

**ORISSA POWER TRANSMISSION CORPORATION LIMITED**

**CONSTRUCTION OF 2X40 MVA (220/33 KV) 220/33 KV GAS INSULATED (SF6) SUB-STATION AT INFOCITY-II ,BHUBANESWAR & ASSOCIATED 220 KV DC LILO LINE ARRANGEMENT ON THE EXISTING NARENDRAPUR-MENDHASAL DC LINE ON TURNKEY BASIS**

BID DOCUMENT No.:Sr. G.M- CPC- TENDER- GIS INFOCITY-II- PACKAGE- 23 / 2012-13

(Equipment/Materials Price Break-up of Ex-works Prices against Package-GIS INFOCITY-II)

PART-I, SCHEDULE-2A (FOR SUBSTATION)		TO BE QUOTED IN INR							
Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2A-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	Unit Ex-Works Price	Total Ex-Works Price	Mode of Transaction (Direct or Bought-out item)	Total Taxes & Duties applicable for transaction between bidder and OPTCL and not included in the price at Column(6) [For bought-out items, taxes & duties excluding Octroi/Entry Tax are invariably included in the price quoted at column(6)]		
1	2	3	4	5	6=4x5	7	Excise Duty	VAT/Sales Tax	Other Levies (if any)
1	245KV GIS EQUIPMENT								
1.1	245kV, 2000 A, 40 kA for 3 sec, SF6 gas insulated Line feeder bay module each comprising of SF6 gas insulated circuit breaker, current transformer, bus-bar dis connectors with common grounding switch, dis connectors with safety grounding switch(es), high speed fault making grounding switch,local control cubicle, SF6 gas monitoring system for complete bay, gas insulated terminal connection for connecting Transformer (Oil/SF6 Bushing) with GIS through gas insulated interconnection bus etc to complete Transformer Bay Module.	Set	2						

SI. No.	DESCRIPTION OF ITEMS(SCHEDULE-2A-SS)  SUPPLY OF FOLLOWING EQUIPMENT & MATERIALS (As per Technical Specification)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	Unit Ex-Works Price	TO BE QUOTED IN INR				
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							Excise Duty	VAT/Sales Tax	Other Levies (if any)
1	2	3	4	5	6=4x5	7	8	9	10
1.2	245kV, 2000A, 40 kA for 3 sec , SF6 gas insulated Line feeder bay module each comprising of SF6 gas insulated circuit breaker, current transformer, bus-bar dis connectors with common grounding switch, dis connectors with safety grounding switch(es), high speed fault making grounding switch,local control cubicle, SF6 gas monitoring system for complete bay, gas insulated terminal connection for connecting overhead line (Air/SF6) with GIS through gas insulated interconnection bus etc.to complete Feeder Bay Module.	Set	2						
1.3	245kV , 40 kA for 3 sec, 3- phase Isolated , SF6 gas insulated , metal enclosed 3150A bus bars each enclosed in bus enclosures running along the length of the switchgear to interconnect each of circuit breaker bay module. Each bus bar set shall be complete with potential transformer, dis connectors , bus bar grounding switch, SF6 gas monitoring system for the complete bus etc.	Set	2						
1.4	245kV, 3150A, 40 kA for 3 sec, SF6 gas insulated Bus Coupler Bay Module comprising of SF6 gas insulated circuit breaker, current transformer, dis connectors switches, disconnecter with safety grounding switch(es). Local control cubicle, SF6 gas monitoring system for the complete bay etc.	Set	1						
2	<b>36 KV GIS EQUIPMENT</b>								

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1	2	3	4	5	6=4x5	7	8	9	10
2.1	36 KV, 1250 A, 25 kA for 3 sec, SF6 gas insulated Line feeder bay module each comprising of SF6 gas insulated circuit breaker, current transformer, bus-bar dis connectors with common grounding switch, dis connectors with safety grounding switch(es), high speed fault making grounding switch,local control cubicle, SF6 gas monitoring system for complete bay, gas insulated terminal connection for connecting Transformer (Oil/SF6 Bushing) with GIS through gas insulated interconnection bus etc to complete Transformer Bay Module.	Set	2						
2.2	36 KV, 1250A, 25 kA for 3 sec , SF6 gas insulated Line feeder bay module each comprising of SF6 gas insulated circuit breaker, current transformer, bus-bar dis connectors with common grounding switch, dis connectors with safety grounding switch(es), high speed fault making grounding switch,local control cubicle, SF6 gas monitoring system for complete bay, gas insulated terminal connection for connecting overhead line (Air/SF6) with GIS through gas insulated interconnection bus etc.to complete Feeder Bay Module.	Set	7						

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2.3	36 KV , 25 kA for 3 sec, 3- phase Isolated , SF6 gas insulated , metal enclosed 2000 A bus bars each enclosed in bus enclosures running along the length of the switchgear to interconnect each of circuit breaker bay module. Each bus bar set shall be complete with potential transformer, dis connectors , bus bar grounding switch, SF6 gas monitoring system for the complete bus etc.	Set	2						
2.4	36 KV, 1250A, 25 kA for 3 sec, SF6 gas insulated Bus Coupler Bay Module comprising of SF6 gas insulated circuit breaker, current transformer, disconnectors switches, disconnector with safety grounding switch(es). Local control cubicle, SF6 gas monitoring system for the complete bay etc.	Set	1						
2.5	36 KV, 800A, 25 kA for 3 sec , SF6 gas insulated Line feeder bay module each comprising of SF6 gas insulated circuit breaker, current transformer, bus-bar dis connectors with common grounding switch, dis connectors with safety grounding switch(es), high speed fault making grounding switch, local control cubicle, SF6 gas monitoring system for complete bay, gas insulated terminal connection for connecting overhead line (Air/SF6) with GIS through gas insulated interconnection bus etc. to be utilised for Station transformer (2X315 KVA,33/0.415 kv) Bay Module.	Set	1						

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1	2	3	4	5	6=4x5	7	8	9	10
3	245 KV,4400pF,3CORE,SINGLE PHASE CAPACITOR VOLTAGE TRANSFORMER.(AIS)	NOS	6						
4	245 KV solid core Bus Post Insulators (AIS)	NOS	12						
5	216 KV, METAL OXIDE SURGE ARRESTOR,10 KA, class III	NOS	12						
6	30 KV, METAL OXIDE SURGE ARRESTOR, 10kA, Class II (AIS)	NOS	27						
7	36 KV solid core Bus Post Insulators	NOS	24						
8	NCT FOR TRANSFORMER PROTECTION RATING 36 KV,(1200-600-300/1-1 A, HAVING TWO PS CLCORE (IN EACH POWER TRANSFORMER 1 No. NCT IN 220 KV SIDE )	NOS	2						
9	NCT FOR TRANSFORMER PROTECTION RATING 36 KV,(800-400-200/1-1 A, HAVING TWO PS CLCORE ( IN EACH POWER TRANSFORMER 33 KV SIDE-1 NO)	NOS	2						
10	XLPE Power Aluminium conductor cable for the GIS system (220 & 33 KV class)								
10.1	220KV XLPE CABLE 1000 sq mm (1000 AMPS SINGLE CORE)	LOT	1						
10.2	33KV CABLE 630 SQ. MM (800 AMPS SINGLE CORE)	LOT	1						
11	<b>BUS BAR &amp; CIRCUIT MATERIALS</b>								
11.1	160 KN ANTIFOG INSULATOR STRINGS <i>for single tension single Moose conductor</i> (TENSION)-220 KV	SET	12						
11.2	120 KN INSULATOR STRINGS <i>for Single tension Single Moose conductor</i> (TENSION)-33 KV	SET	24						

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1	2	3	4	5	6=4x5	7	8	9	10
11.3	90 KN INSULATOR STRINGS <i>for Single Suspension Double/Single Moose cond</i> (SUSPENSION)-220 KV	SET	6						
11.4	90 KN INSULATOR STRINGS <i>for Single Suspension Double/Single Moose cond</i> (SUSPENSION)-33 KV	SET	12						
11.5	ACSR MOOSE CONDUCTOR	LOT	1						
11.6	HARDWARES & FITTINGS/SPACERS/CLAMP & CONNECTORS	LOT	1						
12	SUBSTATION EARTHING SYSTEMS								
12.1	EARTHING CONDUCTOR FOR BURRIAL : 75X10 mm GI Flat for laying ( <i>spacing maximum 5m both way</i> )	LOT	1						
12.2	EARTHING CONDUCTOR: 50X6 mm GI Flat for Raiser from the burial earth mat to equipment,structure etc)	LOT	1						
12.3	EARTHING DEVICE & ASSOCIATED ACCESSORIES (50 mm heavy duty GI PERFORATED PIPE 3 mtrs long for treated earth pit)	LOT	1						
12.4	EARTHING DEVICE & ASSOCIATED ACCESSORIES 40mm MS rod 3 mtrs long for non treated earth pit)	LOT	1						
13	G.I Cable Trays including support GI angle suitable for different sections i.e. Section:1-1,2-2,3-3 & 4-4 along with its accessories as per TS.	LOT	1						
14	SWITCH YARD AC CONSOLE FOR LIGHTING ( <i>01 nos on 220 kv bay &amp; 01 Nos 33 kv Bay</i> )	NOS	2						

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1	2	3	4	5	6=4x5	7	8	9	10
15	SWITCH YARD RECEPTACLE BOARD FOR TFR OIL FILTERATION (01 no. near 220/33 KV POWER Tfr)	NOS	1						
16	SWITCH YARD RECEPTACLE BOARD FOR WELDING & OTHER EMERGENCY (01 nos in 220 kv bay& 33 kv Bay )	NOS	1						
17	CVT OUT DOOR CONSOLE BOXES	NOS	2						
18	SWITCH YARD STRUCTURES ( INCLUDING FOUNDATION BOLTS) FOR 220/132/33 KV CLASS								
18.1	DIFFERENT TYPES OF LATTICE TYPE COLUMNS WITH DETAILS & DIFFERENT TYPE OF BEAMS WITH DETAILS								
18.1.1	TOTAL WEIGHT OF COLUMN & BEAM	MT	30						
18.2	SUPPORT STRUCTURES (PIPE TYPE) FOR ALL 220KV & 33KV EQUIPMENTS								
18.2.1	TOTAL WEIGHT OF PIPE TYPE SUPPORT STRUCTURE FOR ABOVE EQUIPMENT	MT	20						
18.3	Total weight of GI Nuts and bolts for the above structures	MT	2						
19	GENERAL EQUIPMENT & SUBSTATION ACCESSORIES								
19.1	POWER CABLES,1.1KV,XLPE,ARMOURED, ALUMINIUM CONDUCTOR (As per Specification)								
19.1.1	3.5 CX300 mm²								
19.1.2	3.5 CX185 mm²								
19.1.3	3.5 CX120 mm²								

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19.1.4	3.5 CX70 mm <sup>2</sup>								
19.1.5	3.5 CX35 mm <sup>2</sup>								
19.1.6	4 CX 16 mm <sup>2</sup>								
19.1.7	4 CX 6 mm <sup>2</sup>								
19.1.8	2CX 6 mm <sup>2</sup>								
19.2	<b>CONTROL CABLES,1.1 KV, PVC,STRANDED COPPER(As per specification)</b>								
19.2.1	4 CX 2.5 mm <sup>2</sup>								
19.2.2	5 CX 2.5 mm <sup>2</sup>								
19.2.3	7CX 2.5 mm <sup>2</sup>								
19.2.4	10 CX 2.5 mm <sup>2</sup>								
19.2.5	12 CX 2.5 mm <sup>2</sup>								
19.2.6	16 CX 2.5 mm <sup>2</sup>								
19.2.7	19 CX 2.5 mm <sup>2</sup>								
19.2.8	1CX 120 mm <sup>2</sup> BAT TO BAT CHARGER & CHARGER TO DCDB								
19.3	<b>POWER CABLES,1.1KV,XLPE,ARMOURED, ALUMINIUM CONDUCTOR (As per Technical Specification)</b>	LS	1						
19.4	<b>CONTROL CABLES,1.1 KV, PVC,STRANDED COPPER(As per Technical specification)</b>	LS	1						
20	<b>ACCESSORIES FOR PLLC/OPGW SYSTEM AS PER TECHNICAL SPECIFICATION)</b>								



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1	2	3	4	5	6=4x5	7	8	9	10
20.1	24 Fibre (Dual Window Single Mode )OPGW fibre Optic Cable.	KM	3						
20.2	OPGW hardware set like suspension Assembly,Tension Assembly (Dead end assembly, Pass through assembly) ,Vibration Damper,Down Lead Clamp Assembly for 24 Fibre (DWSM) OPGW,Joint Box etc.	LOT	1						
20.3	FODP(Fibre Optic Distribution Panel) 48 F: Indoor type,rack mounted with FCPC coupling and pig tails (DWSM Fibre)	No.	1						
20.4	Fibre Optic Approach cable & accessories like 24 Fibre (DWSM) ,HDPE Pipe for above fibre approach cable	LOT	1						
20.5	Integrated universal MOX (U MUX) having inter phase facility for Speech,Data & HV line protection	SET	1						
20.6	Set of Spare cards for U MUX (1 set)(1 No each module)	LOT	1						
20.7	Remote Terminal Unit (RTU) and Transducer Cubicle designed for Power Utility SCADA operation. Complied to IEC 870-5-101 specifications Transducers and interfacing cards for Analog input, Pulse input, Binary input and Digital output (optional)	No.	1						
20.8	Splitter suitable for interacting with CFE panel at BBSR sub-LDC	No.	1						
20.9	<b>EPABX(Telephone Exchange) standard complied to ITU-T-G-711,G-712,Q-507, Q-517 capacity 16 lines /Trunks (2W,4W,RSU),Universal Numbering scheme,Operating console,Desktop PC-Menu driven.</b>	NO	1						

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1	2	3	4	5	6=4x5	7	8	9	10
20.10	25 PAIR ARMOURED JELLY FILLED CABLE	MTRS	1000						
20.11	10 PAIR ARMOURED TELEPHONE CABLES	MTRS	1000						
20.12	4 PAIR NON ARMOURED TELEPHONE CABLES	MTRS	400						
20.13	2 WIRE TELEPHONE SET	NO	10						
20.14	VRLA TYPE BATTERY 350 AH(FOR 48 V)	SET	2						
20.15	BATTERY CHARGER FOR 48 V, 75 A Float cum Boost(as recommended by the VRLA Battery manufacturer)	SET	2						
20.16	48 V DCDB	SET	1						
21	<b>SUPPLY OF STATION TRANSFORMER &amp; OTHER MATERIALS FOR MEETING THE AUXILIARY SUPPLY OF THE SUB-STATION AS PER TECHNICAL SPECIFICATION</b>								
21.1	STATION TRANSFORMER 33KV/433V,315 KVA (AS PER SPECIFICATION)	NOS	2						

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21.2	33 KV AB SWITCH IN 33 KV SIDE(600AMP),HG FUSE, DP STRUCTURE(preferably by using 200X100 mm RS Joist),ANGLE FOR BRACING OF DP STRUCTURE,POWER CABLES, CHANEL, FOR ERECTION OF TRANSFORMER INCLUDING INSULATORS, CONDUCTOR, CLAMPS & CONNECTOR, JUMPERING AND OTHER ACCESSORIES FOR COMMISSIONING OF THE STN TRANSFORMER.IT INCLUDES LT OUT DOOR KIOSK MADE OUT OF 14 SWG GI MARSHALLING BOX OR BETTER , HAVING CABLE TERMINATING FACILITY FOR INCOMING & OUT GOING TO THE BOX. THE RATING OF THE BUS BAR, TERMINAL BOX & STUDS TO BE USED SHALL HAVE CONTINEOUS RATING OF 1000 AMP. MARSHALLING BOXES ARE TO BE INSTALLED NEAR TO THE AUXILIARY STATION TRANSFORMERS.	SETS	2						
22	SUB STATION LIGHTING (AS PER SPECIFICATION AND APPROVED DRAWINGS)(includes Switch yard,Colony street and other street area)								

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22.1	<b>SUB-STATION SWITCH YARD LIGHTING,IT INCLUDES SUPPLY OF FIXTURES &amp; 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 maintained).</b>	LOT	1						
22.2	<b>ILLUMINATION SYSTEM (220 KV &amp; 33 KV GIS BUILDING &amp; CONTROL ROOM BUILDING)</b>								
22.3	<b>SUPPLY OF FIXTURES &amp; 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 maintained)</b>	LOT	1						
22.4	<b>STREET LIGHTING, IT INCLUDES SUPPLY OF GI TUBULAR POLE, WITH LED LIGHTING FIXTURES WITH LAMPS of reputed make (Philips/CGL/Bajaj)(TO BE PROVIDED IN THE SWITCH YARD, ALONG THE ROADS (APPROACH INSIDE YARD AND OTHER ROADS).</b>	LOT	1						

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							Excise Duty	VAT/Sales Tax	Other Levies (if any)
1	2	3	4	5	6=4x5	7	8	9	10
22.5	<p><b>ELECTRICAL SUPPLY TO STREET LIGHTING, COLONY QUARTERS:-</b></p> <p>&gt; 1 NO. OUTDOOR KIOSK FOR STREET LIGHTING PURPOSE HAVING 2 NOS 200 AMP SWITCH FUSE UNITS AND , 6 NOS.OUT LETS OF 32 AMP MCB FOR STREET LIGHTING. (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.)</p> <p>&gt; 1 NO. OUTDOOR KIOSK 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. PROVISION OF CABLE(2C/4C-6 SQM) FROM THE OUT DOOR KIOSK INSTALLED NEAR THE QUARTER TO THE RESPECTIVE QUARTERS UP TO THE SWITCH FUSE UNIT PROVIDED INSIDE THE QUARTERS. INDIVIDUAL CABLES FOR INDIVIDUAL QUARTERS. IT ALSO INCLUDES PROPER EARTHING OF THE QUARTER AS PER THE STANDARD PRACTICE AND SPECIFICATION.)</p> <p>&gt; 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. (LT UNDER GROUND POWER CABLES OF 4CX6/16 SQMM SHALL BE CONNECTED TO THE JUNCTION BOX.) THE JUNCTION BOX SHALL HAVE PROVISION OF FUSES, BUSES, CONNECTORS FOR CABLE IN AND OUT. THIS INCLUDES SUPPLY OF ALL MATERIALS(EXCEPT CABLES) AS PER APPROVED DRAWING AND SPECIFICATION TO COMPLETE THE STREET LIGHTING SYSTEM. PROPER EARTHING AS PER STANDARD PRACTICE FOR STRRET LIGHT POLES AND OUTDOOR KIOSKS ARE ALSO INCLUDED IN THE SCOPE OF WORKS. THE STREET LIGHT SHALL BE OF LED LAMP FITTINGS INCLUDING LAMPS.</p> <p>(* REMARKS : FOR SUPPLY OF ALL THE CABLES AS INDICATED ARE COVERED IN THE CABLE ITEMS AS INDICATED ABOVE )</p>	LOT	1						

Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2A-SS)  SUPPLY OF FOLLOWING EQUIPMENT & MATERIALS (As per Technical Specification)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	Unit Ex-Works Price	TO BE QUOTED IN INR				
					Total Ex-Works Price	Mode of Transaction (Direct or Bought-out item)	Total Taxes & Duties applicable for transaction between bidder and OPTCL and not included in the price at Column(6) [For bought-out items, taxes & duties excluding Octroi/Entry Tax are invariably included in the price quoted at column(6)]		
							Excise Duty	VAT/Sales Tax	Other Levies (if any)
1	2	3	4	5	6=4x5	7	8	9	10
22	2 TR CAPACITY 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.(SUPPLY OF CABLES ARE COVERED IN CABLE ITEMS AS INDICATED ABOVE )	LOT	1						
23	FIRE FIGHTING SYSTEM(PORTABLE /TROLLEY/ WHEEL MOUNTEDFIRE EXTINGUISHERS SETS FOR CONTROL ROOM,EQUIPMENT LIKE TRANSFORMER AND OTHER AREAS AS PER TECH SPEC(REFER TS-VOL-IIA-SCOPE OF WORKAT SL NO. 15-ANNEXURE - I)								
23.1	FOAM TYPE-9 LTRS	NOS	4						
23.2	DRY CHEMICAL POWDER(TROLLEY MOUNTED)- 22.5 KGS	NOS	4						
23.3	DRY POWDER TYPE - 5 KGS	NOS	4						
23.4	CO <sub>2</sub> - 4.5 KGS	NOS	10						
23.5	CO <sub>2</sub> - 9 KGS	NOS	10						
23.6	CO <sub>2</sub> (TROLLY MOUNTED)- 22.5 KGS	NOS	4						
23.7	9 litre water type	Nos.	4						
23.8	4.5 kg DCP type	Nos.	4						
23.9	50 Litres Mechanical Foam type	Nos.	2						
23.10	Smoke detection system	Set	1						

Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2A-SS)  SUPPLY OF FOLLOWING EQUIPMENT & MATERIALS (As per Technical Specification)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	Unit Ex-Works Price	Total Ex-Works Price	Mode of Transaction (Direct or Bought-out item)	TO BE QUOTED IN INR		
							Total Taxes & Duties applicable for transaction between bidder and OPTCL and not included in the price at Column(6) [For bought-out items, taxes & duties excluding Octroi/Entry Tax are invariably included in the price quoted at column(6)]		
							Excise Duty	VAT/Sales Tax	Other Levies (if any)
1	2	3	4	5	6=4x5	7	8	9	10
23.11	Fire Alarm System	Set	1						
23.12	FIRE BUCKET (6 NOS IN EACH STAND) WITH STAND	SET	5						
24	PROTECTION,CONTROL METERING, EVENT LOGGER,BUS BAR PROTN PAN AS PER TECH SPEC WITH SUB-STATION AUTOMATION IEC 61850 compliant & as per technical specification.								
24.1	220 KV SIDE								
24.1.1	SUB-STATION AUTOMATION SYSTEM (COMPRISING OF 02 Nos. FEEDER BAYS + 02 TRANSFORMER BAYS + 01 Nos. BUS COUPLER BAYS)	SET	1						
24.1.2	BCU FOR CONTROLLING AND MONITORING OF AUXILIARY SYSTEM & OTHER ACCESSORIES( COMPRISING SERVERS,ENGG STATION,WORKS STATION,UPS etc (TO BE LOCATED IN THE CENTRAL CONTROL ROOM)FOR BOTH 220 & 33 KV SIDE OF THE GIS SUB-STATION. As per Technical specification.	SET	1						
24.1.3	FEEDER PROTECTION RELAY PANEL(MAIN-I & MAIN-II PROTECTION WITH AUTO RECLOSURE )	NOS	2						
24.1.4	TRANSFORMER PROTECTION RELAY PANEL (MAIN-I & MAIN-II PROTECTION CONSIDERING BOTH HV & LV)	NOS	2						
24.1.5	BUS COUPLER PROTECTION RELAY PANEL	NOS	1						
24.1.6	BUS-BAR(DUPLICATED) PROTECTION RELAY PANEL	SET	1						

Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2A-SS)  SUPPLY OF FOLLOWING EQUIPMENT & MATERIALS (As per Technical Specification)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	Unit Ex-Works Price	TO BE QUOTED IN INR				
					Total Ex-Works Price	Mode of Transaction (Direct or Bought-out item)	Total Taxes & Duties applicable for transaction between bidder and OPTCL and not included in the price at Column(6) [For bought-out items, taxes & duties excluding Octroi/Entry Tax are invariably included in the price quoted at column(6)]		
							Excise Duty	VAT/Sales Tax	Other Levies (if any)
1	2	3	4	5	6=4x5	7	8	9	10
24.1.7	TIME SYNCH EQUIPMENT	NOS	1						
24.1.8	EVENT LOGGER PANEL	NOS	1						
24.2	<b>33 KV SIDE</b>								
24.2.1	SUB-STATION AUTOMATION SYSTEM (COMPRISING OF 05 Nos. FEEDER BAYS + 02 Nos. TRANSFORMER BAYS + 01 Nos. BUS COUPLER BAYS+ 01 Nos for Station transformer 2X315 KVA 33/0.43 KV ) bays	SET	1						
24.2.2	FEEDER PROTECTION RELAY PANEL	NOS	5						
24.2.3	STATION TRANSFORMER PROTECTION RELAY PANEL(220/33 KV, 40 MVA)	NOS	2						
24.2.4	BUS COUPLER PROTECTION RELAY PANEL	NOS	1						
24.2.5	TRANSFORMER PROTECTION RELAY PANEL(2X 33/0.43 KV, 315 KVA)	NOS	1						
25	<b>AC &amp; DC SYSTEM</b>								
25.1	<b>AC SYSTEM</b>								
25.1.1	MAIN AC DB,(HAVING 800 A,50KA,DRAWOUT TYPE ACB WITH 3 O/C,E/F,U/V RELAYING FACILITY INDOOR TYPE AS PER SPECIFICATION.(MAIN DB-1,MAIN DB-2 WITH B/C)	SET	1						
25.1.2	ACDB (HAVING 400A MCCB) AS PER SPECIFICATION (AC DB-1,AC DB-2 WITH B/C)	SET	1						



Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2A-SS)  SUPPLY OF FOLLOWING EQUIPMENT & MATERIALS (As per Technical Specification)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	Unit Ex-Works Price	TO BE QUOTED IN INR				
					Total Ex-Works Price	Mode of Transaction (Direct or Bought-out item)	Total Taxes & Duties applicable for transaction between bidder and OPTCL and not included in the price at Column(6) [For bought-out items, taxes & duties excluding Octroi/Entry Tax are invariably included in the price quoted at column(6)]		
							Excise Duty	VAT/Sales Tax	Other Levies (if any)
1	2	3	4	5	6=4x5	7	8	9	10
25.1.3	MAIN LIGHTING DISTRIBUTION BOARD (HAVING 250A MCCB AS INCOMER)AS PER SPECIFICATION (WITH DB-1,DB-2 & B/C)	SET	1						
25.1.4	INDOOR LIGHTING DISTRIBUTION BOARD AS PER SPECIFICATION. (WITH DB-1,DB-2 & B/C)	SET	1						
25.1.5	EMERGENCY LIGHTING DISTRIBUTION BOARD	SET	1						
25.1.6	INDOOR RECEPTACLE BOARD	SET	1						
25.2	<b>DC SYSTEM</b>								
25.2.1	220 V DC BOARD (HAVING 100A DC MCCB AS INCOMER, E/F (EARTH LEAKAGE), UNDER & OVER VOLTAGE AS PER SPECIFICATION (DC DB-1,DC DB-2 & B/C)	SET	1						
25.2.2	220 V DC EMERGENCY DISTRIBUTION BOARD	SET	1						
25.3	<b>BATTERY (350 AH PLANTE TYPE) for 220 V DC</b>	SET	2						
25.4	BATTERY CHARGER FOR 350 AH, 220 V DC (FLOAT & FLOAT CUM BOOST)	SET	2						
26	DISTILLED WATER PLANT of 10 L/Hr FOR BATTERY BANKS	SET	1						
27	WALKIE TALKIE SET	SET/PAIR	2						
28	PORTABLE ALUMINIUM LADDER EXTENDABLE TYPE OF ADEQUATE HEIGHT TO BE USED FOR MAINTENANCE OF EQUIPMENT INSIDE SWITCH YARD.(REFER TS-VOL-IIA-SCOPE OF WORKAT SL NO. 19)	NOS	2						

Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2A-SS)  SUPPLY OF FOLLOWING EQUIPMENT & MATERIALS (As per Technical Specification)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	Unit Ex-Works Price	TO BE QUOTED IN INR				
					Total Ex-Works Price	Mode of Transaction (Direct or Bought-out item)	Total Taxes & Duties applicable for transaction between bidder and OPTCL and not included in the price at Column(6) [For bought-out items, taxes & duties excluding Octroi/Entry Tax are invariably included in the price quoted at column(6)]		
							Excise Duty	VAT/Sales Tax	Other Levies (if any)
1	2	3	4	5	6=4x5	7	8	9	10
29	PEDESTAL MOUNTED WHEEL FITTED DERRICK FOR LIFTING/ LOWERING OF MATERIALS UP TO 1.5 TON CAPACITY.(REFER TS-VOL-IIA-SCOPE OF WORK AT SL NO. 20)	SET	1						
30	POWER WINCH NEAR STORE SHED FOR HANDLING MATERIALS UPTO 5 TON CAPACITY.	SET	1						
31	WATER COOLER WITH WATER PURIFIER(with ultra violet purification system of ISI mark) SYSTEM	NOS	1						
32	MAINTENANCE TESTING EQUIPMENT (REFER TS-VOL-IIA-16. <b>Maintenance &amp; Testing Equipment (ANNEXURE-II)</b> INDICATED IN -SCHEDULE OF REQUIREMENTS OF MAINTENANCE EQUIPMENT) & AS INDICATED IN THE TECHNICAL SPECIFICATION FOR GIS SYSTEM TS-E30	LOT	1						
33	OTHER TOOLS AND PLANTS (T&P's) REQUIREMENT (REFER TS-VOL-II AS INDICATED IN SCHEDULE OF REQUIREMENTS OTHER T&P's) & AS INDICATED IN THE TECHNICAL SPECIFICATION FOR GIS SYSTEM TS-E30	LOT	1						
34	ANY SPECIAL TOOLS & TACKLES REQUIRED FOR COMPLETE INSTALLATION OF THE 220KV GAS INSULATED SWITCHGEAR (To be supplied on Non Returnable basis and shall not be taken back by the bidder)	LOT	1						

Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2A-SS)  SUPPLY OF FOLLOWING EQUIPMENT & MATERIALS (As per Technical Specification)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	Unit Ex-Works Price	TO BE QUOTED IN INR				
					Total Ex-Works Price	Mode of Transaction (Direct or Bought-out item)	Total Taxes & Duties applicable for transaction between bidder and OPTCL and not included in the price at Column(6) [For bought-out items, taxes & duties excluding Octroi/Entry Tax are invariably included in the price quoted at column(6)]		
							Excise Duty	VAT/Sales Tax	Other Levies (if any)
1	2	3	4	5	6=4x5	7	8	9	10
35	OFFICE FURNITURE (REFER TS-VOL-IIA-SCOPE OF WORKAT SL NO. 18 ANNEXURE - IV ,INDICATED IN SCHEDULE OF REQUIREMENTS OFFICE FURNITURE) & PLACING IN CONTROL ROOM,CONFERENCE ROOM,OFFICE ROOMS,LIBRARY,TESTING LAB,etc.	LOT	1						
36	<b>EOT Crane for 220 kV GIS Hall (5T Capacity)</b>	NOS	1						
37	BEST QUALITY & APPROVED MAKE RUBBER MAT TO BE KEPT INFRONT & BACK SIDE (where doors of the panels are provided) OF ALL PANELS,BOARDS ETC.	LOT	1						
<b>TOTAL OF SUBSTATION (PART-I)-2A (SUPPLY)</b>									

Note:

1 Before filling up rate/amount etc. in the schedules bidders are requested to read carefully the instruction given in Vol-I of Bidding Document.

2 Bidders are required to fill up amount in all column except shaded portion.

3 Bidders are requested not to leave any column blank. If any column is left blank it shall be considered that amount against those items are included in any other item and the total amount for that item shall be calculated as free of cost (Zero value). No rate shall be furnished/obtained after bid opening (Ref clause no 33.4.1 of INB vol-I)

4 Kindly enclose soft copy of the duly filled schedule in a CD with the priced copy of Bid.

5 In mode of transaction column please indicate Direct/Bought-Out. For Taxes & Duties on Direct/Bought-out items ref clause 6.0 of SCC (Vol-IA)

Date :

Place :

(Signature) .....

( Name) .....

( Designation ) .....

(Common Seal) .....

**ORISSA POWER TRANSMISSION CORPORATION LIMITED**

**CONSTRUCTION OF 2X40 MVA (220/33 KV) 220/33 KV GAS INSULATED (SF6) SUB-STATION AT INFOCITY-II ,BHUBANESWAR & ASSOCIATED 220 KV DC LILO LINE ARRANGEMENT ON THE EXISTING NARENDRAPUR-MENDHASAL DC LINE ON TURNKEY BASIS**

**BID DOCUMENT No.:Sr. G.M- CPC- TENDER- GIS INFOCITY-II- PACKAGE- 23 / 2012-13**

**(Equipment/Materials F&I Price against Package GIS INFOCITY-II)**

<b>PART-I SCHEDULE-2B(FOR SUBSTATION)</b>					
<b>DESCRIPTION OF ITEMS(SCHEDULE-2B-SS)</b>			<b>TO BE QUOTED IN INR</b>		
<b>SI. No.</b>	<b>FREIGHT &amp; INSURANCE FOR SUPPLY OF FOLLOWING EQUIPMENTS ALONG WITH OTHER MATERIALS (As per Technical Specification)</b>	<b>UNITS</b>	<b>TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays &amp; 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]</b>	<b>Unit F&amp;I Price</b>	<b>Total F&amp;I Price</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6=4x5</b>
<b>1</b>	<b>245KV GIS EQUIPMENT</b>				
<b>1.1</b>	245kV, 2000 A, 40 kA for 3 sec, SF6 gas insulated Line feeder bay module each comprising of SF6 gas insulated circuit breaker, current transformer, bus-bar dis connectors with common grounding switch, dis connectors with safety grounding switch(es), high speed fault making grounding switch,local control cubicle, SF6 gas monitoring system for complete bay, gas insulated terminal connection for connecting Transformer (Oil/SF6 Bushing) with GIS through gas insulated interconnection bus etc to complete Transformer Bay Module.	<b>Set</b>	<b>2</b>		

SI. No.	DESCRIPTION OF ITEMS(SCHEDULE-2B-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
	FREIGHT & INSURANCE FOR SUPPLY OF FOLLOWING EQUIPMENTS ALONG WITH OTHER MATERIALS (As per Technical Specification)			Unit F&I Price	Total F&I Price
1	2	3	4	5	6=4x5
1.2	245kV, 2000A, 40 kA for 3 sec , SF6 gas insulated Line feeder bay module each comprising of SF6 gas insulated circuit breaker, current transformer, bus-bar dis connectors with common grounding switch, dis connectors with safety grounding switch(es), high speed fault making grounding switch,local control cubicle, SF6 gas monitoring system for complete bay, gas insulated terminal connection for connecting overhead line (Air/SF6) with GIS through gas insulated interconnection bus etc.to complete Feeder Bay Module.	Set	2		
1.3	245kV , 40 kA for 3 sec, 3- phase Isolated , SF6 gas insulated , metal enclosed 3150A bus bars each enclosed in bus enclosures running along the length of the switchgear to interconnect each of circuit breaker bay module. Each bus bar set shall be complete with potential transformer, dis connectors , bus bar grounding switch, SF6 gas monitoring system for the complete bus etc.	Set	2		
1.4	245kV, 3150A, 40 kA for 3 sec, SF6 gas insulated Bus Coupler Bay Module comprising of SF6 gas insulated circuit breaker, current transformer, dis connectors switches, disconnector with safety grounding switch(es). Local control cubicle, SF6 gas monitoring system for the complete bay etc.	Set	1		
2	<b>36 KV GIS EQUIPMENT</b>				

SI. No.	DESCRIPTION OF ITEMS(SCHEDULE-2B-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
	FREIGHT & INSURANCE FOR SUPPLY OF FOLLOWING EQUIPMENTS ALONG WITH OTHER MATERIALS (As per Technical Specification)			Unit F&I Price	Total F&I Price
1	2	3	4	5	6=4x5
2.1	36 KV, 1250 A, 25 kA for 3 sec, SF6 gas insulated Line feeder bay module each comprising of SF6 gas insulated circuit breaker, current transformer, bus-bar dis connectors with common grounding switch, dis connectors with safety grounding switch(es), high speed fault making grounding switch,local control cubicle, SF6 gas monitoring system for complete bay, gas insulated terminal connection for connecting Transformer (Oil/SF6 Bushing) with GIS through gas insulated interconnection bus etc to complete Transformer Bay Module.	Set	2		
2.2	36 KV, 1250A, 25 kA for 3 sec , SF6 gas insulated Line feeder bay module each comprising of SF6 gas insulated circuit breaker, current transformer, bus-bar dis connectors with common grounding switch, dis connectors with safety grounding switch(es), high speed fault making grounding switch,local control cubicle, SF6 gas monitoring system for complete bay, gas insulated terminal connection for connecting overhead line (Air/SF6) with GIS through gas insulated interconnection bus etc.to complete Feeder Bay Module.	Set	5		
2.3	36 KV , 25 kA for 3 sec, 3- phase Isolated , SF6 gas insulated , metal enclosed 2000 A bus bars each enclosed in bus enclosures running along the length of the switchgear to interconnect each of circuit breaker bay module. Each bus bar set shall be complete with potential transformer, dis connectors , bus bar grounding switch, SF6 gas monitoring system for the complete bus etc.	Set	2		

SI. No.	DESCRIPTION OF ITEMS(SCHEDULE-2B-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
	FREIGHT & INSURANCE FOR SUPPLY OF FOLLOWING EQUIPMENTS ALONG WITH OTHER MATERIALS (As per Technical Specification)			Unit F&I Price	Total F&I Price
1	2	3	4	5	6=4x5
2.4	36 KV, 1250A, 25 kA for 3 sec, SF6 gas insulated Bus Coupler Bay Module comprising of SF6 gas insulated circuit breaker, current transformer, disconnectors switches, disconnector with safety grounding switch(es). Local control cubicle, SF6 gas monitoring system for the complete bay etc.	Set	1		
2.5	36 KV, 800A, 25 kA for 3 sec , SF6 gas insulated Line feeder bay module each comprising of SF6 gas insulated circuit breaker, current transformer, bus-bar dis connectors with common grounding switch, dis connectors with safety grounding switch(es), high speed fault making grounding switch, local control cubicle, SF6 gas monitoring system for complete bay, gas insulated terminal connection for connecting overhead line (Air/SF6) with GIS through gas insulated interconnection bus etc. to be utilised for Station transformer (2X315 KVA,33/0.415 kv) Bay Module.	Set	1		
3	245 KV,4400pF,3CORE,SINGLE PHASE CAPACITOR VOLTAGE TRANSFORMER.(AIS)	NOS	6		
4	245 KV solid core Bus Post Insulators (AIS)	NOS	12		
5	216 KV, METAL OXIDE SURGE ARRESTOR,10 KA, class III	NOS	12		
6	30 KV, METAL OXIDE SURGE ARRESTOR, 10kA, Class II (AIS)	NOS	27		
7	36 KV solid core Bus Post Insulators	NOS	24		

Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2B-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
	FREIGHT & INSURANCE FOR SUPPLY OF FOLLOWING EQUIPMENTS ALONG WITH OTHER MATERIALS (As per Technical Specification)			Unit F&I Price	Total F&I Price
1	2	3	4	5	6=4x5
8	NCT FOR TRANSFORMER PROTECTION RATING 36 KV,(1200-600-300/1-1 A, HAVING TWO PS CLCORE (IN EACH POWER TRANSFORMER 1 No. NCT IN 220 KV SIDE )	NOS	2		
9	NCT FOR TRANSFORMER PROTECTION RATING 36 KV,(800-400-200/1-1 A, HAVING TWO PS CLCORE ( IN EACH POWER TRANSFORMER 33 KV SIDE-1 NO)	NOS	2		
10	XLPE Power Aluminium conductor cable for the GIS system (220 & 33 KV class)				
10.1	220KV XLPE CABLE 1000 sq mm (1000 AMPS SINGLE CORE)	LOT	1		
10.2	33KV CABLE 630 SQ. MM (800 AMPS SINGLE CORE)	LOT	1		
11	<b>BUS BAR &amp; CIRCUIT MATERIALS</b>				
11.1	160 KN ANTIFOG INSULATOR STRINGS <i>for single tension single Moose conductor</i> (TENSION)-220 KV	SET	12		
11.2	120 KN INSULATOR STRINGS <i>for Single tension Single Moose conductor</i> (TENSION)-33 KV	SET	24		
11.3	90 KN INSULATOR STRINGS <i>for Single Suspension Double/ Single Moose cond</i> (SUSPENSION)-220 KV	SET	6		
11.4	90 KN INSULATOR STRINGS <i>for Single Suspension Double/ Single Moose cond</i> (SUSPENSION)-33 KV	SET	12		
11.5	ACSR MOOSE CONDUCTOR	LOT	1		
11.6	HARDWARES & FITTINGS/SPACERS/CLAMP & CONNECTORS	LOT	1		



SI. No.	DESCRIPTION OF ITEMS(SCHEDULE-2B-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
	FREIGHT & INSURANCE FOR SUPPLY OF FOLLOWING EQUIPMENTS ALONG WITH OTHER MATERIALS (As per Technical Specification)			Unit F&I Price	Total F&I Price
1	2	3	4	5	6=4x5
12	SUBSTATION EARTHING SYSTEMS				
12.1	EARTHING CONDUCTOR FOR BURRIAL : 75X10 mm GI Flat for laying ( <i>spacing maximum 5m both way</i> )	LOT	1		
12.2	EARTHING CONDUCTOR: 50X6 mm GI Flat for Raiser from the burial earth mat to equipment,structure etc)	LOT	1		
12.3	EARTHING DEVICE & ASSOCIATED ACCESSORIES (50 mm heavy duty GI PERFORATED PIPE 3 mtrs long for treated earth pit)	LOT	1		
12.4	EARTHING DEVICE & ASSOCIATED ACCESSORIES 40mm MS rod 3 mtrs long for non treated earth pit)	LOT	1		
13	G.I Cable Trays including support GI angle suitable for different sections i.e. Section:1-1,2-2,3-3 & 4-4 along with its accessories as per TS.	LOT	1		
14	SWITCH YARD AC CONSOLE FOR LIGHTING ( <i>01 nos on 220 kV bay &amp; 01 Nos 33 kv Bay</i> )	NOS	2		
15	SWITCH YARD RECEPTACLE BOARD FOR TFR OIL FILTERATION ( <i>01 no. near 220/33 KV POWER Tfr</i> )	NOS	1		
16	SWITCH YARD RECEPTACLE BOARD FOR WELDING & OTHER EMERGENCY ( <i>01 nos in 220 kV bay&amp; 33 kv Bay</i> )	NOS	1		
17	CVT OUT DOOR CONSOLE BOXES	NOS	2		
18	SWITCH YARD STRUCTURES ( INCLUDING FOUNDATION BOLTS) FOR 220/132/33 KV CLASS				

Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2B-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
	FREIGHT & INSURANCE FOR SUPPLY OF FOLLOWING EQUIPMENTS ALONG WITH OTHER MATERIALS (As per Technical Specification)			Unit F&I Price	Total F&I Price
1	2	3	4	5	6=4x5
18.1	DIFFERENT TYPES OF LATTICE TYPE COLUMNS WITH DETAILS & DIFFERENT TYPE OF BEAMS WITH DETAILS				
18.1.1	TOTAL WEIGHT OF COLUMN & BEAM	MT	30		
18.2	SUPPORT STRUCTURES (PIPE TYPE) FOR ALL 220KV & 33KV EQUIPMENTS				
18.2.1	TOTAL WEIGHT OF PIPE TYPE SUPPORT STRUCTURE FOR ABOVE EQUIPMENT	MT	20		
18.3	Total weight of GI Nuts and bolts for the above structures	MT	2		
19	GENERAL EQUIPMENT & SUBSTATION ACCESSORIES				
19.1	POWER CABLES,1.1KV,XLPE,ARMOURED, ALUMINIUM CONDUCTOR (As per Specification)				
19.1.1	3.5 CX300 mm <sup>2</sup>				
19.1.2	3.5 CX185 mm <sup>2</sup>				
19.1.3	3.5 CX120 mm <sup>2</sup>				
19.1.4	3.5 CX70 mm <sup>2</sup>				
19.1.5	3.5 CX35 mm <sup>2</sup>				
19.1.6	4 CX 16 mm <sup>2</sup>				
19.1.7	4 CX 6 mm <sup>2</sup>				
19.1.8	2CX 6 mm <sup>2</sup>				
19.2	CONTROL CABLES,1.1 KV, PVC,STRANDED COPPER(As per specification)				

SI. No.	DESCRIPTION OF ITEMS(SCHEDULE-2B-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
	FREIGHT & INSURANCE FOR SUPPLY OF FOLLOWING EQUIPMENTS ALONG WITH OTHER MATERIALS (As per Technical Specification)			Unit F&I Price	Total F&I Price
1	2	3	4	5	6=4x5
19.2.1	4 CX 2.5 mm <sup>2</sup>				
19.2.2	5 CX 2.5 mm <sup>2</sup>				
19.2.3	7CX 2.5 mm <sup>2</sup>				
19.2.4	10 CX 2.5 mm <sup>2</sup>				
19.2.5	12 CX 2.5 mm <sup>2</sup>				
19.2.6	16 CX 2.5 mm <sup>2</sup>				
19.2.7	19 CX 2.5 mm <sup>2</sup>				
19.2.8	1CX 120 mm <sup>2</sup> BAT TO BAT CHARGER & CHARGER TO DCDB				
19.3	<b>POWER CABLES,1.1KV,XLPE,ARMOURED, ALUMINIUM CONDUCTOR (As per Technical Specification)</b>	LS	1		
19.4	<b>CONTROL CABLES,1.1 KV, PVC,STRANDED COPPER(As per Technical specification)</b>	LS	1		
20	<b>ACCESSORIES FOR PLLC/OPGW SYSTEM AS PER TECHNICAL SPECIFICATION)</b>				
20.1	24 Fibre (Dual Window Single Mode )OPGW fibre Optic Cable.	KM	3		
20.2	OPGW hardware set like suspension Assembly,Tension Assembly (Dead end assembly, Pass through assembly) ,Vibration Damper,Down Lead Clamp Assembly for 24 Fibre (DWSM) OPGW,Joint Box etc.	LOT	1		

SI. No.	DESCRIPTION OF ITEMS(SCHEDULE-2B-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
	FREIGHT & INSURANCE FOR SUPPLY OF FOLLOWING EQUIPMENTS ALONG WITH OTHER MATERIALS (As per Technical Specification)			Unit F&I Price	Total F&I Price
1	2	3	4	5	6=4x5
20.3	FODP(Fibre Optic Distribution Panel) 48 F: Indoor type,rack mounted with FCPC coupling and pig tails (DWDM Fibre)	No.	1		
20.4	Fibre Optic Approach cable & accessories like 24 Fibre (DWDM) ,HDPE Pipe for above fibre approach cable	LOT	1		
20.5	Integrated universal MOX (U MUX) having inter phase facility for Speech,Data & HV line protection	SET	1		
20.6	Set of Spare cards for U MUX (1 set)(1 No each module)	LOT	1		
20.7	Remote Terminal Unit (RTU) and Transducer Cubicle designed for Power Utility SCADA operation. Complied to IEC 870-5-101 specifications Transducers and interfacing cards for Analog input, Pulse input, Binary input and Digital output (optional)	No.	1		
20.8	Splitter suitable for interacting with CFE panel at BBSR sub-LDC	No.	1		
20.9	<b><i>EPABX(Telephone Exchange) standard complied to ITU-T-G-711,G-712,Q-507, Q-517 capacity 16 lines /Trunks (2W,4W,RSU),Universal Numbering scheme,Operating console,Desktop PC-Menue driven.</i></b>	NO	1		
20.10	25 PAIR ARMOURED JELLY FILLED CABLE	MTRS	1000		
20.11	10 PAIR ARMOURED TELEPHONE CABLES	MTRS	1000		
20.12	4 PAIR NON ARMOURED TELEPHONE CABLES	MTRS	400		
20.13	2 WIRE TELEPHONE SET	NO	10		

Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2B-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
	FREIGHT & INSURANCE FOR SUPPLY OF FOLLOWING EQUIPMENTS ALONG WITH OTHER MATERIALS (As per Technical Specification)			Unit F&I Price	Total F&I Price
1	2	3	4	5	6=4x5
20.14	VRLA TYPE BATTERY 350 AH(FOR 48 V)	SET	2		
20.15	BATTERY CHARGER FOR 48 V, 75 A Float cum Boost(as recommended by the VRLA Battery manufacturer)	SET	2		
20.16	48 V DCDB	SET	1		
21	<b>SUPPLY OF STATION TRANSFORMER &amp; OTHER MATERIALS FOR MEETING THE AUXILIARY SUPPLY OF THE SUB-STATION AS PER TECHNICAL SPECIFICATION</b>				
21.1	STATION TRANSFORMER 33KV/433V,315 KVA (AS PER SPECIFICATION)	NOS	2		
21.2	33 KV AB SWITCH IN 33 KV SIDE(600AMP),HG FUSE, DP STRUCTURE(preferably by using 200X100 mm RS Joist),ANGLE FOR BRACING OF DP STRUCTURE,POWER CABLES, CHANEL, FOR ERECTION OF TRANSFORMER INCLUDING INSULATORS, CONDUCTOR, CLAMPS & CONNECTOR, JUMPERING AND OTHER ACCESSORIES FOR COMMISSIONING OF THE STN TRANSFORMER.IT INCLUDES LT OUT DOOR KIOSK MADE OUT OF 14 SWG GI MARSH-ALLING BOX OR BETTER , HAVING CABLE TERMINATING FACILITY FOR INCOMING & OUT GOING TO THE BOX. THE RATING OF THE BUS BAR, TERMINAL BOX & STUDS TO BE USED SHALL HAVE CONTINEOUS RATING OF 1000 AMP. MARSHALLING BOXES ARE TO BE INSTALLED NEAR TO THE AUXILIARY STATION TRANSFORMERS.	SETS	2		

SI. No.	DESCRIPTION OF ITEMS(SCHEDULE-2B-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
	FREIGHT & INSURANCE FOR SUPPLY OF FOLLOWING EQUIPMENTS ALONG WITH OTHER MATERIALS (As per Technical Specification)			Unit F&I Price	Total F&I Price
1	2	3	4	5	6=4x5
22	SUB STATION LIGHTING (AS PER SPECIFICATION AND APPROVED DRAWINGS) (includes Switch yard, Colony street and other street area)				
22.1	<i>SUB-STATION SWITCH YARD LIGHTING, IT INCLUDES SUPPLY OF FIXTURES &amp; 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 maintained).</i>	LOT	1		
22.2	ILLUMINATION SYSTEM (220 KV & 33 KV GIS BUILDING & CONTROL ROOM BUILDING)				
22.3	<i>SUPPLY OF FIXTURES &amp; 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 maintained)</i>	LOT	1		
22.4	STREET LIGHTING, IT INCLUDES SUPPLY OF GI TUBULAR POLE, WITH LED LIGHTING FIXTURES WITH LAMPS of reputed make (Philips/CGL/Bajaj) (TO BE PROVIDED IN THE SWITCH YARD, ALONG THE ROADS (APPROACH INSIDE YARD AND OTHER ROADS).	LOT	1		

SI. No.	DESCRIPTION OF ITEMS(SCHEDULE-2B-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
	FREIGHT & INSURANCE FOR SUPPLY OF FOLLOWING EQUIPMENTS ALONG WITH OTHER MATERIALS (As per Technical Specification)			Unit F&I Price	Total F&I Price
1	2	3	4	5	6=4x5
22.5	<p><b>ELECTRICAL SUPPLY TO STREET LIGHTING, COLONY QUARTERS:-</b></p> <p>&gt; 1 NO. OUTDOOR KIOSK FOR STREET LIGHTING PURPOSE HAVING 2 NOS 200 AMP SWITCH FUSE UNITS AND , 6 NOS.OUT LETS OF 32 AMP MCB FOR STREET LIGHTING. (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.)</p> <p>&gt; 1 NO. OUTDOOR KIOSK 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. PROVISION OF CABLE(2C/4C-6 SQM) FROM THE OUT DOOR KIOSK INSTALLED NEAR THE QUARTER TO THE RESPECTIVE QUARTERS UP TO THE SWITCH FUSE UNIT PROVIDED INSIDE THE QUARTERS. INDIVIDUAL CABLES FOR INDIVIDUAL QUARTERS. IT ALSO INCLUDES PROPER EARTHING OF THE QUARTER AS PER THE STANDARD PRACTICE AND SPECIFICATION.)</p> <p>&gt; 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. (LT UNDER GROUND POWER CABLES OF 4CX6/16 SQMM SHALL BE CONNECTED TO THE JUNCTION BOX.) THE JUNCTION BOX SHALL HAVE PROVISION OF FUSES, BUSES, CONNECTORS FOR CABLE IN AND OUT. THIS INCLUDES SUPPLY OF ALL MATERIALS(EXCEPT CABLES) AS PER APPROVED DRAWING AND SPECIFICATION TO COMPLETE THE STREET LIGHTING SYSTEM. PROPER EARTHING AS PER STANDARD PRACTICE FOR STRRET LIGHT POLES AND OUTDOOR KIOSKS ARE ALSO INCLUDED IN THE SCOPE OF WORKS. THE STREET LIGHT SHALL BE OF LED LAMP FITTINGS INCLUDING LAMPS. (* REMARKS : FOR SUPPLY OF ALL THE CABLES AS INDICATED ARE COVERED IN THE CABLE ITEMS AS INDICATED ABOVE )</p>	LOT	1		

Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2B-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
	FREIGHT & INSURANCE FOR SUPPLY OF FOLLOWING EQUIPMENTS ALONG WITH OTHER MATERIALS (As per Technical Specification)			Unit F&I Price	Total F&I Price
1	2	3	4	5	6=4x5
22	2 TR CAPACITY 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. (*SUPPLY OF CABLES ARE COVERED IN CABLE ITEMS AS INDICATED ABOVE )	LOT	1		
23	<b>FIRE FIGHTING SYSTEM(PORTABLE /TROLLEY/ WHEEL MOUNTEDFIRE EXTINGUISHERS SETS FOR CONTROL ROOM,EQUIPMENT LIKE TRANSFORMER AND OTHER AREAS AS PER TECH SPEC(REFER TS-VOL-IIA-SCOPE OF WORKAT SL NO. 15-ANNEXURE - I)</b>				
23.1	FOAM TYPE-9 LTRS	NOS	4		
23.2	DRY CHEMICAL POWDER(TROLLEY MOUNTED)- 22.5 KGS	NOS	4		
23.3	DRY POWDER TYPE - 5 KGS	NOS	4		
23.4	CO <sub>2</sub> - 4.5 KGS	NOS	10		
23.5	CO <sub>2</sub> - 9 KGS	NOS	10		
23.6	CO <sub>2</sub> (TROLLY MOUNTED)- 22.5 KGS	NOS	4		
23.7	9 litre water type	Nos.	4		
23.8	4.5 kg DCP type	Nos.	4		
23.9	50 Litres Mechanical Foam type	Nos.	2		



Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2B-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
	FREIGHT & INSURANCE FOR SUPPLY OF FOLLOWING EQUIPMENTS ALONG WITH OTHER MATERIALS (As per Technical Specification)			Unit F&I Price	Total F&I Price
1	2	3	4	5	6=4x5
23.10	Smoke detection system	Set	1		
23.11	Fire Alarm System	Set	1		
23.12	FIRE BUCKET (6 NOS IN EACH STAND) WITH STAND	SET	5		
24	<b>PROTECTION,CONTROL METERING, EVENT LOGGER,BUS BAR PROT N PAN AS PER TECH SPEC WITH SUB-STATION AUTOMATION IEC 61850 compliant &amp; as per technical specification.</b>				
24.1	<b>220 KV SIDE</b>				
24.1.1	SUB-STATION AUTOMATION SYSTEM (COMPRISING OF 02 Nos. FEEDER BAYS + 02 TRANSFORMER BAYS + 01 Nos. BUS COUPLER BAYS)	SET	1		
24.1.2	BCU FOR CONTROLLING AND MONITORING OF AUXILIARY SYSTEM & OTHER ACCESSORIES( COMPRISING SERVERS,ENGG STATION,WORKS STATION,UPS etc (TO BE LOCATED IN THE CENTRAL CONTROL ROOM)FOR BOTH 220 & 33 KV SIDE OF THE GIS SUB-STATION. As per Technical specification.	SET	1		
24.1.3	FEEDER PROTECTION RELAY PANEL(MAIN-I & MAIN-II PROTECTION WITH AUTO RECLOSURE )	NOS	2		
24.1.4	TRANSFORMER PROTECTION RELAY PANEL (MAIN-I & MAIN-II PROTECTION CONSIDERING BOTH HV & LV)	NOS	2		
24.1.5	BUS COUPLER PROTECTION RELAY PANEL	NOS	1		

SI. No.	DESCRIPTION OF ITEMS(SCHEDULE-2B-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
	FREIGHT & INSURANCE FOR SUPPLY OF FOLLOWING EQUIPMENTS ALONG WITH OTHER MATERIALS (As per Technical Specification)			Unit F&I Price	Total F&I Price
1	2	3	4	5	6=4x5
24.1.6	BUS-BAR(DUPLICATED) PROTECTION RELAY PANEL	SET	1		
24.1.7	TIME SYNCH EQUIPMENT	NOS	1		
24.1.8	EVENT LOGGER PANEL	NOS	1		
<b>24.2</b>	<b>33 KV SIDE</b>				
24.2.1	SUB-STATION AUTOMATION SYSTEM (COMPRISING OF 05 Nos. FEEDER BAYS + 02 Nos. TRANSFORMER BAYS + 01 Nos. BUS COUPLER BAYS+ 01 Nos for Station transformer 2X315 KVA 33/0.43 KV ) bays	SET	1		
24.2.2	FEEDER PROTECTION RELAY PANEL	NOS	5		
24.2.3	STATION TRANSFORMER PROTECTION RELAY PANEL(220/33 KV, 40 MVA)	NOS	2		
24.2.4	BUS COUPLER PROTECTION RELAY PANEL	NOS	1		
24.2.5	TRANSFORMER PROTECTION RELAY PANEL(2X 33/0.43 KV, 315 KVA)	NOS	1		
<b>25</b>	<b>AC &amp; DC SYSTEM</b>				
<b>25.1</b>	<b>AC SYSTEM</b>				
25.1.1	MAIN AC DB,(HAVING 800 A,50KA,DRAWOUT TYPE ACB WITH 3 O/C,E/F,U/V RELAYING FACILITY INDOOR TYPE AS PER SPECIFICATION.(MAIN DB-1,MAIN DB-2 WITH B/C)	SET	1		
25.1.2	ACDB (HAVING 400A MCCB) AS PER SPECIFICATION (AC DB-1,AC DB-2 WITH B/C)	SET	1		

Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2B-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
	FREIGHT & INSURANCE FOR SUPPLY OF FOLLOWING EQUIPMENTS ALONG WITH OTHER MATERIALS (As per Technical Specification)			Unit F&I Price	Total F&I Price
1	2	3	4	5	6=4x5
25.1.3	MAIN LIGHTING DISTRIBUTION BOARD (HAVING 250A MCCB AS INCOMER)AS PER SPECIFICATION (WITH DB-1,DB-2 & B/C)	SET	1		
25.1.4	INDOOR LIGHTING DISTRIBUTION BOARD AS PER SPECIFICATION. (WITH DB-1,DB-2 & B/C)	SET	1		
25.1.5	EMERGENCY LIGHTING DISTRIBUTION BOARD	SET	1		
25.1.6	INDOOR RECEPTACLE BOARD	SET	1		
25.2	<b>DC SYSTEM</b>				
25.2.1	220 V DC BOARD (HAVING 100A DC MCCB AS INCOMER, E/F (EARTH LEAKAGE), UNDER & OVER VOLTAGE AS PER SPECIFICATION (DC DB-1,DC DB-2 & B/C)	SET	1		
25.2.2	220 V DC EMERGENCY DISTRIBUTION BOARD	SET	1		
25.3	<b>BATTERY (350 AH PLANTE TYPE) for 220 V DC</b>	SET	2		
25.4	BATTERY CHARGER FOR 350 AH, 220 V DC (FLOAT & FLOAT CUM BOOST)	SET	2		
26	DISTILLED WATER PLANT of 10 L/Hr FOR BATTERY BANKS	SET	1		
27	WALKIE TALKIE SET	SET/PAIR	2		
28	PORTABLE ALUMINIUM LADDER EXTENDABLE TYPE OF ADEQUATE HEIGHT TO BE USED FOR MAINTENANCE OF EQUIPMENT INSIDE SWITCH YARD.(REFER TS-VOL-IIA-SCOPE OF WORKAT SL NO. 19)	NOS	2		

SI. No.	DESCRIPTION OF ITEMS(SCHEDULE-2B-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
	FREIGHT & INSURANCE FOR SUPPLY OF FOLLOWING EQUIPMENTS ALONG WITH OTHER MATERIALS (As per Technical Specification)			Unit F&I Price	Total F&I Price
1	2	3	4	5	6=4x5
29	PEDESTAL MOUNTED WHEEL FITTED DERRICK FOR LIFTING/ LOWERING OF MATERIALS UP TO 1.5 TON CAPACITY.(REFER TS-VOL-IIA-SCOPE OF WORKAT SL NO. 20)	SET	1		
30	POWER WINCH NEAR STORE SHED FOR HANDLING MATERIALS UPTO 5 TON CAPACITY.	SET	1		
31	WATER COOLER WITH WATER PURIFIER(with ultra violet purification system of ISI mark) SYSTEM	NOS	1		
32	MAINTENANCE TESTING EQUIPMENT (REFER TS-VOL-IIA-16. <b>Maintenance &amp; Testing Equipment (ANNEXURE-II)</b> INDICATED IN -SCHEDULE OF REQUIREMENTS OF MAINTENANCE EQUIPMENT) & AS INDICATED IN THE TECHNICAL SPECIFICATION FOR GIS SYSTEM TS-E30	LOT	1		
33	OTHER TOOLS AND PLANTS (T&P's) REQUIREMENT (REFER TS-VOL-II AS INDICATED IN SCHEDULE OF REQUIREMENTS OTHER T&P's) & AS INDICATED IN THE TECHNICAL SPECIFICATION FOR GIS SYSTEM TS-E30	LOT	1		
34	ANY SPECIAL TOOLS & TACKLES REQUIRED FOR COMPLETE INSTALLATION OF THE 220KV GAS INSULATED SWITCHGEAR (To be supplied on Non Returnable basis and shall not be taken back by the bidder)	LOT	1		

Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2B-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
	FREIGHT & INSURANCE FOR SUPPLY OF FOLLOWING EQUIPMENTS ALONG WITH OTHER MATERIALS (As per Technical Specification)			Unit F&I Price	Total F&I Price
1	2	3	4	5	6=4x5
35	OFFICE FURNITURE (REFER TS-VOL-IIA-SCOPE OF WORK AT SL NO. 18 ANNEXURE - IV ,INDICATED IN SCHEDULE OF REQUIREMENTS OFFICE FURNITURE) & PLACING IN CONTROL ROOM,CONFERENCE ROOM,OFFICE ROOMS,LIBRARY, TESTING LAB,etc.	LOT	1		
36	EOT Crane for 220 kV GIS Hall (5T Capacity)	NOS	1		
37	BEST QUALITY & APPROVED MAKE RUBBER MAT TO BE KEPT INFRONT & BACK SIDE (where doors of the panels are provided) OF ALL PANELS,BOARDS ETC.	LOT	1		
<b>TOTAL OF SUBSTATION (PART-I)-2B (F&amp;I)</b>					

**Note:**

- 1 Before filling up rate/amount etc. in the schedules bidders are requested to read carefully the instruction given in Vol-I of Bidding Document.
- 2 Bidders are required to fill up amount in all column except shaded portion.
- 3 Bidders are requested not to leave any column blank. If any column is left blank it shall be considered that amount against those items are included in any other item and the total amount for that item shall be calculated as free of cost (Zero value). No rate shall be furnished/obtained after bid opening (Ref clause no 33.4.1 of INB vol-I)
- 4 Kindly enclose soft copy of the duly filled schedule in a CD with the priced copy of Bid.
- 5 Bidder should be quoted including service tax, no service tax shall be paid/reimbursed.

Date :  
Place :

(Signature) .....  
( Name) .....  
( Designation ) .....  
(Common Seal) .....

**ODISHA POWER TRANSMISSION CORPORATION LIMITED**  
**CONSTRUCTION OF 2X40 MVA (220/33 KV) 220/33 KV GAS INSULATED (SF6) SUB-STATION AT INFOCITY-II ,BHUBANESWAR & ASSOCIATED**  
**220 KV DC LILO LINE ARRANGEMENT ON THE EXISTING NARENDRAPUR-MENDHASAL DC LINE ON TURNKEY BASIS**

BID DOCUMENT No.:Sr. G.M- CPC- TENDER- GIS INFOCITY-II- PACKAGE- 23 / 2012-13

(Equipment/Materials F&I Price against Package GIS INFOCITY-II)

PART-I, SCHEDULE-2C (FOR SUBSTATION)					
Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2C-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
				Unit Rate	Total Price
1	2	3	4	5	6=4x5
<b>A</b>	<b>ELECTRICAL WORKS</b>				
<b>1</b>	<b>245KV GIS EQUIPMENT</b>				
<b>1.1</b>	245kV, 2000 A, 40 kA for 3 sec, SF6 gas insulated Line feeder bay module each comprising of SF6 gas insulated circuit breaker, current transformer, bus-bar dis connectors with common grounding switch, dis connectors with safety grounding switch(es), high speed fault making grounding switch,local control cubicle, SF6 gas monitoring system for complete bay, gas insulated terminal connection for connecting Transformer (Oil/SF6 Bushing) with GIS through gas insulated interconnection bus etc to complete Transformer Bay Module.	<b>Set</b>	<b>2</b>		
<b>1.2</b>	245kV, 2000A, 40 kA for 3 sec , SF6 gas insulated Line feeder bay module each comprising of SF6 gas insulated circuit breaker, current transformer, bus-bar dis connectors with common grounding switch, dis connectors with safety grounding switch(es), high speed fault making grounding switch,local control cubicle, SF6 gas monitoring system for complete bay, gas insulated terminal connection for connecting overhead line (Air/SF6) with GIS through gas insulated interconnection bus etc.to complete Feeder Bay Module.	<b>Set</b>	<b>2</b>		
<b>1.3</b>	245kV , 40 kA for 3 sec, 3- phase Isolated , SF6 gas insulated , metal enclosed 3150A bus bars each enclosed in bus enclosures running along the length of the switchgear to interconnect each of circuit breaker bay module. Each bus bar set shall be complete with potential transformer, dis connectors , bus bar grounding switch, SF6 gas monitoring system for the complete bus etc.	<b>Set</b>	<b>2</b>		

Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2C-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
				Unit Rate	Total Price
1	2	3	4	5	6=4x5
1.4	245kV, 3150A, 40 kA for 3 sec, SF6 gas insulated Bus Coupler Bay Module comprising of SF6 gas insulated circuit breaker, current transformer, dis connectors switches, disconnecter with safety grounding switch(es). Local control cubicle, SF6 gas monitoring system for the complete bay etc.	Set	1		
1.5	HV Test Charges for 220KV GIS	Lot	1		
2	<b>36 KV GIS EQUIPMENT</b>				
2.1	36 KV, 1250 A, 25 kA for 3 sec, SF6 gas insulated Line feeder bay module each comprising of SF6 gas insulated circuit breaker, current transformer, bus-bar dis connectors with common grounding switch, dis connectors with safety grounding switch(es), high speed fault making grounding switch,local control cubicle, SF6 gas monitoring system for complete bay, gas insulated terminal connection for connecting Transformer (Oil/SF6 Bushing) with GIS through gas insulated interconnection bus etc to complete Transformer Bay Module.	Set	2		
2.2	36 KV, 1250A, 25 kA for 3 sec , SF6 gas insulated Line feeder bay module each comprising of SF6 gas insulated circuit breaker, current transformer, bus-bar dis connectors with common grounding switch, dis connectors with safety grounding switch(es), high speed fault making grounding switch,local control cubicle, SF6 gas monitoring system for complete bay, gas insulated terminal connection for connecting overhead line (Air/SF6) with GIS through gas insulated interconnection bus etc.to complete Feeder Bay Module.	Set	5		
2.3	36 KV , 25 kA for 3 sec, 3- phase Isolated , SF6 gas insulated , metal enclosed 2000 A bus bars each enclosed in bus enclosures running along the length of the switchgear to interconnect each of circuit breaker bay module. Each bus bar set shall be complete with potential transformer, dis connectors , bus bar grounding switch, SF6 gas monitoring system for the complete bus etc.	Set	2		

Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2C-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
				Unit Rate	Total Price
1	2	3	4	5	6=4x5
2.4	36 KV, 1250A, 25 kA for 3 sec, SF6 gas insulated Bus Coupler Bay Module comprising of SF6 gas insulated circuit breaker, current transformer, disconnectors switches, disconnector with safety grounding switch(es). Local control cubicle, SF6 gas monitoring system for the complete bay etc.	Set	1		
2.5	36 KV, 800A, 25 kA for 3 sec , SF6 gas insulated Line feeder bay module each comprising of SF6 gas insulated circuit breaker, current transformer, bus-bar disconnectors with common grounding switch, dis connectors with safety grounding switch(es), high speed fault making grounding switch,local control cubicle, SF6 gas monitoring system for complete bay, gas insulated terminal connection for connecting overhead line (Air/SF6) with GIS through gas insulated interconnection bus etc. to be utilised for Station transformer (2X315 KVA,33/0.415 kv) Bay Module.	Set	1		
2.6	HV Test Charges for 33 KV GIS	Lot	1		
3	245 KV,4400pF,3CORE,SINGLE PHASE CAPACITOR VOLTAGE TRANSFORMER. (AIS)	NOS	6		
4	245 KV solid core Bus Post Insulators (AIS)	NOS	12		
5	216 KV, METAL OXIDE SURGE ARRESTOR,10 KA, class III	NOS	12		
6	30 KV, METAL OXIDE SURGE ARRESTOR, 10kA, Class II (AIS)	NOS	27		
7	36 KV solid core Bus Post Insulators	NOS	24		
8	NCT FOR TRANSFORMER PROTECTION RATING 36 KV,(1200-600-300/1-1 A, HAVING TWO PS CLCORE (IN EACH POWER TRANSFORMER 1 No. NCT IN 220 KV SIDE )	NOS	2		
9	NCT FOR TRANSFORMER PROTECTION RATING 36 KV,(800-400-200/1-1 A, HAVING TWO PS CLCORE ( IN EACH POWER TRANSFORMER 33 KV SIDE-1 NO)	NOS	2		
10	XLPE Power Aluminium conductor cable for the GIS system (220 & 33 KV class)				
10.1	220KV XLPE CABLE 1000 sq mm (1000 AMPS SINGLE CORE)	LOT	1		
10.2	33KV CABLE 630 SQ. MM (800 AMPS SINGLE CORE)	LOT	1		



Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2C-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
				Unit Rate	Total Price
1	2	3	4	5	6=4x5
<b>11</b>	<b>BUS BAR &amp; CIRCUIT MATERIALS</b>				
11.1	160 KN ANTIFOG INSULATOR STRINGS <i>for single tension single Moose conductor</i> (TENSION)-220 KV	SET	12		
11.2	120 KN INSULATOR STRINGS <i>for Single tension Single Moose conductor</i> (TENSION)-33 KV	SET	24		
11.3	90 KN INSULATOR STRINGS <i>for Single Suspension Double/ Single Moose cond</i> (SUSPENSION)-220 KV	SET	6		
11.4	90 KN INSULATOR STRINGS <i>for Single Suspension Double/ Single Moose cond</i> (SUSPENSION)-33 KV	SET	12		
11.5	ACSR MOOSE CONDUCTOR	LOT	1		
11.6	HARDWARES & FITTINGS/SPACERS/CLAMP & CONNECTORS	LOT	1		
<b>12</b>	<b>SUBSTATION EARTHING SYSTEMS</b>				
12.1	EARTHING CONDUCTOR FOR BURRIAL : 75X10 mm GI Earth Flat for laying ( <i>spacing maximum 5m</i> ) (Substation earth mat): Design, engineering, supply (except the 75X10 mm GI Earth Flat, 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 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.	LOT	1		
12.2	EARTHING CONDUCTOR: 50x6 mm GI Flat for Raiser from the burial earth mat to equipment, structure including proper welding, bending and anti corrosive painting etc from the finished ground level to the top of the structure and equipment shall be with 50X6 mm GI Flats, as per approved drawing and specification.	LOT	1		
12.3	EARTHING DEVICE & ASSOCIATED ACCESSORIES (50 mm heavy duty GI PERFORATED PIPE 3 mtrs long for treated earth pit): perforated 50 mm Heavy duty GI pipes for treated earth pits (with details of treatment as per IS) including, excavation, supply of Bentonate powder and other materials for the treated earth pit as per standard practice and as per specification.	LOT	1		

Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2C-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
				Unit Rate	Total Price
1	2	3	4	5	6=4x5
12.4	EARTHING DEVICE & ASSOCIATED ACCESSORIES 40mm MS rod 3 mtrs long for non treated earth pit) to be inserted directly inside the soil.	LOT	1		
13	G.I Cable Trays including support GI angle suitable for different sections i.e. Section:1-1,2-2,3-3 & 4-4 along with its accessories as per TS.	LOT	1		
14	SWITCH YARD AC CONSOLE FOR LIGHTING (01 nos on 220 kV bay & 01 Nos 33 kv Bay )	NOS	2		
15	SWITCH YARD RECEPTACLE BOARD FOR TFR OIL FILTERATION (01 no. near 220/33 KV POWER Tfr)	NOS	1		
16	SWITCH YARD RECEPTACLE BOARD FOR WELDING & OTHER EMERGENCY (01 nos in 220 kV bay& 33 kv Bay )	NOS	1		
17	CVT OUT DOOR CONSOLE BOXES	NOS	2		
18	<b>SWITCH YARD STRUCTURES ( INCLUDING FOUNDATION BOLTS) FOR 220/132/33 KV CLASS</b>				
18.1	<b>DIFFERENT TYPES OF LATICE TYPE COLUMNS WITH DETAILS &amp; DIFFERENT TYPE OF BEAMS WITH DETAILS</b>				
18.1.1	<b>TOTAL WEIGHT OF COLUMN &amp; BEAM</b>	MT	30		
18.2	<b>SUPPORT STRUCTURES (PIPE TYPE) FOR ALL 220KV &amp; 33KV EQUIPMENTS</b>				
18.2.1	TOTAL WEIGHT OF PIPE TYPE SUPPORT STRUCTURE FOR ABOVE EQUIPMENT	MT	20		
18.3	<b>Total weight of GI Nuts and bolts for the above structures</b>	MT	2		
19	<b>GENERAL EQUIPMENT &amp; SUBSTATION ACCESSORIES</b>				
19.1	<b>POWER CABLES,1.1KV,XLPE,ARMOURED, ALUMINIUM CONDUCTOR (As per Specification)</b>				
19.1.1	3.5 CX300 mm²				
19.1.2	3.5 CX185 mm²				
19.1.3	3.5 CX120 mm²				

Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2C-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
				Unit Rate	Total Price
1	2	3	4	5	6=4x5
19.1.4	3.5 CX70 mm <sup>2</sup>				
19.1.5	3.5 CX35 mm <sup>2</sup>				
19.1.6	4 CX 16 mm <sup>2</sup>				
19.1.7	4 CX 6 mm <sup>2</sup>				
19.1.8	2CX 6 mm <sup>2</sup>				
19.2	<b>CONTROL CABLES,1.1 KV, PVC,STRANDED COPPER(As per specification)</b>				
19.2.1	4 CX 2.5 mm <sup>2</sup>				
19.2.2	5 CX 2.5 mm <sup>2</sup>				
19.2.3	7CX 2.5 mm <sup>2</sup>				
19.2.4	10 CX 2.5 mm <sup>2</sup>				
19.2.5	12 CX 2.5 mm <sup>2</sup>				
19.2.6	16 CX 2.5 mm <sup>2</sup>				
19.2.7	19 CX 2.5 mm <sup>2</sup>				
19.2.8	1CX 120 mm <sup>2</sup> BAT TO BAT CHARGER & CHARGER TO DCDB				
19.3	<b>POWER CABLES,1.1KV,XLPE,ARMOURED, ALUMINIUM CONDUCTOR (As per Technical Specification)</b>	LS	1		
19.4	<b>CONTROL CABLES,1.1 KV, PVC,STRANDED COPPER(As per Technical specification)</b>	LS	1		
20	<b>ACCESSORIES FOR PLLC/OPGW SYSTEM AS PER TECHNICAL SPECIFICATION)</b>				
20.1	24 Fibre (Dual Window Single Mode )OPGW fibre Optic Cable.	KM	3		
20.2	OPGW hardware set like suspension Assembly,Tension Assembly (Dead end assembly, Pass through assembly) ,Vibration Damper,Down Lead Clamp Assembly for 24 Fibre (DWSM) OPGW,Joint Box etc.	LOT	1		
20.3	FODP(Fibre Optic Distribution Panel) 48 F: Indoor type,rack mounted with FCPC coupling and pig tails (DWSM Fibre)	No.	1		

Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2C-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr.+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr.+2T+1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
				Unit Rate	Total Price
1	2	3	4	5	6=4x5
20.4	Fibre Optic Approach cable & accessories like 24 Fibre (DWDM) ,HDPE Pipe for above fibre approach cable	LOT	1		
20.5	Integrated universal MOX (U MUX) having inter phase facility for Speech,Data & HV line protection	SET	1		
20.6	Set of Spare cards for U MUX (1 set)(1 No each module)	LOT	1		
20.7	Remote Terminal Unit (RTU) and Transducer Cubicle designed for Power Utility SCADA operation. Complied to IEC 870-5-101 specifications Transducers and interfacing cards for Analog input, Pulse input, Binary input and Digital output (optional)	No	1		
20.8	Splitter suitable for interacting with CFE panel at BBSR sub-LDC	No	1		
20.9	Stringing,Splicing,Link test & Commissioning of OPGW line	LS	1		
20.10	a)Integrated Universal Mux(UMUX ) having interface facilities for speech,data and HV line protection	SET	1		
20.11	b) Testing,Commissioning & interfacing of FOTS with existing OPTCL SCADA network	LS	1		
20.12	25 PAIR ARMoured JELLY FILLED CABLE	MTRS	1000		
20.13	10 PAIR ARMoured TELEPHONE CABLES	MTRS	1000		
20.14	4 PAIR NON ARMoured TELEPHONE CABLES	MTRS	400		
20.15	2 WIRE TELEPHONE SET	NO	10		
20.16	VRLA TYPE BATTERY 350 AH(FOR 48 V)	SET	2		
20.17	BATTERY CHARGER FOR 48 V, 75 A Float cum Boost(as recommended by the VRLA Battery manufacturer)	SET	2		
20.18	48 V DCDB	SET	1		
20	<b>SUPPLY OF STATION TRANSFORMER &amp; OTHER MATERIALS FOR MEETING THE AUXILIARY SUPPLY OF THE SUB-STATION AS PER TECHNICAL SPECIFICATION</b>				

DESCRIPTION OF ITEMS(SCHEDULE-2C-SS)		TO BE QUOTED IN INR			
Sl. No.		UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	Unit Rate	Total Price
1	2	3	4	5	6=4x5
20.1	STATION TRANSFORMER 33KV/433V,315 KVA (AS PER SPECIFICATION)	NOS	2		
20.2	33 KV AB SWITCH IN 33 KV SIDE(600AMP),HG FUSE, DP STRUCTURE(preferably by using 200X100 mm RS Joist),ANGLE FOR BRACING OF DP STRUCTURE,POWER CABLES, CHANEL, FOR ERECTION OF TRANSFORMER INCLUDING INSULATORS, CONDUCTOR, CLAMPS & CONNECTOR, JUMPERING AND OTHER ACCESSORIES FOR COMMISSIONING OF THE STN TRANSFORMER.IT INCLUDES LT OUT DOOR KIOSK MADE OUT OF 14 SWG GI MARSH-ALLING BOX OR BETTER , HAVING CABLE TERMINATING FACILITY FOR INCOMING & OUT GOING TO THE BOX. THE RATING OF THE BUS BAR, TERMINAL BOX & STUDS TO BE USED SHALL HAVE CONTINEOUS RATING OF 1000 AMP. MARSHALLING BOXES ARE TO BE INSTALLED NEAR TO THE AUXILIARY STATION TRANSFORMERS.	SETS	2		
21	SUB STATION LIGHTING (AS PER SPECIFICATION AND APPROVED DRAWINGS)(includes Switch yard,Colony street and other street area)				
21.1	<i>ERECTION OF SUB-STATION SWITCH YARD LIGHTING: It includes supply of materials for fixing of FIXTURES &amp; LAMPS (LED) of reputed make (Philips/CGL/Bajaj) with switch gear like GI Conduit etc.(Lighting fixtures are to be fixed rigidly on the Column at a suitable height so that the required lux can be maintained).</i>	LOT	1		
21.2	STREET LIGHTING, IT INCLUDES SUPPLY OF GI TUBULAR POLE, WITH LED LIGHTING FIXTURES WITH LAMPS of reputed make (Philips/CGL/Bajaj)(TO BE PROVIDED IN THE SWITCH YARD, ALONG THE ROADS (APPROACH INSIDE YARD AND OTHER ROADS).	LOT	1		

DESCRIPTION OF ITEMS(SCHEDULE-2C-SS)		TO BE QUOTED IN INR			
Sl. No.		UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	Unit Rate	Total Price
1	2	3	4	5	6=4x5
21.3	<p><b>ELECTRICAL SUPPLY TO STREET LIGHTING, COLONY QUARTERS:-</b></p> <p>&gt; 1 NO. OUTDOOR KIOSK FOR STREET LIGHTING PURPOSE HAVING 2 NOS 200 AMP SWITCH FUSE UNITS AND , 6 NOS.OUT LETS OF 32 AMP MCB FOR STREET LIGHTING. (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.)</p> <p>&gt; 1 NO. OUTDOOR KIOSK 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. PROVISION OF CABLE(2C/4C-6 SQM) FROM THE OUT DOOR KIOSK INSTALLED NEAR THE QUARTER TO THE RESPECTIVE QUARTERS UP TO THE SWITCH FUSE UNIT PROVIDED INSIDE THE QUARTERS. INDIVIDUAL CABLES FOR INDIVIDUAL QUARTERS. IT ALSO INCLUDES PROPER EARTHING OF THE QUARTER AS PER THE STANDARD PRACTICE AND SPECIFICATION.)</p> <p>&gt; 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. (LT UNDER GROUND POWER CABLES OF 4CX6/16 SQMM SHALL BE CONNECTED TO THE JUNCTION BOX.) THE JUNCTION BOX SHALL HAVE PROVISION OF FUSES, BUSES, CONNECTORS FOR CABLE IN AND OUT. THIS INCLUDES SUPPLY OF ALL MATERIALS(EXCEPT CABLES) AS PER APPROVED DRAWING AND SPECIFICATION TO COMPLETE THE STREET LIGHTING SYSTEM. PROPER EARTHING AS PER STANDARD PRACTICE FOR STRRET LIGHT POLES AND OUTDOOR KIOSKS ARE ALSO INCLUDED IN THE SCOPE OF WORKS. THE STREET LIGHT SHALL BE OF LED LAMP FITTINGS INCLUDING LAMPS.</p> <p>(* REMARKS : FOR ERECTION OF ALL THE CABLES AS INDICATED ARE COVERED IN THE CABLE ITEMS AS INDICATED ABOVE)</p>	LOT	1		
22	<p>2 TR CAPACITY 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 &amp; CONFERENCE ROOM.(SUPPLY OF CABLES ARE COVERED IN CABLE ITEMS AS INDICATED ABOVE)</p>	LOT	1		
23	<p><b>FIRE FIGHTING SYSTEM(PORTABLE /TROLLEY/ WHEEL MOUNTEDFIRE EXTINGUSHERS SETS FOR CONTROL ROOM,EQUIPMENT LIKE TRANSFORMER AND OTHER AREAS AS PER TECH SPEC(REFER TS-VOL-IIA-SCOPE OF WORKAT SL NO. 15-ANNEXURE - I)</b></p>				

Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2C-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T +1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
				Unit Rate	Total Price
1	2	3	4	5	6=4x5
23.1	FOAM TYPE-9 LTRS	NOS	4		
23.2	DRY CHEMICAL POWDER(TROLLEY MOUNTED)- 22.5 KGS	NOS	4		
23.3	DRY POWDER TYPE - 5 KGS	NOS	4		
23.4	CO <sub>2</sub> - 4.5 KGS	NOS	10		
23.5	CO <sub>2</sub> - 9 KGS	NOS	10		
23.6	CO <sub>2</sub> (TROLLY MOUNTED)- 22.5 KGS	NOS	4		
23.7	9 litre water type	Nos.	4		
23.8	4.5 kg DCP type	Nos.	4		
23.9	50 Litres Mechanical Foam type	Nos.	2		
23.10	Smoke detection system	Set	1		
23.11	Fire Alarm System	Set	1		
23.12	FIRE BUCKET (6 NOS IN EACH STAND) WITH STAND	SET	5		
24	<b>PROTECTION,CONTROL METERING, EVENT LOGGER,BUS BAR PROTN PAN AS PER TECH SPEC WITH SUB-STATION AUTOMATION IEC 61850 compliant &amp; as per technical specification.</b>				
24.1	<b>220 KV SIDE</b>				
24.1.1	SUB-STATION AUTOMATION SYSTEM (COMPRISING OF 02 Nos. FEEDER BAYS + 02 TRANSFORMER BAYS + 01 Nos. BUS COUPLER BAYS)	SET	1		
24.1.2	BCU FOR CONTROLLING AND MONITORING OF AUXILIARY SYSTEM & OTHER ACCESSORIES( COMPRISING SERVERS,ENGG STATION,WORKS STATION,UPS etc (TO BE LOCATED IN THE CENTRAL CONTROL ROOM)FOR BOTH 220 & 33 KV SIDE OF THE GIS SUB-STATION. As per Technical specification.	SET	1		
24.1.3	FEEDER PROTECTION RELAY PANEL(MAIN-I & MAIN-II PROTECTION WITH AUTO RECLOSURE )	NOS	2		
24.1.4	TRANSFORMER PROTECTION RELAY PANEL (MAIN-I & MAIN-II PROTECTION CONSIDERING BOTH HV & LV)	NOS	2		

Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2C-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
				Unit Rate	Total Price
1	2	3	4	5	6=4x5
24.1.5	BUS COUPLER PROTECTION RELAY PANEL	NOS	1		
24.1.6	BUS-BAR(DUPLICATED) PROTECTION RELAY PANEL	SET	1		
24.1.7	TIME SYNCH EQUIPMENT	NOS	1		
24.1.8	EVENT LOGGER PANEL	NOS	1		
24.2	<b>33 KV SIDE</b>				
24.2.1	SUB-STATION AUTOMATION SYSTEM (COMPRISING OF 05 Nos. FEEDER BAYS + 02 Nos. TRANSFORMER BAYS + 01 Nos. BUS COUPLER BAYS+ 01 Nos for Station transformer 2X315 KVA 33/0.43 KV ) bays	SET	1		
24.2.2	FEEDER PROTECTION RELAY PANEL	NOS	5		
24.2.3	STATION TRANSFORMER PROTECTION RELAY PANEL(220/33 KV, 40 MVA)	NOS	2		
24.2.4	BUS COUPLER PROTECTION RELAY PANEL	NOS	1		
24.2.5	TRANSFORMER PROTECTION RELAY PANEL(2X 33/0.43 KV, 315 KVA)	NOS	1		
25	<b>AC &amp; DC SYSTEM</b>				
25.1	<b>AC SYSTEM</b>				
25.1.1	MAIN AC DB,(HAVING 800 A,50KA,DRAWOUT TYPE ACB WITH 3 O/C,E/F,U/V RELAYING FACILITY INDOOR TYPE AS PER SPECIFICATION.(MAIN DB-1,MAIN DB-2 WITH B/C)	SET	1		
25.1.2	ACDB (HAVING 400A MCCB) AS PER SPECIFICATION (AC DB-1,AC DB-2 WITH B/C)	SET	1		
25.1.3	MAIN LIGHTING DISTRIBUTION BOARD (HAVING 250A MCCB AS INCOMER)AS PER SPECIFICATION (WITH DB-1,DB-2 & B/C)	SET	1		
25.1.4	INDOOR LIGHTING DISTRIBUTION BOARD AS PER SPECIFICATION. (WITH DB-1,DB-2 & B/C)	SET	1		
25.1.5	EMERGENCY LIGHTING DISTRIBUTION BOARD	SET	1		
25.1.6	INDOOR RECEPTACLE BOARD	SET	1		
25.2	<b>DC SYSTEM</b>				



Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2C-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
				Unit Rate	Total Price
1	2	3	4	5	6=4x5
25.2.1	220 V DC BOARD (HAVING 100A DC MCCB AS INCOMER, E/F (EARTH LEAKAGE), UNDER & OVER VOLTAGE AS PER SPECIFICATION (DC DB-1,DC DB-2 & B/C)	SET	1		
25.2.2	220 V DC EMERGENCY DISTRIBUTION BOARD	SET	1		
25.3	<b>BATTERY (350 AH PLANTE TYPE) for 220 V DC</b>	SET	2		
25.4	BATTERY CHARGER FOR 350 AH, 220 V DC (FLOAT & FLOAT CUM BOOST)	SET	2		
26	DISTILLED WATER PLANT of 10 L/Hr FOR BATTERY BANKS	SET	1		
27	WALKIE TALKIE SET	SET/PAIR	2		
28	PORTABLE ALUMINIUM LADDER EXTENDABLE TYPE OF ADEQUATE HEIGHT TO BE USED FOR MAINTENANCE OF EQUIPMENT INSIDE SWITCH YARD. (REFER TS-VOL-IIA-SCOPE OF WORKAT SL NO. 19)	NOS	2		
29	PEDESTAL MOUNTED WHEEL FITTED DERRICK FOR LIFTING/ LOWERING OF MATERIALS UP TO 1.5 TON CAPACITY.(REFER TS-VOL-IIA-SCOPE OF WORKAT SL NO. 20)	SET	1		
30	POWER WINCH NEAR STORE SHED FOR HANDLING MATERIALS UPTO 5 TON CAPACITY.	SET	1		
31	WATER COOLER WITH WATER PURIFIER(with ultra violet purification system of ISI mark) SYSTEM	NOS	1		
32	MAINTENANCE TESTING EQUIPMENT (REFER TS-VOL-IIA-16. <b>Maintenance &amp; Testing Equipment (ANNEXURE-II)</b> INDICATED IN -SCHEDULE OF REQUIREMENTS OF MAINTENANCE EQUIPMENT) & AS INDICATED IN THE TECHNICAL SPECIFICATION FOR GIS SYSTEM TS-E30	LOT	1		
33	OTHER TOOLS AND PLANTS (T&P's) REQUIREMENT (REFER TS-VOL-II AS INDICATED IN SCHEDULE OF REQUIREMENTS OTHER T&P's) & AS INDICATED IN THE TECHNICAL SPECIFICATION FOR GIS SYSTEM TS-E30	LOT	1		

Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2C-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
				Unit Rate	Total Price
1	2	3	4	5	6=4x5
34	OFFICE FURNITURE (REFER TS-VOL-IIA-SCOPE OF WORKAT SL NO. 18 ANNEXURE - IV ,INDICATED IN SCHEDULE OF REQUIREMENTS OFFICE FURNITURE) & PLACING IN CONTROL ROOM,CONFERENCE ROOM,OFFICE ROOMS,LIBRARY,TESTING LAB,etc.	LOT	1		
35	EOT Crane for 220 kV GIS Hall (5T Capacity)	NOS	1		
36	BEST QUALITY & APPROVED MAKE RUBBER MAT TO BE KEPT INFRONT & BACK SIDE (where doors of the panels are provided) OF ALL PANELS,BOARDS ETC.	LOT	1		
37	ERECTION OF OPGW EQUIPMENT INCLUDING DISMANTLING FROM EXISTING SUBSTATION ( AS PER THE DETAILS SLD GIVEN IN TS) AND TRANSPORTATION AS REQUIRED	LOT	1		

DESCRIPTION OF ITEMS(SCHEDULE-2C-SS)		TO BE QUOTED IN INR			
Sl. No.		UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	Unit Rate	Total Price
1	2	3	4	5	6=4x5
38	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, EARTHING 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(Transformer and its accessories,RTCC Panel etc),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 ERECTION INCLUDING T&P's. <b>1. 220/33 KV 40 MVA TRANSFORMER</b>	NOS	2		
<b>TOTAL OF SUBSTATION (Electrical Work) (PART-I)</b>					
<b>B</b>	<b>CIVIL WORKS</b>				

Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2C-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
				Unit Rate	Total Price
1	2	3	4	5	6=4x5
1	<i>Foundations : Design, engineering, supply of all labour, material (Cement-OPC-43 Grade,MS Rod(FE-500), coarse and fine aggregates(Sand and Metal Chips) etc) for construction of RCC ( 1:1.5:3) &amp; PCC (1:3:6), RCC footings of any depth, pedestal and piling as per requirement including soil investigation, excavation,concreting, shuttering, grouting, underpinning and back filling of foundations etc complete for the following switch yard gantry/ portal structures and equipment support &amp; others as per the technical specification and approved drawings.(RCC 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.</i>				
1.1	Switchyard gantry/portal structure foundations.				
1.1.1	RP1				
1.1.2	RP2				
1.1.3	Any other type column				
1.2	Equipment foundations :				
1.2.1	245 KV,4400pF,3CORE,SINGLE PHASE CAPACITOR VOLTAGE TRANSFORMER				
1.2.2	216 KV, METAL OXIDE SURGE ARRESTOR,10 KA, class III				
1.2.3	245 KV solid core Bus Post Insulators				
1.2.4	30 KV, METAL OXIDE SURGE ARRESTOR, 10kA, Class II				
1.2.5	36 KV solid core Bus Post Insulators				
1.2.6	NCT FOR TRANSFORMER PROTECTION RATING 36 KV,(1200-600-300/1-1 A, HAVING TWO PS CLCORE (IN EACH POWER TRANSFORMER 1 No. NCT IN 220 KV SIDE )				
1.2.7	NCT FOR TRANSFORMER PROTECTION RATING 36 KV,(800-400-200/1-1 A, HAVING TWO PS CLCORE ( IN EACH POWER TRANSFORMER 33 KV SIDE-1 NO)				

Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2C-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr.+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr.+2T +1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
				Unit Rate	Total Price
1	2	3	4	5	6=4x5
1.2.8	SWITCH YARD AC CONSOLE FOR LIGHTING (01 nos on 220 kV bay & 01 Nos 33 kv Bay )				
1.2.9	SWITCH YARD RECEPTACLE BOARD FOR TFR OIL FILTERATION (01 no. near 220/33 KV POWER Tfr)				
1.2.10	SWITCH YARD RECEPTACLE BOARD FOR WELDING & OTHER EMERGENCY (01 nos in 220 kV bay& 33 kv Bay )				
1.2.11	CVT OUT DOOR CONSOLE BOXES				
1.3	EXCAVATION FOR PREPARATION OF FOUNDATION WORK FOR THE ABOVE SWITCHYARD COLUMN,EQUIPMENT etc.: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.				
1.3.1	Norma Soil(SOFT/LOOSE)	Cum	200		
1.3.2	Hard Soil	Cum	100		
1.3.3	Soft Rock	Cum	100		
1.3.4	Hard Rock required blasting	Cum	75		
1.4	<i>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 column and equipment foundation as blind layer inclusive of labour charges for concrete mixing &amp; curing. This includes supply of all labourers, T&amp;P and dewatering wherever required as per Technical specification and instruction of Engineer In charge.</i>	Cum	75		

Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2C-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
				Unit Rate	Total Price
1	2	3	4	5	6=4x5
1.5	<i>Open cast foundation for the above column/equipment/marshalling box foundations with RCC: 1:1.5:3 (Grade M-20),including supply of Labour all materials like MS Rod -FE500(Supply,Cutting,Bending,Binding (including supply of binding wire) and placing in position of steel rods of different size as per design in the foundation pit as required for the above foundations),Cement, coarse and fine aggregates,shuttering,proper curing of the foundations/concrete and T&amp;P in line with the Specification and as per direction of Engineer in Charge.</i>	Cum	<b>400</b>		

DESCRIPTION OF ITEMS(SCHEDULE-2C-SS)		TO BE QUOTED IN INR			
Sl. No.		UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	Unit Rate	Total Price
1	2	3	4	5	6=4x5
2	<p>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.</p> <p>(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.</p> <p>(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 &amp; curing. This includes supply of all labourers, T&amp;P and dewatering wherever required as per Technical specification and instruction of Engineer In charge.</p> <p>(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&amp;P in line with the Specification and as per direction of Engineer in Charge.</p> <p>(4) Fly ash Brickwork with fly ash Fly ash Brick, plastering (!:6 Ratio) &amp; curing, wherever required including the supply of labour, material, cement, etc.</p> <p>(5) Supply, fabrication &amp; 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.</p> <p>(6) Precast of RCC covers (1:1.5:3) and its fixing on the cable trench as per spec and instruction of Engg. In Charge.</p> <p>(7) CABLE TRENCHES INSIDE THE CONTROL ROOM SHALL BE COVERED WITH M.S CHEQUERED PLATE (Duly painted as per instruction of Engg in charge) INCLUDING STANDARD SUPPORT STAND (HD Galvanised (M.S JOIST, CHANNEL, ANGLE)).</p>				
2.1	<b>Cable trench with covers</b>				
2.1.1	Section 1-1	Mtrs	200		
2.1.2	Section 2-2	Mtrs	200		
2.1.3	Section 3-3	Mtrs	100		
2.1.4	Section 4-4	Mtrs	100		
2.2	<b>Rain water harvesting</b> system as per Technical specification and approval of drawing and as per the direction of the Engineer in charge.	LOT	1		

Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2C-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
				Unit Rate	Total Price
1	2	3	4	5	6=4x5
2.3	<b>Cable trench crossing:</b> 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.				
2.3.1	Road crossing for				
2.3.1.1	Section 1-1	Lot	1		
2.3.1.2	Section 2- 2	Lot	1		
2.3.1.3	Section 3-3	Lot	1		
3	<p><b>Switch yard buildings:</b> Design, engineering and construction of switch yard buildings including the piling where required, the cost of material, supply of labour, 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.</p> <p><b>CONTROL ROOM BUILDING:(one building)</b></p> <p>A) Area of the Ground floor with portico at front side, stair case to first floor and top of the building , and a ramp(for 220/132 KV S/S) at the backside for easy transportation of panels to the control room to be located at the first floor. The details of rooms to be provided are as per the Tech spec. B)</p> <p>Area of the first floor. The details of rooms to be provided are as per the Tech spec. &gt;The plinth area for the control room building shall be as below:- Ground floor: 38mtrX11mtr Ground floor portico: 5mtrX7mtr First floor: 12 mtr X 11 mtr</p>				
3.1	RCC volume including MS rods(including column ,Beams and roofs etc) as per technical spec & approved drawings.	Lot	1		
3.2	Fly ash Brick masonry by using fly ash Fly ash Brick work in cement sand mortar 1: 6 with Fly ash Bricks of class designation 75 as per technical spec & approved drawings.	Lot	1		



Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2C-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T +1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
				Unit Rate	Total Price
1	2	3	4	5	6=4x5
3.3	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		
3.4	External and internal wall and 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		
3.5	Provision of ceiling in the control room area as per specification mentioned in the civil section & approved drawings.	Lot	1		
3.6	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		
3.7	Provision of PHD and other fittings 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.	Lot	1		
3.8	Internal concealed wiring,fixing of lighting fixtures ,fans and regulators ,exhaust fan,D.C emergency lighting as per spec & approved drawing.	Lot	1		
3.9	Provision of smoke and fire detection system of the building.	Lot	1		
4	<b>Roads:</b> Design, construction of roads and walkways/ shoulders within sub-station( <b>Switch yard area,colony area,approach road,control room building area, main gate to the switch yard gate etc</b> ) 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 Engineer In charge. Provision of drains on both the side of the roads for easy discharge of rain water.				

Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2C-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
				Unit Rate	Total Price
1	2	3	4	5	6=4x5
4.1	3.75 mtrs Concrete road with shoulder at both the side as per technical specification indicated in the civil section.	Mtrs	350		
4.2	7 mtrs wide Concrete roads with shoulder as per specification indicated in the civil section. 7 Mtrs wide road inside the switchyard to be connected to switch yard main gate.	Mtrs	50		
4.3	7 mtrs wide Bituminus roads with shoulder as per specification indicated in the civil section.( for main and approach roads).	Mtrs	150		
5	<b>Drainage system:Collection of rainfall data, Design, construction of storm water drainage scheme, road-culverts,Shall have drain on both side of the road and drains crossing cable trenches 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 direction of Engineer In charge. All the switch yard bays , roads water drainage shall be connected to the main surface drain. As per approved drawing and specification.</b>				
5.1	Storm water drain	Lots	1		
5.2	Road-culverts, drain crossings	Lots	1		
5.3	Cable trench crossing	Lots	1		

Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2C-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
				Unit Rate	Total Price
1	2	3	4	5	6=4x5
6	<p>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 4.2). 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.</p> <p>1. 220/33 KV, 40 MVA (2 Nos)</p>				
6.1	<p>40 MVA 220/33 kV transformers</p> <p>a) Overall dimension of transformer(appox) Length:7200 mmX Width 6000 mmX Height 6200 mm</p> <p>b) Total weight with oil and tank: 97.5 MT (appox)</p>	Nos	2		
6.2	<p><b>OIL SUMP PIT:</b>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.</p> <p>&gt;Oil capacity of each Transformer in ltrs appox.</p> <p>a) 40 MVA,220/33 KV: 60000 ltrs.</p>	Nos	1		

DESCRIPTION OF ITEMS(SCHEDULE-2C-SS)		TO BE QUOTED IN INR			
Sl. No.		UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	Unit Rate	Total Price
1	2	3	4	5	6=4x5
7	<p><b>Substation earth mat</b> Design, engineering, supply(except the GI Flats, only erection) inclusive of corrosion protection measures if any,laying of earth mat conductors of Hot dip galvanized flats of size 75X10mm to the approval of Engineer in charge, excavation, welding/jointing of ground conductors along with risers (a) upto Finished level from the mat size 75X10 mm GI flats &amp; b) from the finished ground level to the top of the structure and equipment shall be with 50X6 mm GI Flats, with back filling and good compaction,grounding driven rods(40 mm MS solid rod for untreated earth pit ,perforated 50 mm Heavy duty GI pipes for treated earth pits(with details of treatment as per IS). The spacing between the earth conductor not more than 5 mtrs(both way) and to be buried at depth of 700mm from the finished ground level. For provision of treated earth pit and untreated earth pit, refer the specification for designing. Provision of water taps inside the switch yard areas and peripheral treated and un-treated earth pit are required to be provided for watering the treated earth pits. The no. of treated and un treated earth pits are to be done as per the practice and as indicated in the drawing for different equipments. This is as per approved drawing and specification.</p>	Lots	1		
8	<p><b>PCC before site surfacing</b> :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. This also includes excavation in all types of soil or rocks,back-filling,and disposal of excess earth as per the direction of <b>Engineer in charge</b> and approved drawing. (Switch yard area)</p>	Lots	1		
9	<p><b>Metal Spreading:</b> 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.</p>	Lots	1		

DESCRIPTION OF ITEMS(SCHEDULE-2C-SS)		TO BE QUOTED IN INR			
Sl. No.		UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	Unit Rate	Total Price
1	2	3	4	5	6=4x5
10	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 LENGTH OF THE BOUNDARY WALL) and approved drawing. Appox.				
10.1	<b>Appox length of the boundary walls in mtrs</b>	RM	800		
11	<b>LEVELLING OF S/S AREA:</b> Providing, neatly dressing up and leveling of substation area including switch yard 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.				
11.1	<b>Contour survey of the entire sub-station area including Supply of all labour &amp; T&amp;P by contractor.</b>	SQM	10000		
11.2	<b>Cutting of sub-station area of the as per the direction of Engineer in Charge.</b>	CUM	5000		
11.3	<b>Filling with borrowed earth beyond 30 mtrs lead as per the direction of Engineer in Charge.</b>	CUM	5000		
12	<b>PROVISION OF PLANTATIONS:</b> Provision of plantation of 100 nos fruit bearing plants and 100 nos decorative plants at different locations, a garden in front of the control room including supply of plants,soil treatment and its plantation including materials,labour and T&P.As per the instruction of Engineer in Charge and specification.	Lot	1		

Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2C-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
				Unit Rate	Total Price
1	2	3	4	5	6=4x5
13	<b>STONE PITCHING &amp; TOE WALL:</b> 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.				
13.1	Excavation in Soft & Loose Soil	Cum	800		
13.2	P.C.C (1:3:6): Lean Concrete Grade M-10	Cum	90		
13.3	RR Masonry (1:5)	Cum	500		
13.4	P.C.C (1:2:4): Lean Concrete Grade M-15	Cum	8		
14	<b>SWITCH YARD FENCING:</b> 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 Fly ash 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.	Lot	1		
15	<b>Fire wall:</b> 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 Fly ash 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 Engineer in charge.	LOT	1		

Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2C-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
				Unit Rate	Total Price
1	2	3	4	5	6=4x5
16	<b>Any other civil work</b> 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. )				
16.1	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		
16.2	PCC 1: 3 : 6	Cu.m.	1		
16.3	RCC M 15	Cu.m.	1		
16.4	RCC M 20	Cu.m.	1		
16.5	Fly ash Brick masonry work using fly ash Fly ash Brick in cement sand mortar 1: 6 with Fly ash Bricks of class designation 75.	Cu.m.	1		
16.6	12 mm thick plaster in cement sand mortar ( 1: 6 ).	Sq.m.	1		
16.7	Supply of MS Rod (FE 500),Cutting,bending and fixing of reinforcement <b>including labour</b>	M.T.	1		

DESCRIPTION OF ITEMS(SCHEDULE-2C-SS)		TO BE QUOTED IN INR			
Sl. No.		UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	Unit Rate	Total Price
1	2	3	4	5	6=4x5
17	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, Fly ash 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, Fly ash 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,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. (RCC column structure frame and the Fly ash Bricks to be used shall be fly ash Fly ash Brick, all the door and window frame & panels shall be aluminium with adequate size as indicated in the TS and also as per the National Building Code adopted.				
17.1	"D" type Quarter As per technical specification	SQ MTRS	120		
17.2	"E" type Quarter As per technical specification (one no. two storied flat. Each flat shall be with 2 nos quarters on ground floor & 2 Nos quarters on 1st floor). (There shall be 4 Nos quarters to be accommodated in one flat as E1,E2,E3 & E4)				
17.2.1	"E" type Quarter As per technical specification: 2 nos quarters on ground floor & the quarters to be accommodated in ground floor E1 & E2 (Each quarter size plinth area shall be 73 Sq Mtrs(appox)	SQ MTRS	146		
17.2.2	"E" type Quarter As per technical specification: 2 nos quarters on first floor & the quarters to be accommodated in ground floor E3 & E4(Each quarter size shall be 73 Sq Mtrs(appox)	SQ MTRS	146		



Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2C-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
				Unit Rate	Total Price
1	2	3	4	5	6=4x5
18	<b>STATION TRANSFORMER:</b> Design, engineering, procurement of labour, material including all associated works for construction of foundation and DP structure for station transformers 33/0.415 KV,315 KVA STN TRANSFORMER as per approved drawing and specification.{33 KV AB Switch (600A),HG Fuse,DP Structure & Angles (duly painted),Chanel,Plinth for erection of the transformer, including fixing and laying of (insulators,surge arresters, XLPE armoured power cables 3.5 core 300 sq mm,LT out door kiosk near transformers and other accessories for complete installation of transformer as per standard) and instruction of Engineer In charge. As per the specification and approved drawing. (* REMARKS : FOR SUPPLY OF ALL THE CABLES ,AB Switch etc AS INDICATED ARE COVERED IN THE supply)}	Nos	2		
19	<b>MAIN &amp; SWITCH YARD GATES:</b> Design, engineering, procurement of labour, material including all associated works for construction and fixing of of a main gate and one no. switch yard gates with men gates as per specification and approved drawing. This also includes excavation in all types of soil or rocks,back filling,and disposal of excess earth as per the direction of Engineer In charge. Provision of gate lights (Post top lantern type) on each pillar of the gate. It includes supply & fixing of light fixtures including LED Gate lamp, LV XLPE cables, switchgear etc required to complete works as per specification and approved drawings.	Lots	2		
20	<b>SECURITY SHED &amp; CUM VISITOR ROOM:</b> Design, engineering, procurement of labour, material including all associated works for construction of Security shed near main gate,watch tower shed at the corners of switch yard as per the approved drawing and instruction of Engineer in charge. This also includes excavation in all types of soil or rocks,back filling,and disposal of excess earth as per the direction of Engineer In charge. Internal electrification including supply of lighting fixtures,fan with regulators and provision of incoming AC supply from the main ACDB/outdoor kiosks installed for street light or colony quarters. Also includes painting of the building (in side and out side) as per recommended for colony building in the specification.				

Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2C-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
				Unit Rate	Total Price
1	2	3	4	5	6=4x5
21	<b>SECURITY SHED:</b> The size of the security shed shall be 3.5 mtrsX5mtrs and height of 3.5mtrs RCC roof,Fly ash Brick masonry works,plastering and painting and fixing of MS doors and windows.	Nos	1		
22	<b>BORE WELL &amp; PUMP HOUSE:</b> Design, engineering, procurement of labour, material including all associated works for construction of two nos. bore wells for control room building including switch yard and colony quarters as per specification and approved drawing and instruction of Engineer in charge. This includes supply and fixing and commissioning of two nos 5 HP submersible water pump with starter and other protection. Construction of two nos pump house at ideal location for fixing of the electrical starter units. The pump house be of RCC roof and having walls of Fly ash Brick masonry and plastering and painting with MS door having locking arrangement. 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 Supply & laying of LV XLPE 3.5CX 35 sq mm cable from ACDB to pump house, control gear & earthing of the system etc to complete the scheme as per approved drawing & instruction of Engineer-in charge.	LOT	1		
23	<b>COLOUR CODING, BAY MARKING Etc:</b> Design, engineering, procurement of labour, material including all associated works for the followings. This should be as per direction of site In charge. a)Color coding (red,Yellow & Blue) for equipments,Bus gantry &column of entire switch yard. Good quality weather proof sticker may be used for identification. b)Each bay should be identified with the help of bay marker sign board, suitably grouted. MS sign board with stand to be installed. Proper painting and lettering to be done of the entire switch yard area.	Lot	1		

DESCRIPTION OF ITEMS(SCHEDULE-2C-SS)		TO BE QUOTED IN INR			
Sl. No.		UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	Unit Rate	Total Price
1	2	3	4	5	6=4x5
24	STORE SHED:Design, engineering, procurement of labour, material including all associated works for construction of store shed as per specification and approved drawing. This also includes excavation in all types of soil or rocks,back filling,and disposal of excess earth as per the specification,approved drawing and direction of Engineer In charge. One no store shed of floor size 10X10 mtr having Fly ash Brick walls and plastering with RCC roof. The flooring shall be of 75 mm thickness PCC (mix ratio1:2:4) over RR masonry works (as per standard practice of flooring). Provision of adequate nos of MS racks (proper paintings also to be done as per the direction of site in charge) for keeping the spare materials. The height of the shed shall be 4mtrs above the plinth.	Lot	1		
25	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 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		

Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2C-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T+1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
				Unit Rate	Total Price
1	2	3	4	5	6=4x5
26	<p><b>Switch yard buildings for GIS Sub-station:</b> Design, engineering and construction of switch yard buildings including the piling where required, the cost of material, supply of labour, cement, reinforcement- steel(MS ROD FE 500), 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.</p> <p>GIS <b>BUILDING: 1 no for 220 kv side &amp; 1 no for 33 kv side. The GIS building shall be as per the standard practice adopted for GIS sub-station. Guide line as stipulated for construction of GIS building shall be strictly adopted.</b></p> <p><b>(Approximate Size of 220KV side GIS Building - 33 Meters X 11 meters)</b></p> <p>Ground floor with portico at front side, stair case to the top of the building. The GIS BUILDING IS REQUIRED TO accommodate THE GAS INSULATED 220 KV PROPOSED BAYS &amp; FUTURE EXPANSION OF 220 KV BAYS AS SUGGESTED IN THE SCOPE OF WORK AND THE LCC &amp; SUB-STATION AUTOMATION BAY UNITS &amp; EOT CRANE. RCC COLUMN STRUCTURE FRAME&amp; WITH PROVISION OF EOT CRANE(5 TON CAPACITY MINIMUM) [Design, engineering, supply of labour, material etc. for construction of GIS block building including crane hoisting system (EOT), equipment foundations, electrification including wiring, receptacle, modular switches, LED light fittings, bulkhead lights including fixtures, ceiling/exhaust fans etc.)</p>				
26.1	<b>220 KV SIDE</b>				
26.1.1	RCC volume including MS rods(including column ,Beams and roofs etc) as per technical spec & approved drawings.	Lot	1		
26.1.2	Fly ash Brick masonry work in cement sand mortar 1: 6 with Fly ash Bricks of class designation 75 as per technical spec & approved drawings.	Lot	1		
26.1.3	PCC Flooring with ratio 1:2:4, plastering of the floor by using cement and sand ratio 1:4 & provision of PVC mat over the finished floor as per technical spec & approved drawings.	Lot	1		
26.1.4	External and internal wall and ceiling paintings as per technical spec & approved drawings.	Lot	1		
26.1.5	Provision of rails & other arrangement including all type of Civil works for EOT crane. This is as per the standard practice adopted in GIS sub-station and as directed by the Engineer in Charge.	Lot	1		

Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2C-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T +1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
				Unit Rate	Total Price
1	2	3	4	5	6=4x5
26.1.6	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		
26.1.7	Provision of PHD and other fittings of reputed make,provision of rain water discharge pipes at different locations and etc as per requirement and approved drawing. There shall be soak pit of required capacity 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.	Lot	1		
26.1.8	Internal concealed wiring,fixing of lighting fixtures ,fans and regulators ,exhaust fan,D.C emergency lighting as per spec & approved drawing.	Lot	1		
26.1.9	Provision of smoke and fire detection system of the building.	Lot	1		
26.1.10	Ventilation and Heating system	Lot	1		
26.2	<b>(Approximate Size of 33KV side GIS Building – 12 Meters X 5 meters)</b> Ground floor with portico at front side, stair case to the top of the building. The GIS BUILDING IS REQUIRED TO accommodate THE GAS INSULATED 33 KV PROPOSED BAYS& FUTURE EXPANSION OF 33 KV BAYS AS SUGGESTED IN THE SCOPE OF WORK AND THE LCC & SUB-STATION AUTOMATION BAY UNITS. RCC COLUMN STRUCTURE FRAME OF THE BUILDING [Design, engineering, supply of labour, material etc. for construction of GIS block building , equipment foundations, electrification including wiring, receptacle, modular switches, LED light fittings, bulkhead lights including fixtures, ceiling/exhaust fans etc.)				
	<b>33 KV SIDE</b>				
26.2.1	RCC volume including MS rods(including column ,Beams and roofs etc) as per technical spec & approved drawings.	Lot	1		
26.2.2	Fly ash Brick masonry work in cement sand mortar 1: 6 with Fly ash Bricks of class designation 75 as per technical spec & approved drawings.	Lot	1		

Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2C-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T +1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
				Unit Rate	Total Price
1	2	3	4	5	6=4x5
26.2.3	PCC Flooring with ratio 1:2:4, plastering of the floor by using cement and sand ratio 1:4 & provision of PVC mat over the finished floor as per technical spec & approved drawings.	Lot	1		
26.2.4	External and internal wall and ceiling paintings as per technical spec & approved drawings.	Lot	1		
26.2.5	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		
26.2.6	Provision of PHD and other fittings of reputed make,provision of rain water discharge pipes at different locations and etc as per requirement and approved drawing. There shall be soak pit of required capacity 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.	Lot	1		
26.2.7	Internal concealed wiring,fixing of lighting fixtures ,fans and regulators ,exhaust fan,D.C emergency lighting as per spec & approved drawing.	Lot	1		
26.2.8	Provision of smoke and fire detection system of the building.	Lot	1		
26.2.9	Ventilation and Heating system	Lot	1		
27	<b>PROVISION OF RAMP:</b> 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		
28	<b>AMC FOR 3 YEARS</b>				

Sl. No.	DESCRIPTION OF ITEMS(SCHEDULE-2C-SS)	UNITS	TOTAL QUANTITY for Construction of 220/33 KV GIS Substation at INFOCITY-II [05 Nos (2Fdr+2AT+1 B/C) 220 KV Bays & 10 Nos (7Fdr+2T +1B/C) 33 KV Bays]	TO BE QUOTED IN INR	
				Unit Rate	Total Price
1	2	3	4	5	6=4x5
28.1	Lump sump charges for Operation & Maintenance of GIS substation for 3 years beyond the Guarantee period (Bidder to keep the trained personal (trained & certified by GIS supplier to handle the operation & maintenance of 220/33 KV GIS S/S) at substation for the period of 3 years, round the clock. Bidder to keep necessary spares & consumable for carrying out O&M and a detail list to be furnished along with the bid (BOTH IN NON PRICE SCHEDULE IN PART-I & IN PRICE SCHEDULE IN PART-II). REMARKS:- THE AMC FOR 3 YRS SHALL COMMENCE JUST AFTER THE GUARANTEE PERIOD OF SUBSTATION AS STIPULATED IN THE TENDER SPECIFICATION.	LS	3		
TOTAL OF SUBSTATION (Civil Work) (PART-I)					
TOTAL OF ERECTION SUBSTATION (Electrical Work) (PART-I) & (Civil Work) (PART-I)-2C (ERECTION)					

**NOTE:**

- 1 Before filling up rate/amount etc. in the schedules bidders are requested to read carefully the instruction given in Vol-I of Bidding Document.
- 2 Bidders are required to fill up amount in all column except shaded portion.  
Bidders are requested not to leave any column blank. If any column is left blank it shall be considered that amount against those items are included in any other item and the total amount for that item shall be calculated as free of cost (Zero value). No rate shall be furnished/obtained after bid opening (Ref clause no 33.4.1 of INB vol-I) .
- 4 Kindly enclose soft copy of the duly filled schedule in a CD with the priced copy of Bid.
- 5 Bidder has to quote rates excluding service tax (if any), service tax shall be paid/reimbursed as per conditions of Bid Document.

Date :  
Place :

(Signature) .....  
( Name) .....  
( Designation ) .....  
(Common Seal) .....

**ORISSA POWER TRANSMISSION CORPORATION LIMITED**

**CONSTRUCTION OF 2X40 MVA (220/33 KV) 220/33 KV GAS INSULATED (SF6) SUB-STATION AT INFOCITY-II ,BHUBANESWAR & ASSOCIATED 220 KV DC LILO LINE ARRANGEMENT ON THE EXISTING NARENDRAPUR-MENDHASAL DC LINE ON TURNKEY BASIS**

BID DOCUMENT No.:Sr. G.M- CPC- TENDER- GIS INFOCITY-II- PACKAGE- 23 / 2012-13

(Equipment/Materials Price Break-up of Ex-works Prices against Package-GIS INFOCITY-II)

**PART-II SCHEDULE-2A (FOR LINE)**

S. No.	DESCRIPTION OF ITEMS			TO BE QUOTED IN INR					
S. No.	SUPPLY OF FOLLOWING EQUIPMENTS ALONG WITH HOT DIP GALVANISED STRUCTURE (As per Technical Specification)	UNITS	Construction of 220 KV D/C Line on DC Tower to the proposed GIS INFOCITY-II by making LILO on Circuit - I/II of existing DC ckt of 220 KV NARENDRAPUR-MENDHASAL Near MENDHASAL.(Line Length :02 Kms.)	Unit Ex-Works Price	Total Ex-Works Price	Mode of Transaction (Direct or Bought-out item)	Total Taxes & Duties applicable for transaction between bidder and OPTCL and not included in the price at Column(6) [For bought-out items, taxes & duties excluding Octroi/Entry Tax are invariably included in the price quoted at column(6)]		
							Excise Duty	VAT/Sales Tax	Other Levies (if any)
1	2	3	4	5	6=4X5	7	8	9	10
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 above type 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	OA TYPE (SUSPENSION ) TOWERS ( Nominal unit Weight 4.351 MT)	Nos.	2						
1.2	OC TYPE (60 deg ANGLE ) TOWERS ( Nominal unit Weight 9.839 MT)	Nos.	3						
1.3	+3 EXTENSION ( Nominal unit Weight 1.474 MT)	Nos.	1						
1.4	TEMPLATES								
1.4.1	OA ( Nominal unit Weight 0.597 MT)	Nos.	1						
1.4.3	OC ( Nominal unit Weight 1.172 MT)	Nos.	1						
1.5	<b>TOTAL WEIGHT OF THE STRUCTURE (including stubs,Foundation Bolts Templates etc)</b>	MT	<b>40</b>						
1.6	<b>Weight of G.I Nuts and Bolts</b>	MT	<b>1.6</b>						



S. No.	DESCRIPTION OF ITEMS			TO BE QUOTED IN INR					
S. No.	SUPPLY OF FOLLOWING EQUIPMENTS ALONG WITH HOT DIP GALVANISED STRUCTURE (As per Technical Specification)	UNITS	Construction of 220 KV D/C Line on DC Tower to the proposed GIS INFOCITY-II by making LILO on Circuit - I/II of existing DC ckt of 220 KV NARENDRAPUR-MENDHASAL Near MENDHASAL.(Line Length :02 Kms.)	Unit Ex-Works Price	Total Ex-Works Price	Mode of Transaction (Direct or Bought-out item)	Total Taxes & Duties applicable for transaction between bidder and OPTCL and not included in the price at Column(6) [For bought-out items, taxes & duties excluding Octroi/Entry Tax are invariably included in the price quoted at column(6)]		
							Excise Duty	VAT/Sales Tax	Other Levies (if any)
1	2	3	4	5	6=4X5	7	8	9	10
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.	5						
2.2	DANGER BOARD	Nos.	5						
2.3	NUMBER PLATE	Nos.	5						
2.4	PHASE PLATE	Nos.	30						
2.5	ANTICLIMBING DEVICE	Nos.	5						
2.6	CIRCUIT PLATE	Nos.	10						
3.0	Supply of POWER CONDUCTORS in the proposed 220kV lines with 1.5% provision for sag and wastage as per the technical specification and as per the instruction of the engineer in charge.								
3.1	ACSR Zebra (54/7/3.18mm)	Kms.	9.5						
4.0	POWER CONDUCTOR ACESSORIES								
4.1	For ACSR ZEBRA								
4.1.1	VIBRATION DAMPER	Nos.	72						
4.1.2	MID SPAN JOINT	Nos.	10						
4.1.4	Repair sleeve	Nos.	5						
5.0	Supply of the following Antifog type disc insulators as per the technical specification and as per the instruction of the Engineer in charge.								
5.1	120KN Antifog Insulator (taking 5% extra towards wastage)	Nos.	310						
5.2	160KN Antifog Insulator (taking 5% extra towards wastage)	Nos.	662						
6.0	Supply of the following hard ware fittings suitable for following conductors as per the technical specification.								

S. No.	DESCRIPTION OF ITEMS			TO BE QUOTED IN INR					
S. No.	SUPPLY OF FOLLOWING EQUIPMENTS ALONG WITH HOT DIP GALVANISED STRUCTURE (As per Technical Specification)	UNITS	Construction of 220 KV D/C Line on DC Tower to the proposed GIS INFOCITY-II by making LIL0 on Circuit - I/II of existing DC ckt of 220 KV NARENDRAPUR-MENDHASAL Near MENDHASAL.(Line Length :02 Kms.)	Unit Ex-Works Price	Total Ex-Works Price	Mode of Transaction (Direct or Bought-out item)	Total Taxes & Duties applicable for transaction between bidder and OPTCL and not included in the price at Column(6) [For bought-out items, taxes & duties excluding Octroi/Entry Tax are invariably included in the price quoted at column(6)]		
1	2	3	4	5	6=4X5	7	Excise Duty	VAT/Sales Tax	Other Levies (if any)
6.1	For ACSR ZEBRA								
6.1.1	Single suspension Hard wares fittings.(AGS type) suitable for 120 KN Antifog Insulator.	Nos.	21						
6.1.2	Single tension Hard wares fittings. suitable for 160 KN Antifog Insulator.	Nos.	21						
<b>TOTAL OF LINE (PART-II)-2A (SUPPLY)</b>									

Note:

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- 3 Bidders are requested not to leave any column blank. If any column is left blank it shall be considered that amount against those items are included in any other item and the total amount for that item shall be calculated as free of cost (Zero value). No rate shall be furnished/obtained after bid opening (Ref clause no 33.4.1 of INB vol-I)
- 4 Kindly enclose soft copy of the duly filled schedule in a CD with the priced copy of Bid.
- 5 In mode of transaction column please indicate Direct/Bought-Out. For Taxes & Duties on Direct/Bought-out items ref clause 6.0 of SCC (Vol-IA)

Date :

( Name) .....

Place :

( Designation ) .....

(Common Seal) .....

**ORISSA POWER TRANSMISSION CORPORATION LIMITED**

**CONSTRUCTION OF 2X40 MVA (220/33 KV) 220/33 KV GAS INSULATED (SF6) SUB-STATION AT INFOCITY-II ,BHUBANESWAR & ASSOCIATED  
220 KV DC LILO LINE ARRANGEMENT ON THE EXISTING NARENDRAPUR-MENDHASAL DC LINE ON TURNKEY BASIS**

**BID DOCUMENT No.:Sr. G.M- CPC- TENDER- GIS INFOCITY-II- PACKAGE- 23 / 2012-13**

**(Equipment/Materials F&I Price against Package GIS INFOCITY-II)**

**PART-II, SCHEDULE-2B (FOR LINE)**

Sl. No.	DESCRIPTION OF ITEMS	LINE		TO BE QUOTED IN INR	
	Freight and Insurance of supply OF FOLLOWING EQUIPMENTS ALONG WITH HOT DIP GALVANISED STRUCTURE (As per Technical Specification)	UNITS	Construction of 220 KV D/C Line on DC Tower to the proposed GIS INFOCITY-II by making LILO on Circuit - I/II of existing DC ckt of 220 KV NARENDRAPUR-MENDHASAL Near MENDHASAL.(Line Length :02 Kms.)	Unit F&I Charges	Total F&I Charges
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6=4X5</b>
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 above type 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	OA TYPE (SUSPENSION ) TOWERS ( Nominal unit Weight 4.351 MT)	Nos.	2		
1.2	OC TYPE (60 deg ANGLE ) TOWERS ( Nominal unit Weight 9.839 MT)	Nos.	3		
1.3	+3 EXTENSION ( Nominal unit Weight 1.474 MT)	Nos.	1		
1.4	TEMPLATES				
1.4.1	OA ( Nominal unit Weight 0.597 MT)	Nos.	1		
1.4.3	OC ( Nominal unit Weight 1.172 MT)	Nos.	1		
1.5	<b>TOTAL WEIGHT OF THE STRUCTURE (including stubs,Foundation Bolts Templates etc)</b>	MT	<b>40</b>		
1.6	<b>Weight of G.I Nuts and Bolts</b>	MT	<b>1.6</b>		

Sl. No.	DESCRIPTION OF ITEMS	LINE		TO BE QUOTED IN INR	
1	2	3	4	5	6=4X5
	<b>Freight and Insurance of supply OF FOLLOWING EQUIPMENTS ALONG WITH HOT DIP GALVANISED STRUCTURE (As per Technical Specification)</b>	<b>UNITS</b>	<b>Construction of 220 KV D/C Line on DC Tower to the proposed GIS INFOCITY-II by making LILO on Circuit - I/II of existing DC ckt of 220 KV NARENDRAPUR-MENDHASAL Near MENDHASAL.(Line Length :02 Kms.)</b>	<b>Unit F&amp;I Charges</b>	<b>Total F&amp;I Charges</b>
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.	5		
2.2	DANGER BOARD	Nos.	5		
2.3	NUMBER PLATE	Nos.	5		
2.4	PHASE PLATE	Nos.	30		
2.5	ANTICLIMBING DEVICE	Nos.	5		
2.6	CIRCUIT PLATE	Nos.	10		
3.0	Supply of POWER CONDUCTORS in the proposed 220kV lines with 1.5% provision for sag and wastage as per the technical specification and as per the instruction of the engineer in charge.				
3.1	ACSR Zebra (54/7/3.18mm)	Kms.	9.5		
4.0	POWER CONDUCTOR ACCESSORIES				
4.1	For ACSR ZEBRA				
4.1.1	VIBRATION DAMPER	Nos.	72		
4.1.2	MID SPAN JOINT	Nos.	10		
4.1.4	Repair sleeve	Nos.	5		
5.0	Supply of the following Antifog type disc insulators as per the technical specification and as per the instruction of the Engineer in charge.				
5.1	120KN Antifog Insulator (taking 5% extra towards wastage)	Nos.	310		

Sl. No.	DESCRIPTION OF ITEMS	LINE		TO BE QUOTED IN INR	
	Freight and Insurance of supply OF FOLLOWING EQUIPMENTS ALONG WITH HOT DIP GALVANISED STRUCTURE (As per Technical Specification)	UNITS	Construction of 220 KV D/C Line on DC Tower to the proposed GIS INFOCITY-II by making LILO on Circuit - I/II of existing DC ckt of 220 KV NARENDRAPUR-MENDHASAL Near MENDHASAL.(Line Length :02 Kms.)	Unit F&I Charges	Total F&I Charges
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6=4X5</b>
5.2	160KN Antifog Insulator (taking 5% extra towards wastage)	Nos.	662		
6.0	Supply of the following hard ware fittings suitable for following conductors as per the technical specification.				
6.1	For ACSR ZEBRA				
6.1.1	Single suspension Hard wares fittings.(AGS type) suitable for 120 KN Antifog Insulator.	Nos.	21		
6.1.2	Single tension Hard wares fittings. suitable for 160 KN Antifog Insulator.	Nos.	21		
<b>TOTAL OF LINE (PART-II)-2B (F&amp;I)</b>					

**Note:**

Before filling up rate/amount etc. in the schedules bidders are requested to read carefully the instruction given in Vol-I of Bidding Document.

1

2 Bidders are required to fill up amount in all column except shaded portion.

3 Bidders are requested not to leave any column blank. If any column is left blank it shall be considered that amount against those items are included in any other item and the total amount for that item shall be calculated as free of cost (Zero value). No rate shall be furnished/obtained after bid opening (Ref clause no 33.4.1 of INB vol-I)

4 Kindly enclose soft copy of the duly filled schedule in a CD with the priced copy of Bid.

5 Bidder should be quoted including service tax, no service tax shall be paid/reimbursed.

Date :

Place :

(Signature) .....

( Name) .....

( Designation ) .....

(Common Seal) .....

**ORISSA POWER TRANSMISSION CORPORATION LIMITED**

**CONSTRUCTION OF 2X40 MVA (220/33 KV) 220/33 KV GAS INSULATED (SF6) SUB-STATION AT INFOCITY-II ,BHUBANESWAR & ASSOCIATED 220 KV DC LILO LINE ARRANGEMENT ON THE EXISTING NARENDRAPUR-MENDHASAL DC LINE ON TURNKEY BASIS**

**BID DOCUMENT No.:Sr. G.M- CPC- TENDER- GIS INFOCITY-II- PACKAGE- 23 / 2012-13**

**(Equipment/Materials F&I Price against Package GIS INFOCITY-II)**

**PART-II, SCHEDULE-2C (FOR LINE)**

S. No.	DESCRIPTION OF ITEMS	LINE	TO BE QUOTED IN INR		
	ERECTION,TESTING & COMMISSIONING OF FOLLOWING EQUIPMENTS ALONG WITH CIVIL WORKS (As per Technical Specification)	UNITS	Construction of 220 KV D/C Line on DC Tower to the proposed GIS INFOCITY-II by making LILO on Circuit - 1/II of existing DC ckt of 220 KV NARENDRAPUR-MENDHASAL Near MENDHASAL,(Line Length :02 Kms.)	Unit Rate	Total Price
1	2	3	5	6	7=5X6
<b>A</b>	<b>ELECTRICAL WORKS</b>				
1	ERECTION,TESTING & COMMISSIONING of Following 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 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	OA TYPE (SUSPENSION ) TOWERS ( Nominal unit Weight 4.351 MT)	Nos.	2		
1.2	OC TYPE (60 deg ANGLE ) TOWERS ( Nominal unit Weight 9.839 MT)	Nos.	3		
1.3	+3 EXTENSION ( Nominal unit Weight 1.474 MT)	Nos.	1		
1.4	TEMPLATES				
1.4.1	OA ( Nominal unit Weight 0.597 MT)	lot	1		
1.4.3	OC ( Nominal unit Weight 1.172 MT)	lot	1		
1.5	<b>TOTAL WEIGHT OF THE STRUCTURE (including stubs,Foundation Bolts Templates etc)</b>	MT	<b>40</b>		

S. No.	DESCRIPTION OF ITEMS	LINE	TO BE QUOTED IN INR		
	ERECTION, TESTING & COMMISSIONING OF FOLLOWING EQUIPMENTS ALONG WITH CIVIL WORKS (As per Technical Specification)	UNITS	Construction of 220 KV D/C Line on DC Tower to the proposed GIS INFOCITY-II by making LILo on Circuit - /II of existing DC ckt of 220 KV NARENDRAPUR-MENDHASAL Near MENDHASAL. (Line Length :02 Kms.)	Unit Rate	Total Price
1	2	3	5	6	7=5X6
1.6	<b>Weight of G.I Nuts and Bolts</b>	MT	1.6		
2.0	Erection of the following tower accessories as per technical specification and as directed by the engineer in charge.				
2.1	EARTHING DEVICE	Nos.	5		
2.2	DANGER BOARD	Nos.	5		
2.3	NUMBER PLATE	Nos.	5		
2.4	PHASE PLATE	Nos.	30		
2.5	ANTICLIMBING DEVICE	Nos.	5		
2.6	CIRCUIT PLATE	Nos.	10		
3.0	Erection of POWER CONDUCTORS in the proposed 220kV lines with 1.5% provision for sag and wastage as per the technical specification and as per the instruction of the engineer in charge.				
3.1	ACSR Zebra (54/7/3.18mm)	Kms.	9.5		
4.0	POWER CONDUCTOR ACCESSORIES				
4.1	For ACSR ZEBRA				
4.1.1	VIBRATION DAMPER	Nos.	72		
4.1.2	MID SPAN JOINT	Nos.	10		
4.1.4	Repair sleeve	Nos.	5		
5.0	Erection of the following Antifog type disc insulators as per the technical specification and as per the instruction of the Engineer in charge.				
5.1	120KN Antifog Insulator (taking 5% extra towards wastage)	Nos.	310		

S. No.	DESCRIPTION OF ITEMS	LINE	TO BE QUOTED IN INR		
			UNITS	Construction of 220 KV D/C Line on DC Tower to the proposed GIS INFOCITY-II by making LILo on Circuit - /II of existing DC ckt of 220 KV NAREDRAPUR-MENDHASAL Near MENDHASAL.(Line Length :02 Kms.)	Unit Rate
1	2	3	5	6	7=5X6
5.2	160KN Antifog Insulator (taking 5% extra towards wastage)	Nos.	662		
6.0	Erection of the following hard ware fittings suitable for following conductors as per the technical specification.				
6.1	For ACSR ZEBRA				
6.1.1	Single suspension Hard wares fittings.(AGS type) suitable for 120 KN Antifog Insulator.	Nos.	21		
6.1.2	Single tension Hard wares fittings. suitable for 160 KN Antifog Insulator.	Nos.	21		
<b>TOTAL OF Electrical Works (PART-II)</b>					
<b>B</b>	<b>CIVIL WORKS</b>				
1.0	<b>FOUNDATION MATERIALS:</b> Supply of all materials like cement, MS Rod (FE500), 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. Excavation in all type 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/murum/sand shall be brought for filling and compaction, including supply of sand, all T&P, labour as required.				
1.1	EXCAVATION FOR PREPARATION OF FOUNDATION WORK FOR THE ABOVE SWITCHYARD COLUMN,EQUIPMENT etc.: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.				
1.1.1	Norma Soil(SOFT/LOOSE)	Cum	100		
1.1.2	Hard Soil	Cum	100		



S. No.	DESCRIPTION OF ITEMS	LINE	TO BE QUOTED IN INR		
	ERECTION,TESTING & COMMISSIONING OF FOLLOWING EQUIPMENTS ALONG WITH CIVIL WORKS (As per Technical Specification)	UNITS	Construction of 220 KV D/C Line on DC Tower to the proposed GIS INFOCITY-II by making LILo on Circuit - /II of existing DC ckt of 220 KV NARENDRAPUR-MENDHASAL Near MENDHASAL.(Line Length :02 Kms.)	Unit Rate	Total Price
1	2	3	5	6	7=5X6
1.1.3	Soft Rock	Cum	50		
1.1.4	Hard Rock required blasting	Cum	25		
1.2	Design, Engineering and laying of reinforced cement concrete (RCC 1:1.5:3) of grade M20 for open cast foundation with supply of approved quality coarse aggregates(Nominal size 12mm to 20mm) ,fine aggregates, cement and MS Rod of different size(as per design) with cutting, bending, binding with supply of binding wire & positioning in tower foundation and inclusive of labour charges for concrete mixing, supply and fixing of form boxes, curing,shoring, shuttering, testing of sample cement concrete cubes as per IS. The height of the coping shall be 350mm above the finished concrete level. The surrounding area shall be clear from materials. Damage of land if any by the contractor shall be repaired before measurement. This includes supply of all labourers, T&P and dewatering wherever required as per Technical specification and instruction of Engineer In charge.	CUM	150		
1.2.1	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 tower foundation as blind layer inclusive of labour charges for concrete mixing & curing. This includes supply of all labourers, T&P and dewatering wherever required as per Technical specification and instruction of Engineer In charge and in Pile Cap & Tie Beam.	Cum	30		
1.3	<b>REVETMENT:(including Benching)Supply of all materials like cement, random rubles stone ( stone masonry) all type aggre-gates,labours,Mixture machine,fuel,lubricant &amp; T&amp;P for constru-ction of revetment walls as per requirement to protect the towers, where felt unsafe and as per the direction of Engineer in charge.</b>				
1.3.1	Excavation in all type of soil including rock & back filling including supply of sand with back filling.	CUM	50		
1.3.2	PCC in the ratio1:3:6 including supply of sand 12-20 mm chips.	CUM	15		
1.3.3	PCC in the ratio 1:2:4 as above.	CUM	35		

S. No.	DESCRIPTION OF ITEMS	LINE	TO BE QUOTED IN INR		
	ERECTION, TESTING & COMMISSIONING OF FOLLOWING EQUIPMENTS ALONG WITH CIVIL WORKS (As per Technical Specification)	UNITS	Construction of 220 KV D/C Line on DC Tower to the proposed GIS INFOCITY-II by making LILo on Circuit - /II of existing DC ckt of 220 KV NAREDRAPUR-MENDHASAL Near MENDHASAL.(Line Length :02 Kms.)	Unit Rate	Total Price
1	2	3	5	6	7=5X6
1.3.4	RRMasonry work in the ratio 1:5.	CUM	100		
1.4	Supply & painting of black bituminous paints three coats shall be provided up to a height of 500mm above the cooping(both leg & bracing members)	Nos.	20		
1.5	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 optd.), application of required zinc rich paints around the welding portion (two coats),fuel,lubricants,T&P and labours.	Nos.	5000		
<b>2.0</b>	<b>SURVEY OF LINE &amp; PREPARATION LAND SCHEDULE: Supply of required T&amp;P's, Technical personnel's, labours for conducting</b>				
2.1	Preliminary survey, Detail survey and resurvey (required for avoiding ROW problem) including but not limited to taking of levels, profile plotting, tower spotting ,marking of towers locations at site including showing P&T line, power line, Railway line, river crossing, roads and submission of route map and survey report etc. The P&T lines and railway lines for a minimum distance of 8 kms on either side of alignment shall be clearly indicated.	Kms.	2		
2.2	Check survey including supply of all labour, T&P as per instruction of Engineer in Charge and as per the approved profile.	Kms.	2		
2.3	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 220 KV line. Final route to be plotted on 1:50000 topo sheet for approval.	LS	1		
2.4	PTCC approval, railway crossing has to be obtained by submitting the required documents to the concerned department through OPTCL. Way-Leave blockade charges and any other charges are to be borne by the bidders. The documents for PTCC clearance & Railway clearance including required drawings etc has to be submitted by the contractor within 5 months of award of contract. Beyond the above period L.D as applicable & the amount shall be deducted as specified in the specification.	LS	1		

S. No.	DESCRIPTION OF ITEMS	LINE		TO BE QUOTED IN INR	
				Unit Rate	Total Price
	ERECTION, TESTING & COMMISSIONING OF FOLLOWING EQUIPMENTS ALONG WITH CIVIL WORKS (As per Technical Specification)	UNITS	Construction of 220 KV D/C Line on DC Tower to the proposed GIS INFOCITY-II by making LILo on Circuit - /II of existing DC ckt of 220 KV NAREDRAPUR-MENDHASAL Near MENDHASAL. (Line Length :02 Kms.)		
1	2	3	5	6	7=5X6
2.5	soil investigation: soil investigation at tower locations in accordance with the specification as per the instruction of Engineer In Charge for design of tower foundation	Location	5		
<b>TOTAL OF Civil Works (PART-I)</b>					
<b>TOTAL OF LINE (Electrical Work) (PART-II) &amp; (Civil Work) (PART-II)- 2C (ERECTION)</b>					

Note:

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- 4 Kindly enclose soft copy of the duly filled schedule in a CD with the priced copy of Bid.
- 5 Bidder has to quote rates excluding service tax (if any), service tax shall be paid/reimbursed as per conditions of Bid Document.

Date : (Signature) .....

Place : ( Name) .....

( Designation ) .....

(Common Seal) .....

**ORISSA POWER TRANSMISSION CORPORATION LIMITED**

**CONSTRUCTION OF 2X40 MVA (220/33 KV) 220/33 KV GAS INSULATED (SF6) SUB-STATION AT INFOCITY-II ,BHUBANESWAR & ASSOCIATED 220 KV DC LILO LINE ARRANGEMENT ON THE EXISTING NARENDRAPUR-MENDHASAL DC LINE ON TURNKEY BASIS**

**BID DOCUMENT No.:Sr. G.M- CPC- TENDER- GIS INFOCITY-II- PACKAGE- 23 / 2012-13**

**(Item wise Price of Mandatory Spares for Package GIS INFOCITY-II)**

SCHEDULE – 3			TO BE QUOTED IN INR								
Sl. No.	SUPPLY OF MANDATORY SPARES FOR THE FOLLOWING EQUIPMENTS. (As per Technical Specification)	Unit	TOTAL QUANTITY	Unit Ex-works (Rs.)	Total Ex-works (Rs.)	Mode of Transaction/ (Bought out/Direct)	Excise Duty (Rs.)	Sales Tax/VAT (Rs.)	Other levies (if any)	Unit (F&I)	Total (F&I)
1	2	3	4	5	6=4X5	7	8	9	10	11	12=4X11
<b>1</b>	<b>220 KV SIDE OF GIS SYSTEM</b>										
1.1	Maintenance earthing switch	<b>Unit</b>	<b>1</b>								
1.2	Fast acting earthing switch	<b>Unit</b>	<b>1</b>								
1.3	Disconnecter	<b>Unit</b>	<b>1</b>								
1.7	Density monitors for circuit breaker	<b>Unit</b>	<b>1</b>								
1.8	Density monitors for other gas compartments	<b>Unit</b>	<b>1</b>								
1.9	Drive for circuit breaker	<b>Unit</b>	<b>1</b>								
1.10	Drive for dis connector & earthing switch	<b>Unit</b>	<b>1</b>								
1.11	Drive for fast acting earthing switch	<b>Unit</b>	<b>1</b>								
1.12	<b>Current transformer</b>	<b>SET</b>	<b>1</b>								
1.13	<b>Potential Transformer</b>	<b>SET</b>	<b>1</b>								
1.14	<b>CB closing coil</b>	<b>NOS</b>	<b>3</b>								
1.15	<b>CB Tripping coil</b>	<b>NOS</b>	<b>3</b>								
1.16	SF6 Pressure gauges	<b>SET</b>	<b>2</b>								
1.17	SF6 Pressure relief devices	<b>SET</b>	<b>2</b>								
1.18	Auxiliary contacts for circuit breaker	<b>SET</b>	<b>2</b>								
1.19	Auxiliary contacts for DS and ES	<b>SET</b>	<b>2</b>								
1.20	SF6 gas in steel bottle 52 Kg / bottle	<b>NOS</b>	<b>2</b>								
1.21	Rupture disc for circuit breakers / potential transformer	<b>SET</b>	<b>1</b>								

Package-23 GIS INFOCITY-II-SCHEDULE-3

SCHEDULE – 3			TO BE QUOTED IN INR								
Sl. No.	SUPPLY OF MANDATORY SPARES FOR THE FOLLOWING EQUIPMENTS. (As per Technical Specification)	Unit	TOTAL QUANTITY	Unit Ex-works (Rs.)	Total Ex-works (Rs.)	Mode of Transaction/ (Bought out/Direct)	Excise Duty (Rs.)	Sales Tax/VAT (Rs.)	Other levies (if any)	Unit (F&I)	Total (F&I)
1	2	3	4	5	6=4X5	7	8	9	10	11	12=4X11
1.22	Set of spares for local control cabinet including M.C.B., fuses, time relays,auxiliary relay and terminals	SET	1								
1.23	Rupture disc for other compartments	Unit	2								
<b>2</b>	<b>33 KV SIDE OF GIS SYSTEM</b>										
2.1	Maintenance earthing switch	Unit	1								
2.2	Fast acting earthing switch	Unit	1								
2.3	Disconnecter	Unit	1								
2.4	Support insulators	Unit	2								
2.5	Barrier insulators	Unit	2								
2.6	Complete Vacuum Interrupter of circuit breaker	Unit	3								
2.7	Density monitors for other gas compartments	Unit	1								
2.8	Drive for circuit breaker	Unit	1								
2.9	Drive for dis connector & earthing switch	Unit	1								
2.10	Drive for fast acting earthing switch	Unit	1								
2.11	<b>Current transformer</b>	SET	1								
2.12	<b>Potential Transformer</b>	SET	1								
2.13	<b>CB closing coil</b>	NOS	3								
2.14	<b>CB Tripping coil</b>	NOS	3								
2.15	SF6 Pressure gauges	SET	2								
2.16	SF6 Pressure relief devices	SET	2								
2.17	Auxiliary contacts for circuit breaker	SET	2								
2.18	Auxiliary contacts for DS and ES	SET	2								
2.19	Spring charge motor for circuit breakers	NOS	1								

Package-23 GIS INFOCITY-II-SCHEDULE-3

SCHEDULE – 3			TO BE QUOTED IN INR								
Sl. No.	SUPPLY OF MANDATORY SPARES FOR THE FOLLOWING EQUIPMENTS. (As per Technical Specification)	Unit	TOTAL QUANTITY	Unit Ex-works (Rs.)	Total Ex-works (Rs.)	Mode of Transaction/ (Bought out/Direct)	Excise Duty (Rs.)	Sales Tax/VAT (Rs.)	Other levies (if any)	Unit (F&I)	Total (F&I)
1	2	3	4	5	6=4X5	7	8	9	10	11	12=4X11
2.20	Complete drive mechanism for disconnect switches and grounding switches	Unit	1								
2.21	Motor for disconnect switches and grounding switches	Unit	1								
2.22	Complete drive mechanism for fast acting grounding switches	Unit	1								
2.23	Motor for fast acting grounding switches	Unit	1								
2.24	Rupture disc for circuit breakers / potential transformer	SET	1								
2.25	Set of spares for local control cabinet including M.C.B., fuses, time relays,auxiliary relay and terminals	SET	1								
2.26	Rupture disc for other compartments	Unit	2								
3	245 KV,4400pF,3CORE,SINGLE PHASE CAPACITOR VOLTAGE TRANSFORMER INCLUDING TERMINAL CONNECTOR	NOS	1								
4	216 KV,METAL OXIDE, 10 KA, CLASS III SURGE ARRESTOR COMPLETE WITH INSULATING BASE & SURGE MONITOR	NOS	1								
5	220 KV Bus Post Insulators	NOS	1								
6	<b>30 KV,METAL OXIDE, 10 KA CLASS II SURGE ARRESTOR COMPLETE WITH INSULATOR BASE AND SURGE MONITOR</b>	NOS	2								
7	33 KV Bus Post Insulators	NOS	2								

Package-23 GIS INFOCITY-II-SCHEDULE-3

SCHEDULE – 3			TO BE QUOTED IN INR								
Sl. No.	SUPPLY OF MANDATORY SPARES FOR THE FOLLOWING EQUIPMENTS. (As per Technical Specification)	Unit	TOTAL QUANTITY	Unit Ex-works (Rs.)	Total Ex-works (Rs.)	Mode of Transaction/ (Bought out/Direct)	Excise Duty (Rs.)	Sales Tax/VAT (Rs.)	Other levies (if any)	Unit (F&I)	Total (F&I)
1	2	3	4	5	6=4X5	7	8	9	10	11	12=4X11
<b>8</b>	<b>BUS BAR &amp; CIRCUIT MATERIALS</b>										
8.1	160 KN ANTIFOG INSULATOR STRINGS <i>for single tension single Moose conductor</i> (TENSION)-220 KV	SET	2								
8.2	120 KN INSULATOR STRINGS <i>for Single tension Single Moose conductor</i> (TENSION)-33 KV	SET	2								
8.3	90 KN INSULATOR STRINGS <i>for Single Suspension Double/ Single Moose cond</i> (SUSPENSION)-220 KV	SET	2								
8.4	90 KN INSULATOR STRINGS <i>for Single Suspension Double/ Single Moose cond</i> (SUSPENSION)-33 KV	SET	2								
9	ACSR MOOSE CONDUCTOR	MTRS	200								
10	HARDWARES & FITTINGS/SPACERS/CLAMP & CONNECTORS	SET (EACH TYPE THREE NOS.)	1								
<b>11</b>	<b>POWER CABLES,1.1KV,XLPE,ARMoured, ALUMINIUM CONDUCTOR(As per Specification)</b>										
11.1	3.5 CX300 mm <sup>2</sup> (ONE PIECE OF MAXM. LENGTH OF CABLE USED)	PCS.	1								
11.2	3.5 CX185 mm <sup>2</sup> (ONE PIECE OF MAXM. LENGTH OF CABLE USED)	PCS.	1								
11.3	3.5 CX120 mm <sup>2</sup> (ONE PIECE OF MAXM. LENGTH OF CABLE USED)	PCS.	1								

Package-23 GIS INFOCITY-II-SCHEDULE-3

SCHEDULE – 3			TO BE QUOTED IN INR								
Sl. No.	SUPPLY OF MANDATORY SPARES FOR THE FOLLOWING EQUIPMENTS. (As per Technical Specification)	Unit	TOTAL QUANTITY	Unit Ex-works (Rs.)	Total Ex-works (Rs.)	Mode of Transaction/ (Bought out/Direct)	Excise Duty (Rs.)	Sales Tax/VAT (Rs.)	Other levies (if any)	Unit (F&I)	Total (F&I)
1	2	3	4	5	6=4X5	7	8	9	10	11	12=4X11
11.4	3.5 CX70 mm <sup>2</sup> (ONE PIECE OF MAXM. LENGTH OF CABLE USED)	PCS.	1								
11.5	3.5 CX35 mm <sup>2</sup> (ONE PIECE OF MAXM. LENGTH OF CABLE USED)	PCS.	1								
11.6	4 CX 16 mm <sup>2</sup>	MTRS	250								
11.7	4 CX 6 mm <sup>2</sup>	MTRS	250								
11.8	2CX 6 mm <sup>2</sup>	MTRS	250								
<b>12</b>	<b>CONTROL CABLES,1.1 KV, PVC,STRANDED COPPER(As per specification)</b>										
12.1	4 CX 2.5 mm <sup>2</sup> (ONE DRUM HAVING LENGTH OF 500 MTRS)	NOS.	1								
12.2	5 CX 2.5 mm <sup>2</sup> (ONE DRUM HAVING LENGTH OF 500 MTRS)	NOS.	1								
12.3	7 CX 2.5 mm <sup>2</sup> (ONE DRUM HAVING LENGTH OF 500 MTRS)	NOS.	1								
12.4	10 CX 2.5 mm <sup>2</sup> (ONE DRUM HAVING LENGTH OF 500 MTRS)	NOS.	1								
12.5	12 CX 2.5 mm <sup>2</sup> (ONE DRUM HAVING LENGTH OF 250 MTRS)	NOS.	1								
12.6	16 CX 2.5 mm <sup>2</sup> (ONE DRUM HAVING LENGTH OF 250 MTRS)	NOS.	1								
12.7	19 CX 2.5 mm <sup>2</sup> (ONE DRUM HAVING LENGTH OF 250 MTRS)	NOS.	1								
12.8	1CX 100 mm <sup>2</sup> BAT TO BAT CHARGER & CHARGER TO DCDB	MTRS	50								



Package-23 GIS INFOCITY-II-SCHEDULE-3

SCHEDULE – 3			TO BE QUOTED IN INR								
Sl. No.	SUPPLY OF MANDATORY SPARES FOR THE FOLLOWING EQUIPMENTS. (As per Technical Specification)	Unit	TOTAL QUANTITY	Unit Ex-works (Rs.)	Total Ex-works (Rs.)	Mode of Transaction/ (Bought out/Direct)	Excise Duty (Rs.)	Sales Tax/VAT (Rs.)	Other levies (if any)	Unit (F&I)	Total (F&I)
1	2	3	4	5	6=4X5	7	8	9	10	11	12=4X11
13	BATTERY CHARGER FOR 350 AH (48V) ONE COMPLETE SET OF ELECTRONIC CARDS	SET	1								
14	BATTERY CHARGER FOR 350 AH (220V) ONE COMPLETE SET OF ELECTRONIC CARDS	SET	1								
15	<b>PROTECTION,CONTROL METERING,EVENT LOGGER,BUS BAR PROT N PAN,COMM PAN,RELAY TOOL KITS AS PER TECH SPEC AND BOQ FOR PCM</b>										
15.1	<b>220 KV SIDE</b>										
15.1.1	DISTANCE PROTECTION RELAY	NOS	1								
15.1.2	OVER CURRENT & EARTH FAULT RELAY	NOS	1								
15.1.3	MASTER TRIP RELAY	NOS	2								
15.1.4	DIFFERENTIAL PROTECTION RELAY	NOS	1								
15.1.5	TRIP SUPERVISION RELAY	NOS	4								
15.1.6	OTHER AUXILIARY RELAYS(EACH 1 NO. OF DIFFERENT TYPE)	SET	1								
15.2	<b>33 KV SIDE</b>										
15.2.1	OVER CURRENT & EARTH FAULT RELAY	NOS	1								
15.2.2	MASTER TRIP RELAY	NOS	2								
15.2.3	OTHER AUXILIARY RELAYS (EACH 1 NO. OF DIFFERENT TYPE)	SET	1								
16	TOOLS & SPARE PARTS ETC AS PER TECHNICAL SPEC GIS SYSTEM E30(CL No. 3.2.12 & 3.12.13)	LOT	1								

SCHEDULE – 3			TO BE QUOTED IN INR								
Sl. No.	SUPPLY OF MANDATORY SPARES FOR THE FOLLOWING EQUIPMENTS. (As per Technical Specification)	Unit	TOTAL QUANTITY	Unit Ex-works (Rs.)	Total Ex-works (Rs.)	Mode of Transaction/ (Bought out/Direct)	Excise Duty (Rs.)	Sales Tax/VAT (Rs.)	Other levies (if any)	Unit (F&I)	Total (F&I)
1	2	3	4	5	6=4X5	7	8	9	10	11	12=4X11
17	ACCESSORIES & TESTING EQUIPMENT ETC AS PER TECHNICAL SPEC GIS SYSTEM E30(CL No. 3.2.23)	LOT	1								
<b>TOTAL OF SUBSTATION (PART-I)--3 -MANDATORY SPARE</b>											

**Note:**

1

Before filling up rate/amount etc. in the schedules bidders are requested to read carefully the instruction given in Vol-I of Bidding Document.

2

Bidders are required to fill up amount in all column except shaded portion.

3

Bidders are requested to not leave any column blank. If any column is left blank it shall be considered that amount against those items are included in any other item and the total amount for that item shall be calculated as free of cost (Zero value).

4

Kindly enclose soft copy of the duly filled schedule in a CD with the priced copy of Bid.

5

In mode of transaction column please indicate Direct/Bought-Out. For Taxes & Duties on Direct/Bought-out items ref clause 6.0 of SCC (Vol-IA)

6

Bidder should quoted F&I including service tax, no service tax shall be paid/reimbursed on this account.

Date :

Place:

(Signature).....

(Printed Name).....

(Designation).....

(Common Seal).....