & Transmission Lines for from 132 KV Katapali - Bargarl	r Construction of 2X20 MVA- h line (Line length- 22.833Kms						
Loan Ag	greement No: [ID-P245] - IFB No: [CPC/JICA/ICB/08/15-16/]- Reference Identific	ation No: [OPTCL/JICA/PKG-8						
I	NOTICE INVITING TENDER- & BID DOCUMENT No.: TENDER- Deogarh JICA PACKAGE- 8/ 2016								
	Schedule No. 6. Gra	and Summary							
	NAME OF THE BIDDER								
		Total	Price ¹						
Item	Description	Foreign	Local						
1	Total Schedule No. 1. Plant, and Mandatory Spare Parts Supplied from Abroad (Substation+Line)								
2	Total Schedule No. 2. Plant, and Mandatory Spare, Parts 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:								
	Signature of Bidder:								
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ODISHA POWER TRANSMISSION CORPORATION LIMITED

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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.

ODISHA POWER TRANSMISSION CORPORATION LIMITED

NAME OF THE WORK:- Design, Supply and Installation of Sub-Stations & Transmission Lines for Construction of 2X20 MVA-132/33 KV Sub-station at Thuapali & its associated 132 KV LILO line from 132 KV Katapali - Bargarh line (Line length- 22.833Kms approximately) in Odisha State of India under PACKAGE-8 Under Japan International Cooperation Agency (JICA)'s ODA Loan.

Loan Agreement No: [ID-P245] - IFB No: [CPC/JICA/ICB/08/15-16/.....]- Reference Identification No: [OPTCL/JICA/PKG-8]

	NAME OF THE BIDDER					
Sl. No.	DESCRIPTION OF ITEMS SUPPLY OF SPARES FOR THE FOLLOWING	Unit	Quantity		Unit Price	Total Price in INR
	EQUIPMENTS. (As per Technical Specification)			CIP (foreign parts)	Ex-Works Price Local Parts	-
			(1)	(2)	(3)	(1) x (2) or (3)

	TOTAL					
			Name of Bidder:			
Note: Recommended Spares shall not be taken in to consideration for evaluation purpose.						