

POWER GRID COMPANY OF BANGLADESH LIMITED

Design, Supply, Installation, Testing and Commissioning of 230/33kV GIS Substation at Char Fasson & 230kV GIS Bay Extension at Nutan Bidyut Power Plant on turnkey basis.

Under

Southwest Transmission Grid Expansion Project.

[Bid Identification No.: PGCB/ADB/3683/STGEP/CHARFASSON/SS]

Addendum No. 1

Volume 3 of 3

1. **Schedule of requirements, Schedule A** [Page [V3-SA-Page 26 of 28];

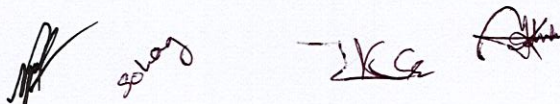
- i) Short circuit rating 40kA is corrected to 31.5kA for item no. 2Q1 & 2Q2.
- ii) Short circuit rating 31.5kA is corrected to 15kA for item no. 2Q3 & 2Q4.
- iii) Voltage rating is corrected to 0.415kV instead of 36kV for item no. 2Q4.

2. **Schedule of Rates & Prices:**

- i) The text "40kA" is corrected to "31.5kA" for item no. 2Q1 & 2Q2 in Schedule No.1 & 4.
- ii) The text "31.5kA" is corrected to "15kA" for item no. 2Q3 & 2Q4 in Schedule No.1 & 4.
- iii) The text "36kV" is corrected to "0.415kV" against item No. 2Q4 in Schedule No.1 & 4.
- iv) The quantity of item no 2H3 in Schedule No.1 & 4 is corrected to '1' set in place of '2' sets.
Page No. [V3-SB-S1-page 8 of 22] & [V3-SB-S4-page 4 of 10]
- v) The quantity of item no 2H4 in Schedule No.1 & 4 is corrected to '0' set in place of '2' sets.
Page No: [V3-SB-S1-page 8 of 22] & [V3-SB-S4-page 4 of 10]
- vi) "Schedule No. 2. Plant and Mandatory Spare Parts Supplied from Within the Employer's Country" was not included in the bid document inadvertently, which has now been included in between "Schedule No.1. Plant and mandatory Spare Parts Supplied from Abroad" and "Schedule No. 3. Design Services"

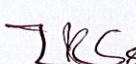
The relevant revised pages Page No. [V3-SB-S1-page 8 of 22-Rev.1] & [V3-SB-S4-page 4 of 10-Rev.1] are attached as **Annexure-1**.

"Schedule No. 2. Plant and Mandatory Spare Parts Supplied from Within the Employer's Country" is attached as Annexure-2.



Schedules of Rates and Prices						
Schedule No. 1. Plant and Mandatory Spare Parts Supplied from Abroad						
Item	Description	Code ¹	Qty. (1)	Unit	Foreign Currency (in.....)	
					Unit Price ¹ CIP	Total Price ¹ CIP
					(2)	(1) x (2)
2H2	Control, Monitoring, Protection & Substation Automation System including event recording function for 120/140MVA, 230/33kV, three phase, power transformer circuits including transformer tap changer control, fan control & AVR		2	sets		
2H3	Control, Monitoring, Protection & Substation Automation System including event recording function for 230kV bus coupler bays		1	sets		
2H4	Control, Monitoring, Protection & Substation Automation System including event recording function for 230kV bus section bays		0	sets		
2H5	Busbar protection system for 245kV system		1	lot		
2H6	Tariff metering for 230kV system		1	lot		
2H7	Digital Fault and Disturbance recorder (DFDR) to monitor complete substation (230kV & 33kV)		1	lot		
	33kV Station Power System					
2H8	Control, Monitoring, Protection & Substation Automation System including event recording function for 33kV incomer circuits of 230/33kV transformer		2	sets		
2H9	Control, Monitoring, Protection & Substation Automation System including event recording function for auxiliary transformer bays		2	sets		
2H10	Tariff metering panel for 33kV system		1	lot		
2I	Fiber Optic Multiplexer Equipment for Communication and Protection					
2I1	Complete set of design, supply, installation and commissioning of Fiber optic multiplexer equipment		1	lot		
2I2	Fibre Optic cable and termination box		1	lot		
2I3	PLC Equipment		0	lot		
2I4	PABX system		1	lot		
2J	Multicore Low Voltage Power & Control Cables					
2J1	Multicore low voltage power and control cables for control, protection, metering, monitoring and L/V power circuits		1	lot		
2K	Batteries, chargers & DC distribution					
2K1	110V Ni-cad Batteries with chargers and distribution boards					
2K1.1	110V Ni-cad Batteries, 400Ah @ 5h		2	sets		
2K1.2	Battery chargers		2	sets		
2K1.3	DC Distribution Board		2	sets		






Annexure-1

V3 - SB - S4 - Page 4 of 10-Rev.1

Schedules of Rates and Prices							
Schedule No. 4. Installation and Other Services							
Item	Description	Qty.	Unit	Unit Price ¹		Total Price ¹	
				Foreign currency portion	Local currency portion	Foreign currency portion	Local currency portion
				(2)	(3)	(1) X (2)	(1) X (3)
2H2	Control, Monitoring, Protection & Substation Automation System including event recording function for 120/140MVA, 230/33kV, three phase, power transformer circuits including transformer tap changer control, fan control & AVR	2	sets				
2H3	Control, Monitoring, Protection & Substation Automation System including event recording function for 230kV bus coupler bays	1	sets				
2H4	Control, Monitoring, Protection & Substation Automation System including event recording function for 230kV bus section bays	0	sets				
2H5	Busbar protection system for 245kV system	1	lot				
2H6	Tariff metering for 230kV system	1	lot				
2H7	Digital Fault and Disturbance recorder (DFDR) to monitor complete substation (230kV & 33kV)	1	lot				
	33kV Station Power System						
2H8	Control, Monitoring, Protection & Substation Automation System including event recording function for 33kV incomer circuits of 230/33kV transformer	2	sets				
2H9	Control, Monitoring, Protection & Substation Automation System including event recording function for auxiliary transformer bays	2	sets				
2H10	Tariff metering panel for 33kV system	1	lot				
2I	Fiber Optic Multiplexer Equipment for Communication and Protection						
2I1	Complete set of design, supply, installation and commissioning of Fiber optic multiplexer equipment	1	lot				
2I2	Fibre Optic cable and termination box	1	lot				
2I3	PLC Equipment	0	lot				
2I4	PABX system	1	lot				
2J	Multicore Low Voltage Power & Control Cables						
2J1	Multicore low voltage power and control cables for control, protection, metering, monitoring and LV power circuits	1	lot				
2K	Batteries, chargers & DC distribution						
2K1	110V Ni-cad Batteries with chargers and distribution boards						
2K1.1	110V Ni-cad Batteries, 400Ah @ 5h	2	sets				
2K1.2	Battery chargers	2	sets				
2K1.3	DC Distribution Board	2	sets				
2K1.4	3kVA, 240V, 50Hz UPS powered from 110V DC distribution board & AC distribution board for Substation Automation System	2	sets				
2K1.5	Insulation Monitoring system for complete DC system	2	sets				
2K2	48V Ni-cad Batteries with chargers and distribution board						
2K2.1	48V Ni-cad Batteries, 200Ah @ 5h	2	sets				
2K2.2	Battery chargers	2	sets				
2K2.3	DC Distribution Board	1	sets				
2K2.4	Insulation Monitoring system for complete DC system	2	sets				
2L	LVAC Distribution						
2L1	LVAC Panels including necessary accessories for substation services	1	lot				
2L2	Tariff meters for LV system	4	Nos				
2L3	Scissor Lift: Battery type for min. two persons. Maximum working high greater than 10m	1	sets				
2L4	Electroscopes for 230kV & 33kV voltage levels (2 sets for each voltage levels)	4	sets				
2L5	Complete equipment shall be designed, supplied, delivered, in-stalled, tested and commissioned of 175kVAR automatic power factor correction (PFC) Panel	1	lot				
2L6	Diesel Generator with capacity of 250kW	1	sets				
2M	Civil Works, Building and Foundation						
2M1*	Complete land development						
2M1.1	Complete compacted land development with carried/dredged earthfilling including approach road	115,988	Cubic meter				
2M1.2	Slpoe protection						
2M1.2.1	Slpoe (1V:2H) protection with turfing	8,903	sqm				
2M2	Complete design, supply and construction of all civil items required for the outdoor works including but not limited to filling / cutting soil and leveling up to finished level and within property line suitable for 230kV GIS & 33kV AIS switchyards at existing substaion.	0	lot				
2M3*	Complete civil items required for outdoor works						
2M3.1	Outdoor gantry foundation 230kV switchyard						
	Gantry column	9	nos.				
2M3.2	Outdoor equipment foundation 230kV switchyard						
	LA	12	nos.				
2M3.3	Outdoor equipment foundation 33kV switchyard						
2M3.3.1	For 33kV incomer-						
2M3.3.1.1	Structure for LA, copper plate, cable termination	4	set**				
2M3.3.1.2	VT	2	set**				
2M3.3.1.3	DS/ES	4	set**				
2M3.3.1.4	CT	2	set**				
2M3.3.1.5	CB	2	set**				
2M3.3.1.6	Marshalling Kiosk	2	set**				
2M3.3.2	For 33kV auxiliary feeder-						






Schedules of Rates and Prices							
Schedule No. 2. Plant and Mandatory Spare Parts Supplied from Within the Employer's Country							
Item	Description	Qty. (1)	Unit	Foreign Currency (in.....)		Local Currency (in BDT)	
				EXW Unit Price ¹	EXW Total Price ¹	EXW Unit Price	EXW Total Price
				(2)	(1) x (2)	(3)	(1) x (3)
SECTION-I	Bay extension at 230kv indoor GIS Substation at Nutan Bidyut Power Plant in Borhanuddin, Bhola.						
1A	400kV GIS Switchyard						
	Deleted.						
1B	245kV GIS Switchyard, structures & connections						
	245kV Indoor Type Gas Insulated Switchgear (GIS)						
1B1	245kV GIS complete diameter (Line & Line combination) with Local Control Cubicle and support structure	1	nos.				
1B2	Deleted.	0	lot				
1B3	Gas Insulated Line (GIL) including Gas/Air bushings for 245kV GIS connection with necessary connecting terminal chambers including support structures						
1B.3.1	For 245kV 1600A, 40kA/3s Circuits from 245kV transmission Lines to 245kV GIS (single phase length)	710	meter				
1B.3.2	245kV 1600A, 40kA/3s Gas/Air bushings	6	nos.				
1B4	Portable Partial Discharge analyzer for GIS	0	set				
	245kV Air Insulated Switchgear (AIS)						
1B5	196kV rated voltage, 160kV(rms) continuous operating voltage at 50°C 10kA, 50Hz, Heavy duty class, metal oxide type, single phase surge arresters with surge counter	6	nos.				
1B6	Stranded, flexible conductors, fittings, clamps, connectors including other accessories for each connection as required for completing 230kV GIS Switchyard and AIS line connections.						
1B6.1	Flexible Conductor, clamps & connectors for Jumper & equipment Connection						
1B6.1.1	Flexible Conductor for jumper, equipment connections	1	lot				
1B6.1.2	Clamps & Connectors	1	lot				
1B6.2	Insulator & Fittings						
1B6.2.1	Insulator	1	lot				
1B6.2.2	Fittings	1	lot				
1B6.3	Steel structures & cable tray						
1B6.3.1	Gantry Column with single beam including nut&bolts	3	nos.				
1B6.3.2	Gantry Column with double beam including nut&bolts	0	nos.				
1B6.3.3	Gantry beam including nut&bolts	2	nos.				

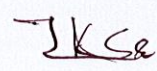
solay

TKG

AKM

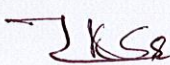
Schedules of Rates and Prices							
Schedule No. 2. Plant and Mandatory Spare Parts Supplied from Within the Employer's Country							
Item	Description	Qty. (1)	Unit	Foreign Currency (in.....)		Local Currency (in BDT)	
				EXW Unit Price ¹	EXW Total Price ¹	EXW Unit Price	EXW Total Price
				(2)	(1) x (2)	(3)	(1) x (3)
1B6.3.4	Equipment support structures including nut&bolts						
1B6.3.4.1	LA	6	nos.				
1B6.3.5	Cable tray including fitting, fixing accessories	1	lot				
1C	145kV GIS Switchyard, structures & connections						
	Deleted.						
1D	36kV Switchgears and Connections with Auto Transformer & Earthing/ Auxiliary Transformers						
	Deleted.						
1E	Power Transformers and Earthing/Auxiliary Transformers						
	Deleted.						
1F	Neutral earthing equipment:						
	Deleted.						
1G	Earthing /Auxiliary transformers						
	Deleted.						
1H	Control, Protection, Substation Automation and Metering						
	230kV Circuits						
1H1	Control, Monitoring, Protection including event recording function for new line circuits - Char Fasson 1&2	2	sets				
1H2	Upgradation/extension of existing Substation Automation System for new line circuits - Char Fasson 1&2	1	lot				
1H3	Upgradation/extension of existing busbar protection system for 245kV system	1	lot				
1H4	Tariff metering system for two (2) new 230kV lines	1	lot				
1H5	Extension of existing Digital Fault and Disturbance recorder (DFDR) to include complete monitoring of the new diameter	1	lot				
1I	Fiber Optic Multiplexer Equipmnet for Communication and Protection						
1I1	Complete set of design, supply, installation and commissioning of Fiber optic multiplexer equipment	1	lot				
1I2	Fibre Optic cable and termination box	1	lot				
1I3	PLC Equipment	0	lot				
1J	Multicore Low Voltage Power & Control Cables						
1J1	Multicore low voltage power and control cables for control, protection, metering, monitoring and LV power circuits	1	lot				






Schedules of Rates and Prices							
Schedule No. 2. Plant and Mandatory Spare Parts Supplied from Within the Employer's Country							
Item	Description	Qty. (1)	Unit	Foreign Currency (in.....)		Local Currency (in BDT)	
				EXW Unit Price ¹	EXW Total Price ¹	EXW Unit Price	EXW Total Price
				(2)	(1) x (2)	(3)	(1) x (3)
1K	Batteries, chargers & DC distribution						
1K1	Upgradation / extension of existing of 220V DC Distribution Board to power DC load of the new diameter	1	lot				
1K2	48V Ni-cad Batteries with chargers and distribution board						
1K2.1	48V Ni-cad Batteries, 200Ah @ 5h	1	sets				
1K2.2	Battery chargers	1	sets				
1K2.3	DC Distribution Board	1	sets				
1L	LVAC Distribution						
1L1	Upgradation / extension of existing of LVAC system including necessary accessories for substation services	1	lot				
1M	Civil Works, Building and Foundation						
1M1	Complete design, supply and construction of all civil items required for the outdoor works including but not limited to filling / cutting soil and leveling up to finished level and within property line suitable for 230kV GIS & AIS switchyards at Nutan Bidyut CCPP area		Please refer to Schedule 4				
1M2*	Complete civil items required for outdoor works						
1M2.1	Outdoor gantry foundation 230kV switchyard						
1M2.1.1	Gantry column						
1M2.2	Outdoor equipment foundation 230kV switchyard						
1M2.2.1	LA						
1M2.3	Chain link fencing (including gates)						
1M2.4	Internal roads (2 m wide)						
1M2.4.1	Dismantling & removal of existing road						
1M2.4.2	Construction of new road						
1M2.5	Drainage system including connection to existing drainage						
1M2.6	Gravelling in switchyard area						
1M3	Modification work at existing GIS hall and other adjacent rooms for the full accommodation of new diameter equipment including GIL entry, cabling laying, connections etc.		Please refer to Schedule 4				
1M4	Upgradation/extension of existing fire alarm & fighting system						
	* actual payment shall be as per actual work at site ** one set includes foundation for three phases of a circuit						
1N	Building Lighting, Small Power, Air Conditioning and Ventilation						





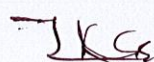
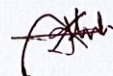

Schedules of Rates and Prices							
Schedule No. 2. Plant and Mandatory Spare Parts Supplied from Within the Employer's Country							
Item	Description	Qty. (1)	Unit	Foreign Currency (in.....)		Local Currency (in BDT)	
				EXW Unit Price ¹	EXW Total Price ¹	EXW Unit Price	EXW Total Price
				(2)	(1) x (2)	(3)	(1) x (3)
1N1	Complete design, supply, installation and commissioning of equipment to provide lighting, LV power supply, air conditioning system (split type, 4.5 Ton each), ventilation system and emergency DC lighting for the substation GIS & Control room buildings, auxiliary & other houses (air cooling system shall be double of the actual requirement).	1	lot				
1O	Switchyard Lighting						
1O1	Upgradation/extension of existing lighting system to provide lighting (flood light LED type) for new AIS switchyard	1	lot				
1P	Earthing and Lightning Protection						
1P1	Earthing and Lightning Protection for new AIS switchyard & new GIS equipments in the GIS room	1	lot				
1Q	230kV, 132kV, 33kV cables & associated structures						
	Deleted.						
1R	SCADA system for Telecontrol and Telemetry						
1R1	Complete SCADA hardware & software	1	lot				
	Total of Section-1						
	(Carried to Schedule-5:Grand summary)						
SECTION-II	Char Fasson 230/33kV Gas Insulated Substation						
2A	400kV GIS Switchyard						
	Deleted.						
2B	245kV GIS Switchyard, structures & connections						
	245kV Indoor Type Gas Insulated Switchgear (GIS)						
2B1	245kV GIS Double Busbar, 230kV Line Feeder Bay with Local Control Cubicle and support structure	2	nos.				
2B2	245kV GIS Double Busbar, 230kV Transformer Bay with Local Control Cubicle and support structure	2	nos.				
2B3	245kV GIS Double Busbar, 245kV Bus Coupler Bay with Local Control Cubicle and support structure	1	nos.				
2B4	245kV GIS Busbar, 245kV Bus Section Bay with Local Control Cubicle and support structure	0	nos.				
2B5	245kV GIS Double Busbar, 245kV Bus VT & Busbar HSES circuit Bay with Local Control Cubicle and support structure	1	nos.				

[Signature]
20/09/20

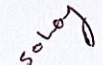
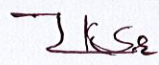
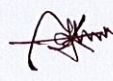
[Signature]
J.K.S.E

[Signature]

Schedules of Rates and Prices							
Schedule No. 2. Plant and Mandatory Spare Parts Supplied from Within the Employer's Country							
Item	Description	Qty. (1)	Unit	Foreign Currency (in.....)		Local Currency (in BDT)	
				EXW Unit Price ¹	EXW Total Price ¹	EXW Unit Price	EXW Total Price
				(2)	(1) x (2)	(3)	(1) x (3)
2B6	Gas Insulated Line (GIL) including Gas/Air bushings for 245kV GIS connection with necessary connecting terminal chambers including support structures						
2B.6.1	For 3150A Circuits from 245kV transmission Lines to 245kV GIS and 230/33kV Transformer to 245kV GIS (single phase length)	773	meter				
2B.6.2	245kV 3150A, 40kA/3s Gas/Air bushings	12	nos.				
2B7	Portable Partial Discharge analyzer for GIS	1	set				
	245kV Air Insulated Switchgear (AIS)						
2B8	196kV rated voltage, 160kV(rms) continuous operating voltage at 50°C 10kA, 50Hz, Heavy duty class, metal oxide type, single phase surge arresters with surge counter	12	nos.				
2B9	Stranded, flexible conductors, fittings, clamps, connectors including other accessories for each connection as required for completing 230kV GIS Switchyard and Transformer connections.						
2B9.1	Flexible Conductor, clamps & connectors for Jumper & equipment Connection						
2B9.1.1	_Flexible Conductor for jumper, equipment connections	1	lot				
2B9.1.2	_Clamps & Connectors	1	lot				
2B9.2	Insulator & Fittings						
2B9.2.1	_Insulator	1	lot				
2B9.2.2	_Fittings	1	lot				
2B9.3	Steel structures & cable tray						
2B9.3.1	_Gantry Column with single beam including nut&bolts	9	nos.				
2B9.3.2	_Gantry Column with double beam including nut&bolts	0	nos.				
2B9.3.3	_Gantry beam including nut&bolts	6	nos.				
2B9.3.4	_Equipment support structures including nut&bolts						
2B9.3.4.1	LA	12	nos.				
2B9.3.5	_Cable tray including fitting, fixing accessories	0	lot				
2C	145kV GIS Switchyard, structures & connections						
	Deleted.						
2D	36kV Switchgears and Connections with Auto Transformer & Earthing/ Auxiliary Transformers						
	36kV Air Insulated Switchgear (AIS)						

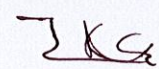




Schedules of Rates and Prices							
Schedule No. 2. Plant and Mandatory Spare Parts Supplied from Within the Employer's Country							
Item	Description	Qty. (1)	Unit	Foreign Currency (in.....)		Local Currency (in BDT)	
				EXW Unit Price ¹	EXW Total Price ¹	EXW Unit Price	EXW Total Price
				(2)	(1) x (2)	(3)	(1) x (3)
2D1	30kV rated voltage, 25kV(rms) continuous operating voltage at 50°C, 10kA nominal discharge current, 50Hz, gapless metal oxide type, single phase surge arresters with surge counters.	18	nos.				
2D2	Single-phase, 2-secondary windings (33,000/√3 / 110/√3 / 110/√3V, 30VA/30VA, Class 3P/0.2) 36kV, 40kA/3sec, 50Hz, 170kVp BIL, inductive voltage transformers	6	nos.				
2D3	36kV Disconnecter						
2D3.1	36kV, 2500A, 40kA/3sec, 50Hz, 170kVp BIL, single horizontal break, post type, disconnecter with earth switch (DS & ES both motor operated) for 36kV AIS incomer	4	sets				
2D3.2	36kV, 630A, 31.5kA/3sec, 50Hz, 170kVp BIL, single horizontal break, post type, disconnecter (motor operated) with fuse for 36/4kV auxiliary transformer bay	2	sets				
2D4	Current transformer 36 kV, single-phase, 4-cores (Core 1&2: 3200-1600/1A, Class: 5P20; Core 3&4: 3200-1600/1A, Class: 0.2S) 40 kA / 3 sec, 50 Hz, 170/70 kV BIL, post type current transformer.	6	nos.				
2D5	36kV, 2500A, 40kA/3sec, 50Hz, SF6/VCB circuit breaker with spring-stored energy operating mechanism	2	sets				
2D6	One (1) lot of stranded, flexible TACSR conductors, insulators, fittings, clamps, connectors, steel structures, cable trays, etc. including other accessories for each connection as required for completing 36kV AIS Switchyard and Transformer connections.						
2D6.1	Flexible Conductor, clamps & connectors for Jumper & equipment Connection, Copper bus	1	lot				
2D6.2	Insulator & Fittings	1	lot				
2D6.3	Steel structures & cable tray						
2D6.3.1	_Gantry Column with single beam including nut&bolts	0	nos.				
2D6.3.2	_Gantry Column with double beam including nut&bolts	0	nos.				
2D6.3.3	_Gantry beam including nut&bolts	0	nos.				
2D6.3.4	_Equipment support structures including nut&bolts						
2D6.3.4.1	For 33kV incomer-						
2D6.3.4.1.1	Structure for LA, copper plate, cable termination	4	set				
2D6.3.4.1.2	VT	2	set				
2D6.3.4.1.3	DS/ES	4	set				

Schedules of Rates and Prices							
Schedule No. 2. Plant and Mandatory Spare Parts Supplied from Within the Employer's Country							
Item	Description	Qty. (1)	Unit	Foreign Currency (in.....)		Local Currency (in BDT)	
				EXW Unit Price ¹	EXW Total Price ¹	EXW Unit Price	EXW Total Price
				(2)	(1) x (2)	(3)	(1) x (3)
2D6.3.4.1.4	CT	2	set				
2D6.3.4.1.5	CB	2	set				
2D6.3.4.1.6	Marshalling Kiosk	2	set				
2D6.3.4.2	For 33kV auxiliary feeder-						
2D6.3.4.2.1	Structure for LA, copper plate, cable termination	2	set				
2D6.3.4.2.2	DS/ES with fuse	2	set				
2D6.3.5	Cable tray including fitting, fixing accessories	1	lot				
2E	Power Transformers and Earthing/Auxiliary Transformers						
2E.1	230/33 kV, 120/140 MVA (ONAN/ONAF), Dyn1 three phase outdoor type transformers	2	nos.				
2E.2	Complete design, supply, delivery, installation, testing and commissioning of Water Spray type Fire Protection System for 230/33kV Transformers	2	sets				
2F	Neutral Earthing Equipment.						
	Deleted.						
2G	Earthing /Auxiliary transformers						
2G1	Auxiliary power transformer 33/0.415 kV, 300 kVA, Dyn11, ONAN, oil immersed, three phase, outdoor, with off-load tap changer; with single phase, 2-core current transformers in all bushings, including all necessary connections & support structures.	2	nos.				
2H	Control, Protection, Substation Automation and Metering						
	230kV Circuits						
2H1	Control, Monitoring, Protection & Substation Automation System including event recording function for line circuits - 230kV Nutan Bidyut 1&2	2	sets				
2H2	Control, Monitoring, Protection & Substation Automation System including event recording function for 120/140MVA, 230/33kV, three phase, power transformer circuits including transformer tap changer control, fan control & AVR	2	sets				
2H3	Control, Monitoring, Protection & Substation Automation System including event recording function for 230kV bus coupler bays	1	sets				
2H4	Control, Monitoring, Protection & Substation Automation System including event recording function for 230kV bus section bays	0	sets				
2H5	Busbar protection system for 245kV system	1	lot				






Schedules of Rates and Prices							
Schedule No. 2. Plant and Mandatory Spare Parts Supplied from Within the Employer's Country							
Item	Description	Qty. (1)	Unit	Foreign Currency (in.....)		Local Currency (in BDT)	
				EXW Unit Price ¹	EXW Total Price ¹	EXW Unit Price	EXW Total Price
				(2)	(1) x (2)	(3)	(1) x (3)
2H6	Tariff metering for 230kV system	1	lot				
2H7	Digital Fault and Disturbance recorder (DFDR) to monitor complete substation (230kV & 33kV)	1	lot				
	33kV Station Power System						
2H8	Control, Monitoring, Protection & Substation Automation System including event recording function for 33kV incomer circuits of 230/33kV transformer	2	sets				
2H9	Control, Monitoring, Protection & Substation Automation System including event recording function for auxiliary transformer bays	2	sets				
2H10	Tariff metering panel for 33kV system	1	lot				
2I	Fiber Optic Multiplexer Equipment for Communication and Protection						
2I1	Complete set of design, supply, installation and commissioning of Fiber optic multiplexer equipment	1	lot				
2I2	Fibre Optic cable and termination box	1	lot				
2I3	PLC Equipment	0	lot				
2I4	PABX system	1	lot				
2J	Multicore Low Voltage Power & Control Cables						
2J1	Multicore low voltage power and control cables for control, protection, metering, monitoring and L/V power circuits	1	lot				
2K	Batteries, chargers & DC distribution						
2K1	110V Ni-cad Batteries with chargers and distribution boards						
2K1.1	110V Ni-cad Batteries, 400Ah @ 5h	2	sets				
2K1.2	Battery chargers	2	sets				
2K1.3	DC Distribution Board	2	sets				
2K1.4	3kVA, 240V, 50Hz UPS powered from 110V DC distribution board & AC distribution board for Substation Automation System	2	sets				
2K1.5	Insulation Monitoring system for complete DC system	2	sets				
2K2	48V Ni-cad Batteries with chargers and distribution board						
2K2.1	48V Ni-cad Batteries, 200Ah @ 5h	2	sets				
2K2.2	Battery chargers	2	sets				
2K2.3	DC Distribution Board	1	sets				
2K2.4	Insulation Monitoring system for complete DC system	2	sets				
2L	LVAC Distribution						

[Signature]
Soley

[Signature] *[Signature]*

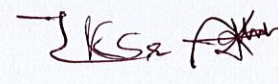
Schedules of Rates and Prices							
Schedule No. 2. Plant and Mandatory Spare Parts Supplied from Within the Employer's Country							
Item	Description	Qty. (1)	Unit	Foreign Currency (in.....)		Local Currency (in BDT)	
				EXW Unit Price ¹	EXW Total Price ¹	EXW Unit Price	EXW Total Price
				(2)	(1) x (2)	(3)	(1) x (3)
2L1	LVAC Panles including necessary accessories for substation services	1	lot				
2L2	Tariff meters for LV system	4	Nos				
2L3	Scissor Lift: Battery type for min. two persons. Maximum working high greater than 10m	1	sets				
2L4	Electroscopes for 230kV & 33kV voltage levels (2 sets for each volate levels)	4	sets				
2L5	Complete equipment shall be designed, supplied, delivered, in-stalled, tested and commissioned of 175kVAR automatic power factor correction (PFC) Panel	1	lot				
2L6	Diesel Generator with capacity of 250kW	1	sets				
2M	Civil Works, Building and Foundation	Please refer to Schedule 4					
2M1*	Complete land development						
2M1.1	Complete compacted land development with carried/dredged earthfilling including approach road						
2M1.2	Slpoe protection						
2M1.2.1	Slpoe (1V:2H) protection with turfing						
2M2	Complete design, supply and construction of all civil items required for the outdoor works including but not limited to filling / cutting soil and leveling up to finished level and within property line suitable for 230kV GIS & 33kV AIS switchyards at existing substaion.						
2M3*	Complete civil items required for outdoor works						
2M3.1	Outdoor gantry foundation 230kV switchyard						
	Gantry column						
2M3.2	Outdoor equipment foundation 230kV switchyard						
	LA						
2M3.3	Outdoor equipment foundation 33kV switchyard						
2M3.3.1	For 33kV incomer-						
2M3.3.1.1	Structure for LA, copper plate, cable termination						
2M3.3.1.2	VT						
2M3.3.1.3	DS/ES						
2M3.3.1.4	CT						
2M3.3.1.5	CB						
2M3.3.1.6	Marshalling Kiosk						
2M3.3.2	For 33kV auxiliary feeder-						

Schedules of Rates and Prices							
Schedule No. 2. Plant and Mandatory Spare Parts Supplied from Within the Employer's Country							
Item	Description	Qty. (1)	Unit	Foreign Currency (in.....)		Local Currency (in BDT)	
				EXW Unit Price ¹	EXW Total Price ¹	EXW Unit Price	EXW Total Price
				(2)	(1) x (2)	(3)	(1) x (3)
2M3.3.2.1	Structure for LA, copper plate, cable termination						
2M3.3.2.2	DS/ES with fuse						
2M3.4	Transformer foundation including oil pit for 230/33kV, 120/140MVA Transformer						
2M3.5	Blast wall for 230/33kV, 120/140MVA Transformer						
2M3.6	Transformer foundation for 300kVA auxiliary transformer						
2M3.7	Security boundary wall for overall plant						
2M3.8	Substation main gate	Please refer to Schedule 4					
2M3.9	Chain link fencing with gates						
2M3.10	Approach road (pavement width 6m)						
2M3.11	Internal roads:						
2M3.11.1	6m wide road:						
2M3.11.2	4.5m wide road						
2M3.11.3	3m wide road						
2M3.11.4	1.5m walk way						
2M3.12	Cable Trench with soak pit						
2M3.12.1	For control cable of 33kV incomer AIS & 33kV power cable to auxiliary Tx.						
2M3.12.2	For .4kV power cable from auxiliary Tx bay to GIS building						
2M3.13	Surface drain around the substation						
2M3.14	Whole substation surface finishing with drainage system including outlet & a network of water pits connected with pipes throughout the substation (excluding surface drain)						
2M3.15	Gravel surfacing & gravel laying						
2M3.16	Guard house						
2M3.17	Sentry post						
2M3.18	Open store yard including chain link fence, surface drain & gate						
2M3.19	RCC box culvert						
2M3.20	Property line demarkation						
2M3.21	Septic tank and soakpit						
2M3.22	Pump shed including deep tubewell, motor, pump, water reservoir, water pipe line, electrical connetion etc.						
2M3.23	Car port						




Schedules of Rates and Prices							
Schedule No. 2. Plant and Mandatory Spare Parts Supplied from Within the Employer's Country							
Item	Description	Qty. (1)	Unit	Foreign Currency (in.....)		Local Currency (in BDT)	
				EXW Unit Price ¹	EXW Total Price ¹	EXW Unit Price	EXW Total Price
				(2)	(1) x (2)	(3)	(1) x (3)
2M4.1	Complete civil works for 230kV indoor GIS building including protection & metering room, battery room etc. (3 STORIED)						
2M4.1.1	Foundation works						
2M4.1.2	Super structures						
2M4.1.3	All finish works like rendering, painting, water supply, sanitary, floor finish, furniture, etc.	Please refer to Schedule 4					
2M4.1.4	Complete EOT crain system in GIS room (minimum 7 Ton)						
2M4.1.5	Elevator system (capacity: minimum 6 people)						
2M4.2	Complete civil works for Dormitory cum Indoor Store cum Staff Room (3 STORIED)						
2M4.2.1	Foundation works						
2M4.2.2	Super structures						
2M4.2.3	All finish works like rendering, painting, water supply, sanitary, floor finish, furniture, etc.						
2M4.3	Complete civil works for Ansar Barack including foundations, super structures & all finish works like rendering, painting, water supply, sanitary, floor finish, furniture, etc. (1 STORIED)						
2M5	Complete design, supply and construction of all civil items and facilities required for Water Spray type Fire Protection System for transformers						
2M6	Complete design, supply and construction of all civil items and facilities required for Diesel Generator room						
2M7	Testing of Foundation on random basis.						
2M7.1	Compression Test of pile						
2M7.2	Uplift Test of pile						
2M8	Fire alarm & fire fighting system for other areas						
	* actual payment shall be as per actual work at site ** one set includes foundation for three phases of a circuit						
2N	Building Lighting, Small Power, Air Conditioning and Ventilation						
2N1	Complete design, supply, installation and commissioning of equipment to provide lighting, LV power supply, air conditioning system, ventilation system and emergency DC lighting for the substation GIS & Control room buildings, auxiliary & other houses (air cooling system shall be double of the actual requirement).	1	lot				





Schedules of Rates and Prices							
Schedule No. 2. Plant and Mandatory Spare Parts Supplied from Within the Employer's Country							
Item	Description	Qty. (1)	Unit	Foreign Currency (in.....)		Local Currency (in BDT)	
				EXW Unit Price ¹	EXW Total Price ¹	EXW Unit Price	EXW Total Price
				(2)	(1) x (2)	(3)	(1) x (3)
2N2	Complete equipment shall be designed, supplied, delivered, in-stalled, tested and commissioned of surveillance system with IP cameras, NVRs, optical fibre, cat6 cables, switches, indoor & outdoor cabinets, lightning protection systems, power cables and other accessories to complete surveillance system of the substation						
2N2.1	Bullet camera	24	Nos				
2N2.2	Dome camera	8	Nos				
2N2.3	32 channel NVR	1	Nos				
2N2.4	Access switch	1	lot				
2N2.5	Core switch	1	lot				
2N2.6	32" LED TV	1	Nos				
2N2.7	Fiber Optic Cable (6 core Single mode, Armored)	1	lot				
2N2.8	CAT6 Network Cable (STP Type)	1	lot				
2N2.9	Power Cable-NYFGBY	1	lot				
2N2.10	uPVC pipes & fittings, Surveillance Cabinet, 22U rack, Offline UPS, poles, MDB, SDB, ethernet LA, SPD & other necessary accessories	1	lot				
2O	Switchyard Lighting						
2O1	Complete set of design, supply, installation and commissioning of equipment to provide lighting (flood light LED type) for security, roadway, switchyard and emergency DC lighting at strategic locations for equipment operation and inspection.	1	lot				
2P	Earthing and Lightning Protection						
2P1	Earthing system for the substation	1	lot				
2P2	Lightning protection system for the substation	1	lot				
2P3	portable (maintenance) earthing equipment devices with connectors and telescopic glass fibre operating pole	4	sets				
2Q	230kV, 132kV, 33kV cables & associated structures						
2Q1	complete equipment shall be designed, supplied, delivered, in-stalled, tested and commissioned of 36kV, 800mm ² , 31.5kA/ 3 sec, 50Hz, 170/70 kV BIL, single phase XLPE cable (single phase length)	713	meter				
2Q2	complete equipment shall be designed, supplied, delivered, in-stalled, tested and commissioned of 36kV, 31.5kA/ 3 sec, 50Hz, 170/70 kV BIL, appropriate current capacity heat sinkable cable termination kits & associated support structures for single phase XLPE cable.	12	nos				

Sole

M

Jks

F

Schedules of Rates and Prices							
Schedule No. 2. Plant and Mandatory Spare Parts Supplied from Within the Employer's Country							
Item	Description	Qty. (1)	Unit	Foreign Currency (in.....)		Local Currency (in BDT)	
				EXW Unit Price ¹	EXW Total Price ¹	EXW Unit Price	EXW Total Price
				(2)	(1) x (2)	(3)	(1) x (3)
2Q3	complete equipment shall be designed, supplied, delivered, in-stalled, tested and commissioned of .415kV, 185mm ² , 15kA/ 3 sec, 50Hz, 45/25 kV BIL, single phase XLPE cable. (single phase length)	476	meter				
2Q4	complete equipment shall be designed, supplied, delivered, in-stalled, tested and commissioned of .415kV, 15kA/ 3 sec, 50Hz, 45/25 kV BIL, appropriate current capacity heat sinkable cable termination kits & associated support structures for single phase XLPE cable.	12	nos				
2R	SCADA system for Telecontrol and Telemetering						
2R1	Complete SCADA hardware & software	1	lot				
	Total of Section-2						
	(Carried to Schedule-5:Grand summary)						
SECTION-III	Mandatory Spares, Erection & Test Equipment						
3.1	Nutan Bidyut PP (245kV)						
3.1.1	245kV Gas Insulated Switchgear						
3.1.1.1	Operating mechanism of Circuit Breaker (1 Nos for each type of offered CB)	1	lot				
3.1.1.2	Operating mechanism of 3 position DS-ES (1 Nos for each type of offered DS-ES)	0	lot				
3.1.1.3	Operating mechanism of FES (1 Nos for each type of offered FES)	1	lot				
3.1.1.4	Operating mechanism of ES (1 Nos for each type of offered ES)	0	lot				
3.1.1.5	Operating mechanism of DS (1 Nos for each type of offered DS)	1	sets				
3.1.1.6	Each type of auxiliary contacts unit	1	sets				
3.1.1.7	Surge arrester (GIS)	0	nos.				
3.1.1.8	Surge arrester (AIS)	3	nos.				
3.1.1.9	Complete Voltage transformer module	1	nos.				
3.1.1.10	Complete Current transformer module	0	nos.				
3.1.1.11	Closing coils	4	nos.				
3.1.1.12	Tripping coils	8	nos.				
3.1.1.13	Motor for circuit breaker operating mechanism	1	nos.				
3.1.1.14	Motor for disconnecter drive	1	nos.				
3.1.1.15	Coils for Blocking magnet in disconnecter drive	0	nos.				
3.1.1.16	Gas pressure monitor with gauge and pressure switch	3	nos.				
3.1.1.17	Deleted.	0	sets				
3.1.1.18	Pressure Relief Device	1	nos.				

5/2/06

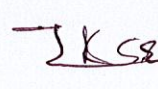
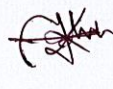
M

J K S

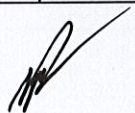
A K S

Schedules of Rates and Prices							
Schedule No. 2. Plant and Mandatory Spare Parts Supplied from Within the Employer's Country							
Item	Description	Qty. (1)	Unit	Foreign Currency (in.....)		Local Currency (in BDT)	
				EXW Unit Price ¹	EXW Total Price ¹	EXW Unit Price	EXW Total Price
				(2)	(1) x (2)	(3)	(1) x (3)
3.1.1.19	Supporting insulator	0	nos.				
3.1.1.20	Barrier insulator or gas tight barrier	0	nos.				
3.1.1.21	Expansion bellows	0	nos.				
3.1.1.22	Rubber gaskets "O" rings and seals for SF6 gas	0	lot				
3.1.1.23	All types of control valves for SF6 gas	0	lot				
3.1.1.24	SF6 gas cylinders - 45 kg	0	nos.				
3.1.2	36kV AIS Switchgears (incomer & auxiliary bay)	Deleted.					
3.1.3	Protection and Control						
3.1.3.1	Protection relay (Line distance protection relay)	1	nos.				
3.1.3.2	Bay unit for bus protection relay	1	nos.				
3.1.3.3	Each type of Tripping relays	1	lot				
3.1.3.4	Each type of Auxiliary relays	3	sets				
3.1.3.5	Each type of Trip circuit supervision relays	1	sets				
3.1.3.6	Bay Control Unit	1	nos.				
3.1.3.7	Relay Test Block & socket	2	sets				
3.1.3.8	Each type of Switch (used in SAS)	0	sets				
3.1.3.9	Each type of MCB	1	sets				
3.1.3.10	Each type of Lamps	5	sets				
3.1.3.11	Heater	5	nos.				
3.1.3.12	Humidity Sensors	5	nos.				
3.1.3.13	Thermostat	5	nos.				
3.1.3.14	Annunciator bulbs	5	nos.				
3.1.3.15	Bulbs for discrepancy switches	5	nos.				
3.1.3.16	Multifunction Meter	2	nos.				
3.1.3.17	Tariff/Energy Meter	1	nos.				
3.1.3.18	Deleted.	0	set				
3.1.4	DC & Charger Equipment (48 v)						
3.1.4.1	Each type of Card (example: control card etc.)	1	nos.				
3.1.4.2	Battery MCB/MCCB	1	nos.				
3.1.4.3	DC board incoming MCCB	1	nos.				
3.1.4.4	Outgoing MCBs	2	nos.				
3.1.4.5	Each type of fuse	1	set				
3.1.5	LVAC Equipment	Deleted.					
3.1.6	Power, Control and Auxiliary Cables						



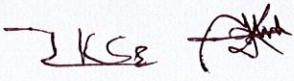
Schedules of Rates and Prices							
Schedule No. 2. Plant and Mandatory Spare Parts Supplied from Within the Employer's Country							
Item	Description	Qty. (1)	Unit	Foreign Currency (in.....)		Local Currency (in BDT)	
				EXW Unit Price ¹	EXW Total Price ¹	EXW Unit Price	EXW Total Price
				(2)	(1) x (2)	(3)	(1) x (3)
3.1.6.1	Control Cables, 200m of each type	0	lot				
3.1.6.2	LV cables, 200m of each type	0	lot				
3.1.6.3	Other cables (communication, etc.), 100m of each type	0	lot				
3.1.7	Transformers and Shunt Reactor	Deleted.					
3.1.8	Earthing / Auxiliary Transformer	Deleted.					
3.1.9	Shunt Reactor	Deleted.					
3.1.10	Instruments for Communication & SCADA	Deleted.					
3.1.11	Post Type Insulator						
3.1.11.1	For 245kV	0	nos.				
3.1.12	Gas Insulated Line (GIL)						
3.1.12.1	245kV, 1600A, GIL (with necessary bellow & angle joint)	0	m				
3.1.13	Disc Insulator						
3.1.13.1	Each type of Disc Insulator	0	nos.				
3.1.14	Conductor						
3.1.14.1	TACSR conductor	0	m				
3.1.15	Clamp and Fitting						
3.1.15.1	Each type of Clamps and Fittings (20% of total supplied or min. 3 nos., whichever is higher for each type)	1	lot				
3.1.16	Testing instruments / special tools for operation and maintenance						
3.1.16.1	SF6 Gas Treatment Plant For Gas Filling, Recovery, Evacuation, Filtering, Drying and Storage with necessary accessories	0	sets				
3.1.16.2	SF6 gas cylinder with valve (50kg)	0	sets				
3.1.16.3	Handheld SF6 gas leakage detector (alarm with proportional sound pitch)	0	sets				
3.1.16.4	Infrared type SF6 gas leakage detector (FLIR)	0	sets				
3.1.16.5	SF6 Multi-Analyser for measurement of %SF6, Moisture and SO ₂ concentration	0	sets				
3.1.16.6	Contact resistance measurement test set (suitable for measurement down to 1 μ ohm at 10A d.c.)	0	sets				
3.1.16.7	5kV insulation resistance test set (range 0.5 -1.0 - 2.5 - 5 kV)	0	sets				
3.1.16.8	Thermovision Camera (FLIR)	0	sets				
3.2	Char Fasson 230/33kV Substation						
3.2.1	245kV Gas Insulated Switchgear						





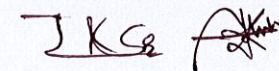

Schedules of Rates and Prices							
Schedule No. 2. Plant and Mandatory Spare Parts Supplied from Within the Employer's Country							
Item	Description	Qty. (1)	Unit	Foreign Currency (in.....)		Local Currency (in BDT)	
				EXW Unit Price ¹	EXW Total Price ¹	EXW Unit Price	EXW Total Price
				(2)	(1) x (2)	(3)	(1) x (3)
3.2.1.1	Operating mechanism of Circuit Breaker (1 Nos for each type of offered CB)	1	lot				
3.2.1.2	Operating mechanism of 3 position DS-ES (1 Nos for each type of offered DS-ES)	1	lot				
3.2.1.3	Operating mechanism of FES (1 Nos for each type of offered FES)	1	lot				
3.2.1.4	Operating mechanism of ES (1 Nos for each type of offered ES)	1	lot				
3.2.1.5	Operating mechanism of DS (1 Nos for each type of offered DS)	0	sets				
3.2.1.6	Each type of auxiliary contacts unit	1	sets				
3.2.1.7	Surge arrester (GIS)	0	nos.				
3.2.1.8	Surge arrester (AIS)	6	nos.				
3.2.1.9	Complete Voltage transformer module	1	nos.				
3.2.1.10	Complete Current transformer module	0	nos.				
3.2.1.11	Closing coils	4	nos.				
3.2.1.12	Tripping coils	8	nos.				
3.2.1.13	Motor for circuit breaker operating mechanism	1	nos.				
3.2.1.14	Motor for disconnect drive	1	nos.				
3.2.1.15	Coils for Blocking magnet in disconnect drive	0	nos.				
3.2.1.16	Gas pressure monitor with gauge and pressure switch	3	nos.				
3.2.1.17	Deleted.	0	sets				
3.2.1.18	Pressure Relief Device	1	nos.				
3.2.1.19	Supporting insulator	0	nos.				
3.2.1.20	Barrier insulator or gas tight barrier	0	nos.				
3.2.1.21	Expansion bellows	0	nos.				
3.2.1.22	Rubber gaskets "O" rings and seals for SF6 gas	0	lot				
3.2.1.23	All types of control valves for SF6 gas	0	lot				
3.2.1.24	SF6 gas cylinders - 45 kg	0	nos.				
3.2.2	36kV AIS Switchgears (incomer & auxiliary bay)						
3.2.2.1	36kV Circuit Breaker	1	sets				
3.2.2.2	36kV Disconnect Switch	1	sets				
3.2.2.3	36kV Disconnect Switch with Fuse	1	sets				
3.2.2.4	Deleted.	0	nos.				
3.2.2.5	36kV Load Break Switch with fuse	0	sets				
3.2.2.6	36kV IVT (same as offered type)	3	nos.				
3.2.2.7	36kV Current Transformer (same as offered type)	3	nos.				





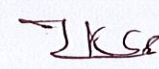
Schedules of Rates and Prices							
Schedule No. 2. Plant and Mandatory Spare Parts Supplied from Within the Employer's Country							
Item	Description	Qty. (1)	Unit	Foreign Currency (in.....)		Local Currency (in BDT)	
				EXW Unit Price ¹	EXW Total Price ¹	EXW Unit Price	EXW Total Price
				(2)	(1) x (2)	(3)	(1) x (3)
3.2.2.8	30kV Surge Arrester	3	nos.				
3.2.2.9	Motor for circuit breaker operating mechanism	1	nos.				
3.2.2.10	Motor for disconnector drive	0	nos.				
3.2.2.11	Closing coils for CB	3	nos.				
3.2.2.12	Tripping coils for CB	6	nos.				
3.2.2.13	Contactors, relays, selector switches, push buttons, counters, heaters, humidity sensors etc., in motor drive mechanism and control cubicle (3 nos. for each type)	1	lot				
3.2.3	Control, Protection, SAS, Metering & DFDR						
3.2.3.1	Protection relay (Line distance & transformer protection relay)	1	nos.				
3.2.3.2	Bay unit for bus protection relay	2	nos.				
3.2.3.3	Each type of Tripping relays	1	lot				
3.2.3.4	Each type of Auxiliary relays	3	sets				
3.2.3.5	Each type of Trip circuit supervision relays	1	sets				
3.2.3.6	Bay Control Unit	1	nos				
3.2.3.7	Relay Test Block & socket	2	sets				
3.2.3.8	Each type of Switch (used in SAS)	1	sets				
3.2.3.9	Each type of MCB	1	sets				
3.2.3.10	Each type of Lamps	5	sets				
3.2.3.11	Heater	10	nos.				
3.2.3.12	Humidity Sensors	10	nos.				
3.2.3.13	Thermostat	10	nos.				
3.2.3.14	Annunciator bulbs	10	nos.				
3.2.3.15	Bulbs for discrepancy switches	10	nos.				
3.2.3.16	Multifunction Meter	5	nos.				
3.2.3.17	Tariff/Energy Meter	2	nos.				
3.2.3.18	Deleted.	0	set				
3.2.4	DC & Charger Equipment (for both 110v & 48v)						
3.2.4.1	Each type of Card (example: control card etc.)	1	nos.				
3.2.4.2	Battery MCB/MCCB	1	nos.				
3.2.4.3	DC board incoming MCCB	1	nos.				
3.2.4.4	Outgoing MCBs	5	nos.				
3.2.4.5	Each type of fuse	1	set				
3.2.5	LVAC Equipment						





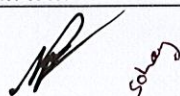
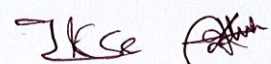
Schedules of Rates and Prices							
Schedule No. 2. Plant and Mandatory Spare Parts Supplied from Within the Employer's Country							
Item	Description	Qty. (1)	Unit	Foreign Currency (in.....)		Local Currency (in BDT)	
				EXW Unit Price ¹	EXW Total Price ¹	EXW Unit Price	EXW Total Price
				(2)	(1) x (2)	(3)	(1) x (3)
3.2.5.1	3-phase set LVAC board incoming ACB/MCCB	1	nos.				
3.2.5.2	3-phase sets outgoing MCCBs	5	nos.				
3.2.5.3	1-phase sets outgoing MCBs	12	nos.				
3.2.6	Power, Control and Auxiliary Cables						
3.2.6.1	Power Cables (36kV), 300m of each type	0	lot				
3.2.6.2	Control Cables, 200m of each type	0	lot				
3.2.6.3	LV cables, 200m of each type	0	lot				
3.2.6.4	Other cables (communication, etc.), 100m of each type	0	lot				
3.2.7	Transformers						
3.2.7.1	Transformer						
3.2.7.2	245kV bushings	2	nos				
3.2.7.3	Neutral Bushing	1	nos				
3.2.7.4	36kV Bushing	1	nos				
3.2.7.5	Set of gaskets	1	set				
3.2.7.6	Complete WTI	1	set				
3.2.7.7	Complete OTI	1	set				
3.2.7.8	Set of Silica gel breather	0	nos				
3.2.7.9	Buchholz relay	1	nos				
3.2.7.10	Set of tap changer diverter switch	0	nos				
3.2.7.11	Tap changer control mechanism motor	1	nos				
3.2.7.12	Transformer oil 200 litter barrel	20	nos.				
3.2.7.13	Water Spray Fire Protection System for Transformers						
3.2.7.13.1	Water spray nozzles	0	nos				
3.2.7.13.2	Relase sprinklers	0	nos				
3.2.7.13.3	Set of internal parts of deluge valve	0	set				
3.2.7.13.4	Set of sealings for deluge valves of each type	0	set				
3.2.7.13.5	Set of sealings for pipes and flanges	0	set				
3.2.7.13.6	Set of spare parts for jockey pump	0	set				
3.2.7.13.7	Set of spare parts for control panel & automatic level indicator	0	set				
3.2.7.13.8	Set of spare parts for air supply and reducing devices	0	set				
3.2.7.13.9	Fire fighting pump complete with coupling	0	set				
3.2.8	Earthing / Auxiliary Transformer						
3.2.8.1	Set of gaskets	1	no.				
3.2.8.2	Complete OTI including gaskets & thermometers	1	set				






Schedules of Rates and Prices							
Schedule No. 2. Plant and Mandatory Spare Parts Supplied from Within the Employer's Country							
Item	Description	Qty. (1)	Unit	Foreign Currency (in.....)		Local Currency (in BDT)	
				EXW Unit Price ¹	EXW Total Price ¹	EXW Unit Price	EXW Total Price
				(2)	(1) x (2)	(3)	(1) x (3)
3.2.8.3	Set of Silica gel breather	1	no.				
3.2.8.4	Buchholz relay	0	no.				
3.2.8.5	Transformer oil 200 litter barrel	0	nos.				
3.2.9	Shunt Reactor						
	Deleted.						
3.2.10	Instruments for Communication & SCADA						
3.2.10.1	Set of spare modules of necessary function	0	lot				
3.2.10.2	Digital data (Communication) analyzer	0	lot				
3.2.10.3	Generator and Receiver for the following interfaces: (1) V.24/RS232 SYNC AND ASYNC (2) V.35 (3) G.703 CO-DIR AND 2048kbps and 704kbps (4) Bit Error rate measuring facility	0	lot				
3.2.10.4	Digital selective level meter (50Hz to 600kHz) plus level generator (50Hz to 2MHz)	0	lot				
3.2.10.5	Subscriber Module for DCS 255 Exchange	0	lot				
3.2.10.6	Industrial PC	0	set				
3.2.10.7	Desktop PC for Substation incharge. Min. Spec: i7 latest gen processor, 16 GB RAM, 512 GB SSD, 24" 1080p IPS LED Monitor, 1500VA UPS, Multifunction B/W printer/scanner with ADF, keyboard, mouse, etc.	0	set				
3.2.10.8	Gateway Terminal	0	set				
3.2.10.9	Bay Ethernet Switches	0	nos.				
3.2.10.10	Optical connectors (one for each)	0	lot				
3.2.11	Post Type Insulator						
3.2.11.1	For 420kV	0	nos.				
3.2.11.2	For 245kV	0	nos.				
3.2.11.3	For 36kV	0	nos.				
3.2.12	Gas Insulated Line (GIL)						
3.2.12.1	245kV, 3150A, GIL (with necessary bellow & angle joint)	0	m				
3.2.13	Disc Insulator						
3.2.13.1	Each type of Disc Insulator	0	nos.				
3.2.14	Conductor						
3.2.14.1	TACSR conductor	0	m				

Schedules of Rates and Prices							
Schedule No. 2. Plant and Mandatory Spare Parts Supplied from Within the Employer's Country							
Item	Description	Qty. (1)	Unit	Foreign Currency (in.....)		Local Currency (in BDT)	
				EXW Unit Price ¹	EXW Total Price ¹	EXW Unit Price	EXW Total Price
				(2)	(1) x (2)	(3)	(1) x (3)
3.2.15	Clamp and Fitting						
3.2.15.1	Each type of Clamps and Fittings (20% of total supplied or min. 3 nos., whichever is higher for each type)	1	lot				
3.2.16	Surveillance system						
3.2.16.1	Bullet camera	5	Nos				
3.2.16.2	Dome camera	3	Nos				
3.2.16.3	Access switch	3	Nos				
3.2.16.4	Ethernet lightning arrester	10	Nos				
3.2.16.5	Sfp modules	0	Nos				
3.2.16.6	SPD type 1	2	Nos				
3.2.16.7	SPD type 2	2	Nos				
3.2.17	Testing instruments / special tools for operation and maintenance						
3.2.17.1	SF6 Gas Treatment Plant For Gas Filling, Recovery, Evacuation, Filtering, Drying and Storage with necessary accessories (DILO)	1	sets				
3.2.17.2	SF6 gas cylinder with valve (50kg)	2	Nos				
3.2.17.3	Handheld SF6 gas leakage detector (alarm with proportional sound pitch)	1	sets				
3.2.17.4	Infrared type SF6 gas leakage detector (FLIR)	1	sets				
3.2.17.5	Dew point Meter (DILO)	0	sets				
3.2.17.6	SF6 Multi-Analyser for measurement of %SF6, Moisture and SO ₂ concentration	0	sets				
3.2.17.7	Contact resistance measurement test set (suitable for measurement down to 1 μ ohm at 10A d.c.)	1	sets				
3.2.17.8	5kV insulation resistance test set (range 0.5 –1.0 - 2.5 - 5 kV)	1	sets				
3.2.17.9	Thermovision Camera (FLIR)	1	sets				
3.2.17.10	Oil Insulation Tester (Breakdown voltage)	1	sets				
3.2.17.12	Multimeter (Fluke/Megger)	0	Nos				
3.2.17.13	Clamp mA meter (both AC & DC)	0	Nos				
3.2.17.14	Portable LA leakage current meter (3rd harmonic)	0	Nos				
3.2.18	General tools for maintenance work						
3.2.18.1	Set of General Tools	0	sets				
3.2.19	Heavy duty equipment / tools maintenance work						
3.2.19.1	Set of Heavy duty equipment / tools	0	sets				
3.2.20	Other equipment / tools						

Schedules of Rates and Prices							
Schedule No. 2. Plant and Mandatory Spare Parts Supplied from Within the Employer's Country							
Item	Description	Qty. (1)	Unit	Foreign Currency (in.....)		Local Currency (in BDT)	
				EXW Unit Price ¹	EXW Total Price ¹	EXW Unit Price	EXW Total Price
				(2)	(1) x (2)	(3)	(1) x (3)
3.2.20.1	Set of other equipment / tools	0	sets				
3.2.21	General equipment						
3.2.21.1	Desktop PC for Substation incharge. Min. Spec: i7 latest gen processor, 16 GB RAM, 1 TB SSD, 24" 1080p IPS LED Monitor, 1500VA UPS, Multifunction B/W printer/scanner with ADF, keyboard, mouse, etc.	1	set				
	Total of Section-3						
	(Carried to Schedule-5:Grand summary)						
SECTION-IV	Additional Services (Please refer to Schedule 4)						
				TOTAL OF SCHEDULE NO.2 (To be indicated in Schedule No.5 Ground Summary)			

Name of Bidder

Signature of Bidder

Notes:Due to decrease or increase of any quantity mentioned above in unit "sets, nos., m, m², m³, liter, kg " during execution stage, the payment shall be at actual basis.

"- " Dash means included

¹ Specify currency in accordance with Bid Data Sheet 19.1
