





# Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of

Lot 1: 400 kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations

Lot 2: 400 kV

New Butwal Substation
Lot 3: 400 kV New Damauli Substation

# MCA-N/ETP/CB/004

# ADDENDUM #10 Issued on: 26 September 2023

This Addendum No. 10 modifies respective portions of the Bidding Document issued on 24 March 2023 and amended through Addendum No. 1 on 04 April 2023, Addendum No. 2 on 30 May 2023, Addendum No. 3 on 06 June 2023, Addendum No. 4 on 10 July 2023, Addendum No. 5 on 12 July 2023, Addendum No. 6 on 18 July 2023, Addendum No. 7 on 17 August 2023, Addendum No. 8 on 24 August 2023 and Addendum No. 9 on 04 September 2023. The changes, as indicated below, are effective on the date of issue of this Addendum.

Except as expressly amended by this Addendum, all other terms and conditions of the Bidding Document - issued on 24 March 2023 and amended through Addendum No. 1 issued on 04 April 2023, Addendum No. 2 on 30 May 2023, Addendum No. 3 on 06 June 2023, Addendum No. 4 on 10 July 2023, Addendum No. 5 on 12 July 2023, Addendum No. 6 on 18 July 2023, Addendum No. 7 on 17 August 2023, Addendum No. 8 on 24 August 2023 and Addendum No. 9 on 04 September 2023 remains unchanged and shall remain in full force and effect in accordance with their terms.

SN	Pages/Paragrap	Amendments					
	h						
1	Part 1: PDF Page						
	657 to	The Price Schedules is amended as per Attachment #1 to this Addendum #10.					
	955 of 1019),						
	Section						
	IV. Bid						
	Submission						
	Forms, <b>PRICE</b>						
	<b>SCHEDULE</b>						
2	Part 1: Page 2,	Submission Deadline 05 October 2023					
	Specific	Submission Deadmic 05 October 2025					
	Procurement						
	Notice (SPN),						
	Submission	has been replaced by:					
	Deadline,						
	Addenda 3,5 and						
	7 of the Bidding	Submission Deadline 19 October 2023					
	Document						

Bids must be delivered to the address below on or before 13:00 hours (local time of Nepal (GMT+5:45)) on 05 October 2023. Electronic bidding will not be permitted. Late bids will be rejected. Bids will be publicly opened in the presence of the bidders' designated representatives and anyone who choose to attend at the address below on 05 October 2023 at 13:00 hours (local time of Nepal (GMT+5:45)). All bids shall be accompanied by a *Bid Security* in the amount of US\$425,000 for Lot 1, US\$260,000 for Lot 2 and US\$270,000 for Lot 3 and it shall be valid until 29 June 2024.

# Contact information:

The address(es) referred to above is (are):	The specific location/venue for submission of bids will be timely notified to all registered bidders via email and posted at MCA-Nepal web page.				
Attn:	Procurement Agent				
E-mail:	MCANepalPA@dt-global.com				
Website:	https://mcanp.org/				

Part 1: Page 3, Specific Procurement Notice (SPN), Addenda 3,5 and 7 of the Bidding Document

# has been replaced by:

Bids must be delivered to the address below on or before 13:00 hours (local time of Nepal (GMT+5:45)) on 19 October 2023. Electronic bidding will not be permitted. Late bids will be rejected. Bids will be publicly opened in the presence of the bidders' designated representatives and anyone who choose to attend at the address below on 19 October 2023 at 13:00 hours (local time of Nepal (GMT+5:45)). All bids shall be accompanied by a *Bid Security* in the amount of US\$425,000 for Lot 1, US\$260,000 for Lot 2 and US\$270,000 for Lot 3 and it shall be valid until 13 July 2024.

# Contact information:

The address(es) referred to above is (are):	The specific location/venue for submission of bids will be timely notified to all registered bidders via email and posted at MCA-Nepal web page.				
Attn:	Procurement Agent				
E-mail:	MCANepalPA@dt-global.com				
Website:	https://mcanp.org/				

4							
-		To request clarification of this Bidding Document only, the Employer's address is:					
		Attention: Procurement Agent of Millennium Challenge Account Nepal  Address: 2nd& 3rd Floor, East Wing, Lal Durbar Convention Centre, Yak & Yeti Complex, Durbar Marg, Kathmandu Nepal					
		Email: MCANepalPA@dt-global.com					
	Part 1: Page 47 & 48, Section II. Bid Data Sheet, ITB 8.1, Addenda 3,5 and 7 of the Bidding Document	Clarifications may be requested by e-mail not later than 45 days (21 August 2023) before the deadline for Bid submission, so that responses to the last set of requests for clarifications received can be issued to all Bidders not later than 30 days (05 September 2023) before the deadline for Bid submission.					
		has been replaced by:					
		To request clarification of this Bidding Document only, the Employer's address is:					
		Attention: Procurement Agent of Millennium Challenge Account Nepal  Address: 2nd& 3rd Floor, East Wing, Lal Durbar Convention Centre, Yak & Yeti Complex, Durbar Marg, Kathmandu Nepal					
		Email: MCANepalPA@dt-global.com					
		Clarifications may be requested by e-mail not later than 59 days (21 August 2023) before the deadline for Bid submission, so that responses to the last set of requests for clarifications received can be issued to all Bidders not later than 20 days (29 September 2023) before the deadline for Bid submission.					
6	Part 1: Page 52, Section II. Bid Data Sheet, ITB	The Bid validity period shall be 240 days, until 01 June 2024.					
	19.1, Addenda 3,5 and 7 of the Bidding  Has been replaced by:						
	Document	The Bid validity period shall be <b>240</b> days, until <b>15 June 2024.</b>					

7		The address for Bid submission is:					
		Attention: Procurement Agent of Millennium Challenge Account Nepal The specific location/venue for submission of bids will be timely notified to all registered bidders and posted at MCA-Nepal web page.					
		The deadline for Bid submission is:					
		Date: <u>05 October 2023</u>					
	Part 1: Page 53, Section II. Bid	Time: 13:00 hours (local time of Nepal (GMT+5:45))					
	Data Sheet, ITB 23.1, Addenda 3,5 and 7 of the Bidding	has been replaced by:					
	Document	The address for Bid submission is:					
		Attention: Procurement Agent of Millennium Challenge Account Nepal  The specific location/venue for submission of bids will be timely notified to all registered bidders and posted at MCA-Nepal web page.					
		The deadline for Bid submission is:					
		Date: 19 October 2023					
		Time: 13:00 hours (local time of Nepal (GMT+5:45))					
8		The Bid opening shall take place at:					
		The specific location/venue for the bids opening will be timely notified to all registered bidders via email and posted at MCA-Nepal web page.					
		Date: 05 October 2023					
	Part 1: Page 53 &	Time: 13:00 hours (local time of Nepal (GMT+5:45))					
	54, Section II. Bid Data Sheet,	<b>1</b>					
	ITB 26.1, Addenda 3,5 and 7 of the Bidding	has been replaced by:					
	Document	The Bid opening shall take place at:					
		The specific location/venue for the bids opening will be timely notified to all registered bidders via email and posted at MCA-Nepal web page.					
		Date: 19 October 2023					
		Time: 13:00 hours (local time of Nepal (GMT+5:45))					

# Attachment#1

# **Price Schedules**

<b>Lots</b>	Price Schedule
<u>Lot 1</u>	230913_Lot1_RAT_P S_Rep.pdf
<u>Lot 2</u>	230913_Lot2_NBW_ PS.pdf
<u>Lot 3</u>	230913_Lot3_NDM_ PS.pdf

# Lot 1 Price Schedule

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations Price Schedule

	Breakdown of Rates and Price Schedule	No. 1. D	esign Ser	vices	
Item No	Description	Qty 1	Unit	Unit Rate US\$ 2	Total Price US\$ (1)x(2)
1.1	Design Works (Electrical)	-	1	2	(1)x(2)
	Electromechancial and Electrical Design of New Substation as Spe	cified in	Scope ar	nd Employers Requi	irements including
1.1.1	Substation Design:	1	Lot	la zmpioyers requ	
	(SLD, Layout, Section elevation, P&C, SCADA,400/220kV Switchgear, Auto Transformers along with connections, Auxiliary System, Control, LV & Fibre Optic Cables along with connections for the same, etc.)	•	200		
1.1.2	Thermal Calculations for normal and emergency continuous current ratings of the switchgear and each main current path component.	1	Lot		
1.1.3	Insulation Coordination Study	1	Lot		
1.1.4	Lightning Surge Overvoltage Study	1	Lot		
1.1.5	Transient Recovery Voltage (TRV) Study for GIS	1	Lot		
1.1.6	Grounding analysis for entire substation (Includes ERT)	1	Lot		
1.1.7	All the requested settings for Protection Coordination, Relay Test	1	Lot		
	Plan, Configuration and Programming on Intelligent Electronic Device (IEDs) such as Relays, RTUs, Automation system, etc. to ensure normal function of integrated system at substation and with other facilities in the entire power system as referred to Lot 1 works				
1.1.8	GIS system earthing and bonding study	1	Lot		
1.1.9	Outdoor Switchyard Lighting Study	1	Lot		
1.1.10	Power Cable Ampacity Study	1	Lot		
1.1.11	Rigid Bus Study	1	Lot		
1.1.12	Power Cable Pulling Tension Calculation	1	Lot		
1.1.13	Any other design work not specifically mentioned above but deemed necessary or as required by Engineer/Employer for satisfactory completion of design work.	1	Lot		
	sompresson of assign works		l l	Sub Total 1.1	
1.2	Design Works (Civil)				
Complete	e Civil Design of New Substation as Specified in Scope and Employe	ers Regu	irements	including but not li	mited to:
1.2.1	Geotechnical investigation data and drawings including on-site	1	Lot		
	support during excavation and compaction.				
1.2.2	Hydrological study to carryout a flood risk assessment	1	Lot		
1.2.3	Surveying and benchmarking design and drawings including on-site	1	Lot		
	support during site preparation.	-			
1.2.4	Substation Design in Civil, Structural, Mechanical and Architectural, such as foundation works, hot dip galvanised steel supporting structures for all outdoor electrical equipment, other civil works like boundary wall etc., substation buildings, roads, cable trenches, water drainage system, oil containment chamber and sump pit, fire walls etc. of new substation complete in all respect.	1	Lot		
1.2.5	Design of rail tracks for movement of power transformers on the	1	Lot		
	reinforced concrete foundations.				
1.2.6	Any Architectural-Related Calculations and Analysis	1	Lot		
1.2.7	Any Mechanical-Related Calculations and Analysis	1	Lot		
1.2.8	Any other design work not specifically mentioned above but deemed necessary or as required by Engineer/Employer for satisfactory completion of design work.	1	Lot	Cul. T. 4-14 2	
	ra .	tal (C	: ad 6	Sub Total 1.2	
		tai (Carr	iea iorwa	rd to Grand SC-5)	
	Name of Bidder:				
	Signature of Bidder:				

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations Price Schedule

Breakdown of Rates and Prices Schedule No. 2. Plant, Goods and Equipment(Including Mandatory Spare Parts) Supplied Item No. Description Unit Unit Rate (b) Total Price (c) Otv. US\$ US\$ DDP plus all related cost as defined in foot note 2 3 (1) x (3)AIS HV and MV Equipment 2.1  $167 \text{ MVA}, (400/\sqrt{3/220}/\sqrt{3/33}) \text{ kV}, \text{ Single Phase Auto-}$ 2.1.1Nos Transformer with OLTC, RTCC Facility, Surge protection arrangement (AIS) for HV, IV and LV side and with Bushing CT complete with all accessories as specified Capacitor Voltage Transformer (CVT) 400kV, Single 18 2.1.2 Nos Phase 2 Windings, Secondary Voltage 110V, Accuracy 0.2, Min Burden 50VA, Application Metering 2.1.3 Current Transformer (CT), 400kV, Single Phase, Live 18 Nos Type, 3 Core, 2000-1000-500/1A, Class 0.2, Rated Output 15VA 2.1.4 Current Transformer (CT), 72.5kV, Single Phase 6 Nos 2 Windings 2.1.5 400kV Surge Arrester (SA), Zinc Oxide 18 Nos 366 kV Rated Voltage, 20kA, 12kJ/kV Station Service Transformer, 630 kVA, 33/0.4kV 2 Nos 30kV,10kA Lightning arrester for 33kV line bays 6 Nos 30kV,10kA Lightning arrester for 33/0.4kV station service 6 Nos transformers 72.5kV Double Break Isolator, Single Phase Lot 72.5kV Circuit Breaker, Three Phase, 50Hz. 2 Nos 72.5kV Current Transformer 6 Nos. 400kV Bus Support Post Insulator Lot 1 220kV Bus Support Post Insulator Lot 72.5kV Bus Support Post Insulator 1 Lot .1.15 Suspension/Tension Insulator Strings, Including Hardware 1 Lot 2.1.16 Other necessary works as per Employer's Requirement and Lot Conditions of Contract, if any, not included above (specify) Sub Total 2.1 2.2 Hot-Dip Galvanized Steel 2.2.1 Gantry Column for 400 kV Incoming Line Nos 2.2.2 Gantry Girder for 400 kV Incoming Lin-6 Nos Support Structure for 400 kV Current Transformer 2.2.3 18 Nos 2.2.4 Support Structure for 400 kV Capacitive Voltage 18 Nos Transformer 2.2.5 Support Structure for 400 kV Surge Arrester 18 Nos 2.2.6 Support Structure for 400 kV Bus Support Lot 2.2.7 Support Structure for 220 kV Bus Support 1 Lot Support Structure for 72.5 kV Current Transformer 2.2.8 6 Nos 2.2.9 Support Structure for 72.5 kV Bus Support or Pot Head 1 Lot Support Structure for 72.5 kV Single Switch Stand 2.2.10 1 Lot 2.2.11 Support Structure for 30kV Lightning Arrestor 12 Nos 2.2.12 Structures for Lightning Mast and other Lighting structures Lot 2.2.13 Other necessary works as per Employer's Requirement and Lot Conditions of Contract, if any, not included above (specify) Sub Total 2.2 2.3 **Bus Bar and Overhead Connections** 2.3.1 Lot 5" AL. Tubular Bus Bar 1 141.30mm Outer Diameter, 9.53mm Thickness 2.3.2 Bus bar Connectors and Hardware 1 (Tube to NEMA Pads, Bus Supports, etc..) 2.3.3 Bare Cond. ACSR 1 Lot 54 Strand 3.53mm AL 7 Strands 3.53mm Steel 2.3.4 Other necessary works as per Employer's Requirement and 1 Lot Conditions of Contract, if any, not included above (specify) Sub Total 2.3 2.4 LV Control and Power Cable 2.4.1 LV Control Cables Lot 2.4.2 LV Power Cables Lot 2.4.3 Cable Installation Accessories Lot (Cable Gland, Labels Terminal Strips, etc..)

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Price Schedule

Breakdown of Rates and Prices Schedule No. 2. Plant, Goods and Equipment(Including Mandatory Spare Parts) Supplied						
Item No.	Description	Qty.	Unit	Unit Rate (b)	Total Price (c)	
				US\$	US\$	
				DDP plus all		
				related cost as		
				defined in foot		
				note		
		1	2	3	(1) x (3)	
2.4.4	XLPE Power Cable, 33kV (from LV side of the Auto	1	Lot			
	transformer to 33kV line bay arrangement)					
2.4.5	33 kV Cable Pothead	1	Lot			
2.4.6	Power Cable for Filter Plant (Transformer) 3.5CX240	1	Lot			
	sq.mm. (Armoured, PVC Insulated) with suitable					
	termination arrangement all complete					
2.4.7	Cable carriers (trays, conduits, ducts) for routing the HV &	1	Lot			
	LV power, control, instrumentation and communication					
	interface cables.					
2.4.8	Other necessary works as per Employer's Requirement and	1	Lot			
20	Conditions of Contract, if any, not included above (specify)	-	200			
	pendinons of continues, if any, not included ucove (speenly)			Sub Total 2.4		
2.5	AC AND DC STATION SUPPLY					
2.5.1	400 V AC Main Switch Board					
2.5.1.1	400V Switchgear with Automation Controls,	3	Nos			
	1000A CB and 2 Current Transformers					
2.5.1.2	400V Switchgear with Automation Controls,	1	Nos			
	630A CB and 2 Current Transformers					
2.5.1.3	Distribution panel Bus-A,	1	Nos			
	400V, 3 Phase, 1000A, 20kA for 1Sec.					
	(5) 400A Breakers, (1) Potential Transformer					
2.5.1.4	Distribution panel Bus-B,	1	Nos			
-	400V, 3 Phase, 1000A, 20kA for 1Sec.					
	(6) 400A Breakers, (1) Potential Transformer					
2.5.2	400 V AC Main Lighting Board					
2.5.2.1	100kVA Lighting Transformer	2	Nos			
2.5.2.2	Distribution panel, 400V, 3 Phase, 4 Wire, 20kA, 1Sec.	1	Nos			
2.0.2.2	Bus-A (4) 63A, (1) 400A Breakers,	-	1105			
	Bus-B (4) 63A, (1) 400A Breakers,					
	Bus-C (5) 63A					
	TIE A-B 400A breaker, TIE B-C 400A Breaker					
2.5.3	400 V AC Emergency Lighting Distribution Board					
2.5.3.1	100kVA Lighting Transformer	1	Nos			
2.5.3.1	Distribution panel Bus-A	1	Nos			
2.3.3.4	400V, 3 Phase, 4 Wire, 20kA, 1Sec.	1	1105			
	(5) 63A, (1) 400A 4 Pole Breakers,					
2.5.3.3	TIE A-B 100A Breaker	1	Naa			
2.3.3.3	Distribution panel Bus-B	1	Nos			
	400V, 3 Phase, 4 Wire, 20kA, 1Sec.					
<u> </u>	(3) 63A, (1) 400A 4 Pole Breakers					

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Price Schedule

Breakdown of Rates and Prices Schedule No. 2. Plant, Goods and Equipment(Including Mandatory Spare Parts) Supplied Unit Rate (b) Item No. Description Qty. Unit Total Price (c) US\$ US\$ DDP plus all related cost as defined in foot note 1 2 3 (1) x (3)2.5.4 400 V AC Distribution Board 2.5.4.1 400V Switchgear with Automation Controls, Nos 1000A CB and 2 Current Transformers 2.5.4.2 400/110V, 50VA, Potential Transformer 3 Nos 2.5.4.3 400/1A Current Transformer, Class 5P20 1 Nos 2.5.4.4 1 Nos 400V Switchgear with Automation Controls, 630A with 2 Current Transformers 2.5.4.5 400v Distribution panel Bus-A Nos 1 (1) 400A, (4) 100A, (8) 63A, (2) 32A 4 Pole Breakers, (14) 63A, (8) 32A 2 Pole Breakers TIE A-B 400A Breaker 2.5.4.6 400v Distribution panel Bus-B 1 Nos (1) 400A, (3) 100A, (8) 63A 4 Pole Breakers (14) 63A, (5) 32A 4 Pole Breakers 2.5.5 400 V AC AMF Panel 2.5.5.1 400/1A Current Transformer, Class 1 3 Nos 2.5.5.2 400/1A Current Transformer, Class 5P20 1 Nos 2.5.6 DC Chargers and Batteries 2.5.6.1 6 220V Battery Charger (Float/Boost) Nos 2.5.6.2 48V Battery charger (Float/Boast) 6 Nos 2.5.6.3 250A Throw over Switch, Interlock 12 Nos Battery, 220Vdc, 108 Minimum Cells 2.5.6.4 4 Nos Battery, 48Vdc, 24 Minimum Cells 2.5.6.5 4 Nos 2.5.7 **DC Distribution Boards** Distribution panel, 220V, 400A, 4kA for 1 Sec. 50 2.5.7.1 6 Nos positions 2.5.7.2 Distribution panel, 48V, 400A, 4kA for 1 Sec. 50 positions 4 Nos 2.5.7.3 DC Fuse Box, 220Vdc Lot 2.5.7.4 DC Fuse Box, 48Vdc Lot Other Equipment 2.5.8 Diesel Generator Set, 250kVA (Including Fuel Tank) and Nos 2.5.8.1 all accessories 2.5.9 Other necessary works as per Employer's Requirement and Lot Conditions of Contract, if any, not included above (specify) Sub Total 2.5 2.6 400 kV Gas Insulated Switchgear (1-1/2 breaker arrangement) Line/Feeder Bay-400 kV SF6 Circuit Breaker, 400kV, 4000A, 50kA, Three Pole 2.6.1.1. 10 2.6.1.2 Current Transformer Modules, three cores, 400kV, single-20 Nos phase, Three-phase set (1 set = 3 single phase)2.6.1.3 Circuit Breaker Isolating Disconnect Switches, 400kV, 20 Nos 4000A, 50kA, Single-phase, Three-phase set (1 set = 3 single phase)2.6.1.4 Circuit Breaker Maintenance Earthing Switches, 400kV, 20 Nos 50kA, Single-phase, Three-phase set (1 set = 3 single 2.6.1.5 Line/Feeder High Speed Earthing Switches, with 10 Nos removable earthing link 400kV, 50kA, single-phase, threephase set (1 set = 3 single phase)2.6.1.6 Voltage Transformers, 400kV, dual secondary, with 10 Nos earthing link, Single-phase, Three-phase set (1 set = 3 2.6.1.7 Line/Feeder Disconnect Switches, 400kV, 4000A, 50kA, 10 Nos Single-phase, Three-phase set (1 set = 3 single phase)2.6.1.8 Line/Feeder Maintenance Earthing Switches, 400kV, 10 Nos 50kA. 2.6.1.9 Bay Local Control Cabinet including (device controls, 10 Nos

10

Nos

instrumentation, interlocking, annunciation, gas density

Partial Discharge Monitoring System including monitoring

monitoring, circuit breaker monitoring)

sensors and diagnostic equipment (per bay)

2.6.1.10

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations Price Schedule

	wn of Rates and Prices Schedule No. 2. Plant, Goods and		_		
Item No.	Description	Qty.	Unit	Unit Rate (b) US\$	Total Price (c ) US\$
				DDP plus all related cost as defined in foot note	
		1	2	3	(1) x (3)
2.6.1.11	LV control and power cable connections from Local	1	Lot	3	(1) x (3)
2.0.1.11	Control Cabinet to all GIS equipment/devices	1	Lot		
2.6.1.12	All metallic structures and supports required for GIS	1	Lot		
	complete with accessories				
2.6.1.13	All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices	1	Lot		
2.6.1.14	Gas Insulated bus (GIB) with required GIS Termination	10	Bays		
	along with supports for GIB run for whole Line/Feeder Bay (Three phase set)				
2.6.2	Transformer Bay-400 kV				
2.6.2.1	SF6 Circuit Breakers, 400kV, 4000A, 50kA, three-pole, with Control Point on Wave Switching Device	4	Nos		
2.6.2.2	Current Transformer Modules, Three cores, 400kV,	8	Nos		
	Single-phase, Three-phase set $((1 \text{ set} = 3 \text{ single phase}))$				
2.6.2.3	Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase, three-phase set (1 set = 3	8	Nos		
	single phase)				
2.6.2.4	Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA,Single-phase, Three-phase set(1 set = 3 single phase)	8	Nos		
2.6.2.5	Line/Feeder High Speed Earthing Switches, with	3	Nos		
2.0.2.3	removable earthing link 400kV, 50kA, Single-phase, Three- phase set (1 set = 3 single phase)	3	1105		
2.6.2.6	Voltage Transformers, 400kV, dual secondary, earthing	3	Nos		
	link, single-phase, three-phase set(1 set = 3 single phase)				
2.6.2.7	Transformer Disconnect Switches, 400kV, 4000A, 50kA,	6	Nos		
	Single-phase, Three-phase set (1 set = 3 single phase)				
2.6.2.8	Transformer Maintenance Earthing Switches, 400kV,	6	Nos		
2 ( 2 0	50kA, single-phase, three-phase set (1 set = 3 single phase)	- 4	3.7		
2.6.2.9	Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density	4	Nos		
	monitoring, circuit breaker monitoring)				
2.6.2.10	Partial Discharge Monitoring System including monitoring	4	Nos		
	sensors and diagnostic equipment (per bay)				
2.6.2.11	LV control and power cable connections from Local	1	Lot		
	Control Cabinet to all GIS equipment/devices				
2.6.2.12	All metallic structures and supports required for GIS	1	Lot		
2.6.2.13	complete with accessories All walkways, platforms, stairs, ladders and accessories	1	Lot		
2.0.2.13	required for access to all GIS devices	1	Lot		
2.6.2.14	Isolating & Earthing Switches, 400kV, 4000A, 50kA	3	Set		
	Single phase, and Auxiliary Gas Insulated Bus (GIB) for				
	Spare Transformer Operation, GIS to AIS Bushing				
	termination, jumpers, required CT, Al. tube, metering,				
	control and protection as required all complete. 33kV				
2 ( 2 15	isolators, 33kV cables, jumpers as required all complete	2	D		
2.6.2.15	Three Single Phase Gas Insulated bus (GIB) and required GIS Termination Bushing along with supports for GIB run	3	Bays		
	for whole Transformer Bay Lot				
2.6.3	Diameter Middle Breaker Bay-400 kV				
2.6.3.1	Proposed SF6 Diameter middle Circuit Breakers associated	4	Nos		
	with Line Feeder, 400kV, 4000A, 50kA, three-pole				
2.6.3.2	Proposed SF6 Diameter middle Circuit Breakers associated	2	Nos		
	with Auto Transformer and Line Feeder, 400kV, 4000A,				
	50kA, three-pole, with Control Point on Wave Switching				
2.6.3.3	Device  Current Transformer Modules Three cores 400kV	12	Non		
2.0.3.3	Current Transformer Modules, Three cores, 400kV, Single-phase, Three-phase set ((1 set = 3 single phase)	12	Nos		
2.6.3.4	Circuit Breaker Isolating Disconnect Switches, 400kV,	12	Nos		
	4000A, 50kA, single-phase, three-phase set (1 set = 3				
	single phase)				
					<del></del>

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations Price Schedule

Breakdown of Rates and Prices Schedule No. 2. Plant, Goods and Equipment(Including Mandatory Spare Parts) Supplied Item No. Description Unit Unit Rate (b) Total Price (c) Otv. US\$ US\$ DDP plus all related cost as defined in foot note 1 3 (1) x (3)2.6.3.5 Circuit Breaker Maintenance Earthing Switches, 400kV, 12 Nos 50kA, Single-phase, Three-phase set (1 set = 3 single phase) 2.6.3.6 Bay Local Control Cabinet including (device controls, 6 Nos instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring) 2.6.3.7 Partial Discharge Monitoring System including monitoring 6 Nos sensors and diagnostic equipment (per bay) 2.6.3.8 LV control and power cable connections from Local 1 Lot Control Cabinet to all GIS equipment/devices 2.6.3.9 All metallic structures and supports required for GIS 1 Lot complete with accessories All walkways, platforms, stairs, ladders and accessories 2.6.3.10 1 Lot required for access to all GIS devices Gas Insulated BUSBAR 2.6.4 2.6.4.1 400kV, Double Bus Bar of 3 single phase (isolated), SF6 Diameter gas insulated, metal enclosed 4000A bus bars each enclosed in three individual bus enclosures per diameter 2.6.4.2 Voltage Transformers, 400kV, dual secondary, single-2 Nos phase, three-phase set ((1 set = 3 single phase))Main Bus Bar High Speed Earthing Switches, with 2.6.4.3 2 Nos removable earthing link 400kV, 50kA, Single-phase, Threephase set (1 set = 3 single phase)2.6.4.4 Main Bus Bar Earthing Switches, with removable earthing 2 Nos link 400kV, 50kA, Single-phase, Three-phase set (1 set = 3 single phase) Bus Bar Isolating Disconnect Switches, 400kV, 4000A, 2 2.6.4.5 Nos 50kA, single-phase, three-phase set ((1 set = 3 single 2.6.5 Other necessary works as per Employer's Requirement and Lot Conditions of Contract, if any, not included above (specify) Sub Total 2.6 2.7 220kV Gas Insulated Switchgear (1-1/2 breaker arrangement) 2.7.1 Line/Feeder Bay-220 kV 2.7.1.1 SF6 Circuit Breaker, 220kV, 4000A, 50kA, Three Pole 8 Nos 2.7.1.2 Current Transformer Modules, three cores, 220kV, single-16 Nos phase, three-phase set ((1 set = 3 single phase))2.7.1.3 Circuit Breaker Isolating Disconnect Switches, 220kV, 16 Nos 4000A, 50kA, single-phase, three-phase set (1 set = 3 single phase) 2.7.1.4 Circuit Breaker Maintenance Earthing Switches, 220kV, 16 Nos 50kA, single-phase, three-phase set (1 set = 3 single phase) 2.7.1.5 Line/Feeder High Speed Earthing Switches, with 8 Nos removable earthing link 220kV, 50kA, single-phase, threephase set (1 set = 3 single phase)Voltage Transformers, 220kV, dual secondary, with 2.7.1.6 8 Nos earthing link, single-phase, three-phase set (1 set = 3 single 2.7.1.7 Line/Feeder Disconnect Switches, 220kV, 4000A, 50kA, 8 Nos single-phase, three-phase set (1 set = 3 single phase)2.7.1.8 Line/Feeder Maintenance Earthing Switches, 220kV, 8 Nos 50kA, single-phase, three-phase set 2.7.1.9 Bay Local Control Cabinet including (device controls, 8 Nos instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring) 2.7.1.10 Partial Discharge Monitoring System including monitoring 8 Nos sensors and diagnostic equipment (per bay) LV control and power cable connections from Local 1 Lot Control Cabinet to all GIS equipment/devices 2.7.1.12 All metallic structures and supports required for GIS 1 Lot complete with accessories 2.7.1.13 All walkways, platforms, stairs, ladders and accessories 1 Lot required for access to all GIS devices

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations Price Schedule

Breakdo	wn of Rates and Prices Schedule No. 2. Plant, Goods and				
Item No.	Description	Qty.	Unit	Unit Rate (b) US\$	Total Price (c ) US\$
				DDP plus all	
				related cost as	
				defined in foot	
				note	
		1	2	3	(1) x (3)
2.7.1.14	Three Single Phase Gas Insulated bus (GIB) and required	8	Bays		, , , ,
	GIS Termination along with supports for GIB run for the	_	,		
	whole Line/Feeder				
2.7.2	Transformer Bay-220 kV				
2.7.2.1	SF6 Circuit Breakers, 220kV, 4000A, 50kA, three-pole.	6	Nos		
2.7.2.2	Current Transformer Modules, three cores, 220kV, single-	12	Nos		
2.1.2.2	phase, three-phase set	12	1105		
2.7.2.3	Circuit Breaker Isolating Disconnect Switches, 220kV,	12	Nos		
2.1.2.3	4000A, 50kA, single-phase, three-phase set	12	INOS		
2.7.2.4	Circuit Breaker Maintenance Earthing Switches, 220kV,	12	Nos		
2.7.2.4	50kA, single-phase, three-phase set	12	INOS		
2.7.2.5	Transformer High Speed Earthing Switches, with	5	Nos		
2.1.2.3		3	INOS		
2726	removable earthing link 220kV, 50kA, single-phase, three-	-	N.		
2.7.2.6	Voltage Transformers, 220kV, dual secondary, with	5	Nos	1	
2727	earthing link, single-phase, three-phase set		N.T.	1	
2.7.2.7	Transformer Disconnect Switches,220kV, 4000A, 50kA,	8	Nos	1	
2.5.2.0	single-phase, three-phase set	0	3.7		
2.7.2.8	Transformer Maintenance Earthing Switches, 220kV,	8	Nos		
	50kA, single-phase, three-phase set				
2.7.2.9	Bay Local Control Cabinet including (device controls,	6	Nos		
	instrumentation, interlocking, annunciation, gas density				
	monitoring, circuit breaker monitoring)				
2.7.2.10	Partial Discharge Monitoring System including monitoring	6	Nos		
	sensors and diagnostic equipment (per bay)				
2.7.2.11	LV control and power cable connections from Local	1	Lot		
	Control Cabinet to all GIS equipment/devices		_		
2.7.2.12	All metallic structures and supports required for GIS	1	Lot		
2.7.2.12	complete with accessories	1	T /		
2.7.2.13	All walkways, platforms, stairs, ladders and accessories	1	Lot		
27214	required for access to all GIS devices	2	G .		
2.7.2.14	Isolating & Earthing Switches, 220kV, 4000A,	3	Set		
	50kA,Single phase, and Gas Insulated Bus (GIB) for Spare				
	Transformer, with auxiliary Bus, GIS to AIS Bushing				
	termination, jumpers, required CT, Al. tube, metering,				
2.7.2.15	control and protection as required all complete.		ъ		
2.7.2.15	Three Single Phase Gas Insulated Bus (GIB) and required	6	Bays		
	GIS Termination along with supports for GIB run for the				
2 = 2	whole Transformer Bay				
2.7.3	Middle Diameter Breaker Bay -220 kV	-	2.7		
2.7.3.1	SF6 Circuit Breakers, 220kV, 4000A, 50kA, three-pole.	6	Nos		
2.7.3.2	Current Transformer Modules, three cores, 220kV, single-	12	Nos	1	
2722	phase, three-phase set	10	NT.	1	
2.7.3.3	Circuit Breaker Isolating Disconnect Switches, 220kV,	12	Nos		
2724	4000A, 50kA, single-phase, three-phase set	12	N.T.	1	
2.7.3.4	Circuit Breaker Maintenance Earthing Switches, 220kV,	12	Nos		
2 7 2 5	50kA, single-phase, three-phase set		3.7		
2.7.3.5	Bay Local Control Cabinet including (device controls,	6	Nos		
	instrumentation, interlocking, annunciation, gas density				
2.7.2.5	monitoring, circuit breaker monitoring)	_	3.7	1	
2.7.3.6	Partial Discharge Monitoring System including monitoring	6	Nos	1	
	sensors and diagnostic equipment (per bay)		_		
2.7.3.7	LV control and power cable connections from Local	1	Lot		
2.7.2.0	Control Cabinet to all GIS equipment/devices				
2.7.3.8	All metallic structures and supports required for GIS	1	Lot	1	
2720	complete with accessories	1	т.		
2.7.3.9	All walkways, platforms, stairs, ladders and accessories	1	Lot		
274	required for access to all GIS devices	-		-	
2.7.4	Gas Insulated Bus Bars	<u> </u>	<u> </u>	1	

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations Price Schedule

Breakdown of Rates and Prices Schedule No. 2. Plant, Goods and Equipment(Including Mandatory Spare Parts) Supplied Item No. Description Unit Unit Rate (b) Total Price (c) Otv. US\$ US\$ DDP plus all related cost as defined in foot note 1 3 (1) x (3)2.7.4.1 220kV, Double 3 single phase (isolated), SF6 gas insulated Diameter metal enclosed 4000A bus bars each enclosed in three individual bus enclosures per diameter 2.7.4.2 Voltage Transformers, 220kV, dual secondary, single-2 Nos phase, three-phase set 2.7.4.3 Main Bus Bar High Speed Earthing Switches, with 2 Nos removable earthing link 220kV, 50kA, Single-phase, Three phase set 2.7.4.4 Bus Bar Isolating Disconnect Switches, 220kV, 4000A, 2 Nos 50kA, single-phase, three-phase set (1 set = 3 single phase) 2.7.5 Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify) Sub Total 2.7 Complete with control & protection up to GIB sealing end for all Feeder 2.8 2.8.1 Complete set of Control and Protection panels for 400 kV station as 2.8.1.1 Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel) 2.8.1.2 Line Protection Panel (Note: line protection should include 12 Nos tele protection terminals) 2.8.1.3 4 Transformer Protection Panel Nos Auto Trans Bay 1=1no, Auto Trans Bay 2=1no) 2.8.1.4 400kV (Double Bus Bar Protection) 2 Set 2.8.1.5 Miscellaneous Relay and Control Equipment, not included Lot above 2.8.2 Complete set of Control and Protection panels for 220 kV station as 2.8.2.1 Circuit Breaker Relay Panel (Note: BCU should be Nos included in the relay panel) 2.8.2.2 Transformer Protection Panel 4 Nos Auto Trans Bay 1=1no,Auto Trans Bay 2=1no) 220kV (Double Bus Bar Protection) 2.8.2.3 Set 2.8.2.4 Miscellaneous Relay and Control Equipment, not included 2.8.3 Complete set of Control and Protection panels for 33 kV station as 2.8.3.1 Circuit Breaker Relay Panel (Note: BCU should be 2 Nos included in the Relay Panel) 2.8.3.2 Transformer Protection Panel Nos 2 2.8.3.3 Miscellaneous Relay and Control Equipment, not included Lot Substation Automation & Metering System 2.8.4 2.8.4.1 SAS Operator Station for control of 400/220/33 kV 1 Set 2.8.4.2 Substation Automation System (SAS) for 400 kV System 7 Set per diameter 2.8.4.3 Substation Automation System (SAS) for 220kV System Set per diameter 2 2.8.4.4 Substation Automation System (SAS) for 33kV System per Set 2.8.4.5 Substation Automation System (SAS) for Auxiliary System Set 2.8.4.6 Integration of all 400/220kV Bays under present scope with Lot the SCADA of SIEMENS (SINAUT Spectrum) at Load Dispatch Centre, Kathmandu including supply of Hardware, Software, accessories etc. complete as per Technical Specification. Telecommunication system for Ratmate 2.8.4.7 1 Lot 2.8.4.8 Fibre Optic SDH System 1 Lot 2.8.4.9 Phone System 1 Lot 2.8.4.10 400 kV Metering 1 Lot 2.8.4.11 220kV Metering 1 Lot Miscellaneous Relay and Control Equipment, not included Lot Sub Total 2.8 2.9 **Grounding System** 

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations Price Schedule

Breakdown of Rates and Prices Schedule No. 2. Plant, Goods and Equipment(Including Mandatory Spare Parts) Supplied Item No. Description Unit Unit Rate (b) Total Price (c) Otv. US\$ US\$ DDP plus all related cost as defined in foot note 1 3 (1) x (3)2.9.1 Stranded Bare Copper 240 Sq. mm\*\*\* Grid Lot 1 (Including Fusion and Mechanical Connectors) 2.9.2 Grounding Rods 1 Lot 2.9.3 Embedded Grounding System - 400kV GIS 1 Lot (Including Connections to GIS metallic Structures, Supports and Walkways/Platforms) 2.9.4 Embedded Grounding System - 220kV GIS 1 Lot (Including Connections to GIS metallic Structures, Supports and Walkways/Platforms) Embedded Grounding System - Control Room 2.9.5 1 Lot 2.9.6 Other necessary works as per Employer's Requirement and Lot Conditions of Contract, if any, not included above (specify) Sub Total 2.9 2.10 **Lightning Protection System** Overhead Galvanized Steel Wire, Including Hardware 2.10.1 Lot 2.10.2 Lightening Mast as required for total protection of 1 Lot 2.10.3 Other necessary works as per Employer's Requirement and 1 Lot Conditions of Contract, if any, not included above (specify) Sub Total 2.10 2.11 Firefighting System 2.11.1 Fire protection/detection for 7 (Seven) auto transformers Lot Fire protection/detection for 400kV GIS Building 2.11.2 1 Lot Fire protection/detection for 220kV GIS Building 2.11.3 1 Lot 2.11.4 Fire protection/detection for Control House Lot 2.11.5 Fire protection/detection system for pump house building Lot Fire protection/detection system for generator diesel tank 2.11.6 Lot 2.11.7 Portable fire extinguishers Lot Clean-agent fire extinguishers 2.11.8 Lot Other necessary works as per Employer's Requirement and 2.11.9 Conditions of Contract, if any, not included above (specify) Sub Total 2.11 2.12 **HVAC And Ventilation Systems** 2.12.1 400kV GIS Building HVAC and Ventilation Systems Lot 2.12.2 220kV GIS Building HVAC and Ventilation Systems Lot 1 2.12.3 Control House HVAC and Ventilation Systems Lot Sub Total 2.12 Accessories and Ancillary Material Junction and marshalling boxes, outdoor Junction and marshalling boxes, indoor Lot 2.13.3 Outdoor lighting, including lighting fixtures Lot .13.4 Indoor lighting, including lighting fixtures Lot Control Cabinet for outdoor lighting Lot 2.13.6 Rail tracks for movement of power transformers on the Lot reinforced concrete foundations all complete. 2.13.7 Lot Electric Overhead Travelling Crane for installation and removal of GIS Equipment (For 400 and 220 kV each) 2.13.8 Visual Monitoring System Lot Other necessary works as per Employer's Requirement and Lot Conditions of Contract, if any, not included above (specify Sub Total 2.13 2.14 Mandatory Maintenance, Repair tools and Testing Instruments 2.14.1 **GIS Equipment** 2.14.1.1 400kV GIS SF6 leakage detector, analyzer and processing 1 Lot unit all complete 2.14.1.2 220kV GIS SF6 leakage detector, analyzer and processing 1 Lot unit all complete 400kV GIS Wrenches and tools Lot 2.14.1.4 220kV GIS Wrenches and tools 1 Lot 400kV GIS Pressure gauge Nos 2.14.1.6 220kV GIS Pressure gauge 1 Nos 400kV GIS Gas sampling and moisture meter Nos

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations

Price Schedule

Breakdown of Rates and Prices Schedule No. 2. Plant, Goods and Equipment(Including Mandatory Spare Parts) Supplied Unit Rate (b) Item No. Description Qty. Unit Total Price (c) US\$ US\$ DDP plus all related cost as defined in foot note 1 3 (1) x (3)2.14.1.8 220kV GIS Gas sampling and moisture meter Nos 1 400kV GIS Micro-Ohmmeter 1 Nos 220kV GIS Micro-Ohmmeter Nos 2.14.1.11 400kV GIS Circuit-breaker, timing tester Nos 2.14.1.12 220kV GIS Circuit-breaker, timing tester 1 Nos 2.14.1.13 400kV GIS Laptop computer with specialized software Nos 1 for GIS setting and monitoring 220kV GIS Laptop computer with specialized software 2.14.1.14 1 Nos for GIS setting and monitoring Complete set of SF6 gas service cart mounted on a trailer Lot for mobile application. SF6 gas refilling cart equipped with 1 SF6 gas cylinder and the necessary instruments and adapters for easy and quick gas refilling in case of losses 2.14.1.16 HV Test Bushing for GIS 1 Lot 2.14.1.17 Online Partial Discharge Monitoring System 1 Nos 2.14.2 Auto Transformer & Station Service Transformer 2.14.2.1 Oil-treatment unit 6000lph along with suitable size and 1 Nos quantity of connection arrangement (MCCB (240-300 Amp),terminal lugs etc.) all complete (autotransformer) Oil dielectric tester Nos 2.14.2.3 Dielectric tester based on tan  $\delta$  and dielectric losses, 10 kV 1 Nos 2.14.2.4 Megger, electronic, 5 kV 1 Nos 2.14.2.5 Wrenches and tools 1 Lot 2.14.3 Complete set of Control and Protection for Sub-Station 2.14.3.1 Relay Test kit 1 Lot Test Equipment & tools for SAS SYSTEM for measuring, Lot configuration & diagnostics. Sub Total 2.14 2.15 **Mandatory Spare Parts** 2.15.1 **HV Equipment** Unit of 400kV surge arrester, complete with grading ring, 2.15.1.1 2 Nos terminals and surge counter 2.15.1.2 Capacitive voltage transformer, 400kV Nos 1 2.15.1.3 Current transformer, 400kV 1 Nos 2.15.1.4 Current transformer, 72.5kV Nos Auto Transformer 2.15.2.1 Complete set of gaskets with grease, for cover, manholes, 2 Lot hand holes, and pipping fittings. 2.15.2.2 Lot of LV control and protective components, minimum 2 Lot one unit of each type of components used 2.15.2.3 Pressure relief device, complete with accessories 2 Nos Bushings, one complete unit of each type used, with 2 2.15.2.4 Lot accessories 2 2.15.2.5 Current transformer, one unit of each type Lot 2 Oil-circulating pump with motor, complete with accessorie Nos Cooling fan, complete with motor 2 Nos 2.15.2.8 Buchholz relay, complete (2 each for main tank and OLTC 4 Nos tank) 2.15.2.9 One instrument of each type used (temperature, oil level, 2 pressure vent, etc.) 2.15.2.10 One valve of each type used 2 Lot 2.15.2.11 Insulating oil, 5% of the volume used 1 Lot 2.15.2.12 Silica gel, quantity for one load 1 Lot 2 2.15.2.13 Tap changer diverter switch, spare contacts and transition Lot

2

2

Lot

Lot

Lot

resistance

2.15.2.15 Rolls of Kraft insulating paper

2.15.2.16 LA for HV,IV and LV side each

2.15.2.14 Tap changer selector switch spare contacts

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations

Price Schedule

Breakdown of Rates and Prices Schedule No. 2. Plant, Goods and Equipment(Including Mandatory Spare Parts) Supplied Item No. Description Unit Unit Rate (b) Total Price (c) Qty. US\$ US\$ DDP plus all related cost as defined in foot note 1 3 (1) x (3)2.15.2.17 Additional spare parts as per Chapter 3: Auto Transformer Specification of Part 2: Employer's Requirements, Section V – B1 (Technical Specifications). 2.15.3 630kVA Transformer All Bushing with metal parts (each voltage rating) for 630 2.15.3.1 1 Lot kVA Transformer Oil Temperature Indicator with sensing device Lot 2.15.3.3 Tap Changer Contacts 1 Lot 2.15.3.4 Buchholz Relay Nos 1 Explosion vent diaphragm 2.15.3.5 Nos Set of valve (each type) Lot 2.15.3.7 3-Phase 11 kV Horn Gap Fuse 1 Lot 2.15.4 Other necessary works as per Employer's Requirement and Lot Conditions of Contract, if any, not included above (specify) Sub Total 2.15 2.16 Spare Parts for AC and DC Station Supply 2.16.1 Spare for LV Switchgear 2.16.1.1 LV circuit breaker, complete, with CT's and protection Lot Outgoing thermomagnetic breakers - one unit of each type Lot used 2.16.1.3 Metering - one instrument of each type used 1 Lot Protection (other than included in LV breaker) Lot One unit of each type used 2.16.1.5 Automatic Transfer Switch 1 Nos One complete controller including sensors 2.16.1.6 One or 5% of loose material 1 Lot Auxiliary relays, contactors, fuses, terminals, etc 2.16.2 Spare for DC Distribution Panels 2.16.2.1 Thermomagnetic breakers 1 Lot one unit of each type used 2.16.2.2 Metering - one metering instrument of each type used 1 Lot 2.16.2.3 Protection (other than included in LV breaker) 1 Lot One unit of each type used 2.16.2.4 One or 5% of loose material 1 Lot Auxiliary relays, contactors, fuses, terminals, etc 2.16.3 **Spare for Diesel Generator Set** 2.16.3.1 Replaceable elements for air filter 2.16.3.2 Replaceable elements for oil filter 1 Nos 2.16.3.3 Replaceable elements for fuel filter 1 Nos 2.16.3.4 Complete set of injectors 1 Nos 2.16.3.5 Fuel injector pump 1 Nos 2.16.3.6 Oil pump 1 Nos 2.16.3.7 Intake valves 1 Nos 2.16.3.8 1 Nos Seats for intake valves 2.16.3.9 Exhaust valves Nos 2.16.3.10 Set for exhaust valves 1 Nos Nos 2.16.3.11 Disconnect switch, with grounding blades, 220 kV, 3 Ø 1 2.16.3.12 Set of pistons Nos 2.16.3.13 Set of complete bearings of the engine 2.16.3.14 Set of all gaskets needed for the engine 1 Nos 2.16.3.15 Set of thermostats 1 Nos 2.16.3.16 Set of bearings for the alternator 1 Nos 2.16.3.17 Set of control cards, at least one unit of each type used 1 Lot 2.16.3.18 Diodes and thyristors of each type used 3 Nos 2.16.3.19 Lamp, one unit of each type used 10 Nos 2.16.3.20 Auxiliary relay, one unit of each type used 1 Lot 2.16.3.21 Multifunction metering instrument 1 Nos 2.16.3.22 Voltage and speed regulator component and actuator 1 Nos 2.16.3.23 Controller components 1 Nos 2.16.3.24 Instrument, detectors Nos

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations

Price Schedule

Breakdown of Rates and Prices Schedule No. 2. Plant, Goods and Equipment(Including Mandatory Spare Parts) Supplied Item No. Description Unit Unit Rate (b) Total Price (c) Otv. US\$ US\$ DDP plus all related cost as defined in foot note 1 2 3 (1) x (3)2.16.4 Spare for Batteries One unit of battery used in 220 V DC system 2.16.4.1 Nos 2.16.4.2 Loose parts for 220 V DC - connection elements, cables, Lot links, etc. 2.16.4.3 One unit of battery used in 48 Vdc system Nos 1 2.16.4.4 Loose parts for 48 V DC - connection elements, cables, 1 Lot links, etc. 2.16.5 Spare for Battery Chargers Complete bridge of thyristors assembled on a cooling base Nos 2.16.5.1 1 Controller, complete including each type of card used 2.16.5.2 Nos 2.16.5.3 Loose elements - auxiliary relays, breakers, metering Lot instruments, control switches, fuses, etc. 2.16.6 Other necessary works as per Employer's Requirement and Lot Conditions of Contract, if any, not included above (specify) Sub Total 2.16 2.17 Mandatory spare parts - Miscellaneous material 2.17.1 Junction and marshalling boxed, outdoor, one of each type Lot used 2.17.2 Junction and marshalling boxed, indoor, one of each type 1 Lot used 2.17.3 Outdoor lighting fixture, one unit of each type used Lot 1 2.17.4 Post-type insulator, one unit of each type used 1 Lot 2.17.5 Suspension insulator, 5% of the total used Lot 2.17.6 Bus bar (rigid and strain) hardware, including, connectors, Lot terminals, separator, corona rings, 5% of each type used, minimum one unit 2.17.7 Grounding conductors, 5% of the installed conductors 1 Lot (stranded copper conductor, rectangular-shape copper bar and grounding rod) Fission connection material, including molds, welding 2.17.8 Lot powder and installation tools, quantity required to make 5% of the total executed connections 2.17.9 Mechanical connectors for grounding, 5% of the total Lot executed connections 2.17.10 Other necessary works as per Employer's Requirement and Lot Conditions of Contract, if any, not included above (specify) Sub Total 2.17 2.18 Mandatory spare parts for 400kV and 220kV GIS 2.18.1 Spare Gas SF6 bottles required to fill the two largest volume 2 2.18.1.1 compartments for 400kV and 220kV 2.18.2 Circuit Breakers, 4000 A, 50kA (For 400kV) Circuit breaker, complete pole assembly 2.18.2.1 Lot 2.18.2.2 Complete sets of main contacts 1 Lot 2.18.2.3 2 Complete sets of arcing contacts Lot 2.18.2.4 Operating mechanism, complete 1 Lot 2.18.2.5 Closing coils 10 Nos 2.18.2.6 10 Nos Tripping coils Circuit Breakers, 4000 A, 50kA (For 220kV) 2.18.3 Lot 2.18.3.1 Circuit breaker, complete pole assembly 2.18.3.2 1 Complete sets of main contacts Lot Complete sets of arcing contacts 2.18.3.3 2 Lot 2.18.3.4 Operating mechanism, complete 1 Lot 10 2.18.3.5 Closing coils Nos 10 2.18.3.6 Nos Tripping coils Disconnect-Switches, 4000 A (For 400kV) 2.18.4 2.18.4.1 Disconnect-Switch, complete pole 1 Nos 2.18.4.2 2 Nos Complete set of contacts 2.18.4.3 Operating mechanism, complete Nos 2.18.4.4 Operating mechanism motor 2 Nos 2.18.5 Disconnect-Switches, 4000 A (For 220kV)

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations Price Schedule

Breakdo	wn of Rates and Prices Schedule No. 2. Plant, Goods and	Equipm			
Item No.	Description	Qty.	Unit	Unit Rate (b) US\$	Total Price (c ) US\$
				DDP plus all	
				related cost as	
				defined in foot	
				note	
		1	2	3	(1) x (3)
2.18.5.1	Disconnect-Switch, complete pole	1	Nos		
2.18.5.2	Complete set of contacts	2	Nos		
2.18.5.3	Operating mechanism, complete	1	Nos		
2.18.5.4	Operating mechanism motor	2	Nos		
2.18.6	Maintenance Earthing Switches (For 400kV)		1103		
2.18.6.1	Earthing-Switch, complete pole	1	Lot		
2.18.6.2	Complete set of contacts	2	Nos		
2.18.6.3	Operating mechanism, complete	1	Lot		
	Operating mechanism motor	2	Nos		
			INUS		
2.18.7	Maintenance Earthing Switches (For 220kV)	1	T .		
2.18.7.1	Earthing-Switch, complete pole	1	Lot		
2.18.7.2	Complete set of contacts	2	Nos		
2.18.7.3	Operating mechanism, complete	1	Lot		
	Operating mechanism motor	2	Nos		
2.18.8	High-speed earthing Switches (For 400kV)				
2.18.8.1	High-speed earthing switch, complete pole	1	Lot		
2.18.8.2	Complete set of contacts	2	Nos		
2.18.8.3	Operating mechanism, complete	1	Lot		
2.18.8.4	Operating mechanism motor	2	Nos		
2.18.9	High-speed earthing Switches (For 220kV)				
2.18.9.1	High-speed earthing switch, complete pole	1	Lot		
2.18.9.2	Complete set of contacts	2	Nos		
2.18.9.3	Operating mechanism, complete	1	Lot		
2.18.9.4	Operating mechanism motor	2	Nos		
2.18.10	Other Equipment		1105		
	Voltage transformer, 400 kV, complete with disconnecting	3	Nos		
2.10.10.1	and earthing switch	3	1103		
2 19 10 2	Voltage transformer, 220 kV, complete with disconnecting	3	Nos		
2.10.10.2	and earthing switch	3	INOS		
2 10 10 2	Current transformer, metering core, loose part for 400kV	-	Mag		
		6	Nos		
	Current transformer, metering core, loose part for 220kV	6	Nos		
	Current transformer, protection core, loose part for 400kV	6	Nos		
	Current transformer, protection core, loose part for 220kV	6	Nos		
2.18.11	400kV GIS and 220kV GIS Bay, Local Control Cabinet				
2.18.11.1	One Bay Local Control Cabinet complete, wired,	2	Lot		
	with all specified devices				
2.18.12	Bus bar Elements (For 400kV)				
2.18.12.1	Bus conductor elements	2	Lot		
2.18.12.2	Bus connection elements	2	Lot		
2.18.12.3	GIS insulators, one of each type used	2	Lot		
	Pressure relief elements	2	Lot		
2.18.13	Bus bar Elements (For 220kV)		<u> </u>		
	Bus conductor elements	2	Lot		
	Bus connection elements	2	Lot		
	GIS insulators, one of each type used	2	Lot		
	Pressure relief elements	2	Lot		
	SF6-to-Air Bushing Modules		Lot		
		1	Lat		
	SF6-to-air bushing module, 400 kV, single phase	1	Lot		
	SF6-to-air bushing module, 220 kV, single phase	1	Lot		
	Loose Spare Parts	-			
2.18.15.1	5% of auxiliary relays, control devices, fuses, terminal	2	Lot		
	blocks, etc. minimum one unit of each type used				
2.18.16	Other necessary works as per Employer's Requirement and	1	Lot		
	Conditions of Contract, if any, not included above (specify)	<u> </u>		<u>                                       </u>	
				Sub Total 2.18	
2.19	Spare of LV control and power cables				
2.19.1	LV control cable, 5% of the installed cables	1	Lot		
2.19.2	LV power cable, 5% of the installed cables	1	Lot		
2.19.3	Cable installation accessories - 5% of the installed material	1	Lot		
	V · · · · · · · · · · · · · · · · · · ·			l .	

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations

Price Schedule

Breakdown of Rates and Prices Schedule No. 2. Plant, Goods and Equipment(Including Mandatory Spare Parts) Supplied Item No. Description Unit Unit Rate (b) Total Price (c) Otv. US\$ US\$ DDP plus all related cost as defined in foot note 2 3 (1) x (3)2.19.4 Other necessary works as per Employer's Requirement and Lot Conditions of Contract, if any, not included above (specify) Sub Total 2.19 2.20 Spare parts of Mechanical Equipment 2.20.1 Fire protection 2.20.1.1 Fire protection/detection for auto transformer - one unit of Lot each type used 2.20.1.2 Clean-agent fire extinguisher Lot 1 2.20.1.3 Control building general fire protection/detection system, 1 Lot one unit of each component used 2.20.1.4 GIS building general fire protection/detection system, one Lot unit of each component used 2.20.2 Control building HVAC system 2.20.2.1 Throwaway air filters per air conditioning unit Lot 2.20.2.2 Pulley belts per air conditioning unit motor Lot 2.20.2.3 Thermostat per air conditioning unit 1 Lot 2.20.3 GIS building ventilation system 2.20.3.1 Throwaway air filters per ventilation system Lot 2.20.3.2 Pulley belts per ventilation unit motor 1 Lot 2.20.3.3 Thermostat per ventilation unit Lot 2.20.4 Other necessary works as per Employer's Requirement and Lot Conditions of Contract, if any, not included above (specify) Sub Total 2.20 2.21 Works at New-Hetauda 2.21.1 Approach cable and hardware for termination of OPGW 1 Lot including joint box of Ratmate - Hetauda D/C Lines at New Hetauda Substation End including necessary AC,DC and Interfacing cable for tele protection application. Addition to the above Telecommunication works should include connection, extension and configuration of the local and network remote fiber optic equipment and all works required for the connection, extension and configuration of the phone system as well as for tele Sub Total 2.21 2.22 Works at Lapsiphedi 2.22.1 Supply and installation of necessary approach cable and Lot hardware for termination of OPGW of Ratmate -Lapsiphedi D/C Lines at Lapsiphedi Substation End, it's interfacing with existing DPC for tele protection application and necessary SDH, MUX/DMUX telecommunication terminal equipment required for the communication of the 400 kV Lines and its integrations with SAS at both end substations and SCADA system of the LDC. Addition to above Telecommunication works should include connection, extension and configuration of the local and network remote fiber optic equipment and all works required for the connection, configuration and extension of the phone system as well as for tele protection Sub Total 2.22 Total (Carried forward to Grand SC-5) Name of Bidder: Signature of Bidder: Note: \*\*\*:This value is indicative, the Contractor will validate as per item 1.1.6 of Design Works (Electrical)

**Country of Origin Declaration Form** 

Item No.	Description
	-

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations Price Schedule

Breakdown of Rates and Prices Schedule No. 2. Plant, Goods and Equipment(Including Mandatory Spare Parts) Supplied

Item No.	Description	Qty.	Unit	Unit Rate (b) USS  DDP plus all related cost as defined in foot note	Total Price (c ) US\$
		1	2	3	(1) x (3)

Note: Bidders shall enter the full name of the country of origin of all imported plant and equipment. Enter the code as per the

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations Price Schedule

Item No.	Description	Qty	Unit	Unit Rate (b)	Total Price (c)
Ittili 110.	Description	Qij	Cint	US\$	US\$
				EXW plus all related	USG
				cost as defined in foot	
				note	
		1	2	3	(1) x (3)
3.1	AIS HV and MV Equipment	1		J	$(1) \lambda (3)$
3.1.1	167 MVA, $(400/\sqrt{3}/220/\sqrt{3}/33)$ kV, Single Phase Auto-Transformer	7	Nos		
5.1.1	with OLTC, RTCC Facility, Surge protection arrangement (AIS) for	'	1103		
	HV, IV and LV side and with Bushing CT complete with all				
	accessories as specified				
3.1.2	Capacitor Voltage Transformer (CVT) 400kV, Single Phase	18	Nos		
3.1.2	2 Windings, Secondary Voltage 110V, Accuracy 0.2, Min Burden	10	1103		
	50VA, Application Metering				
3.1.3	Current Transformer (CT), 400kV, Single Phase, Live Type,	18	Nos		
5.1.5	3 Core, 2000-1000-500/1A, Class 0.2, Rated Output 15VA	10	1105		
3.1.4	Current Transformer (CT), 72.5kV, Single Phase	6	Nos		
5.1.4	2 Windings	0	1105		
3.1.5	400kV Surge Arrester (SA), Zinc Oxide	18	Nos		
5.1.5	366 kV Rated Voltage, 20kA, 12kJ/kV	10	1103		
3.1.6	Station Service Transformer, 630 kVA, 33/0.4kV	2	Nos		
3.1.7	30kV,10kA Lightning arrester for 33kV line bays	6	Nos		
3.1.8	30kV,10kA Lightning arrester for 33/0.4kV station service	6	Nos		
5.1.0	transformers		1105		
3.1.9	72.5kV Double Break Isolator, Single Phase	1	Lot		
3.1.10	72.5kV Circuit Breaker, Three Phase, 50Hz.	2	Nos		
3.1.11	72.5kV Current Transformer	6	Nos.		
3.1.12	400kV Bus Support Post Insulator	1	Lot		
3.1.13	220kV Bus Support Post Insulator	1	Lot		
3.1.14	72.5kV Bus Support Post Insulator	1	Lot		
3.1.15	Suspension/Tension Insulator Strings, Including Hardware	1	Lot		
3.1.16	Other necessary works as per Employer's Requirement and	1	Lot		
	Conditions of Contract, if any, not included above (specify)				
	· · · · · · · · · · · · · · · · · · ·			Sub Total 3.1	
3.2	Hot-Dip Galvanized Steel				
3.2.1	Gantry Column for 400 kV Incoming Line	7	Nos		
3.2.2	Gantry Girder for 400 kV Incoming Line	6	Nos		
3.2.3	Support Structure for 400 kV Current Transformer	18	Nos		
3.2.4	Support Structure for 400 kV Capacitive Voltage Transformer	18	Nos		
3.2.5	Support Structure for 400 kV Surge Arrester	18	Nos		
3.2.6	Support Structure for 400 kV Bus Support	1	Lot		
3.2.7	Support Structure for 220 kV Bus Support	1	Lot		
3.2.8	Support Structure for 72.5 kV Current Transformer	6	Nos		
3.2.9	Support Structure for 72.5 kV Bus Support or Pot Head	1	Lot		
3.2.10	Support Structure for 72.5 kV Single Switch Stand	1	Lot		
3.2.11	Support Structure for 30kV Lightning Arrestor	12	Nos		
3.2.12	Structures for Lightning Mast and other Lighting structures	1	Lot		
3.2.13	Other necessary works as per Employer's Requirement and	1	Lot		
	Conditions of Contract, if any, not included above (specify)			0.5	
				Sub Total 3.2	

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations

Price Schedule

	Description				
Item No.	Description	Qty	Unit	Unit Rate (b)	Total Price (c)
				US\$	US\$
				EXW plus all related	
				cost as defined in foot	
				note	
		1	2	3	(1) x (3)
3.3	Bus Bar and Overhead Connections				
3.3.1	5" AL. Tubular Bus Bar	1	Lot		
	141.30mm Outer Diameter, 9.53mm Thickness				
3.3.2	Bus bar Connectors and Hardware	1	Lot		
	(Tube to NEMA Pads, Bus Supports, etc)				
3.3.3	Bare Cond. ACSR	1	Lot		
5.5.5	54 Strand 3.53mm AL 7 Strands 3.53mm Steel		200		
3.3.4	Other necessary works as per Employer's Requirement and	1	Lot		
3.3.4	Conditions of Contract, if any, not included above (specify)	1	Lot		
	Conditions of Contract, if any, not included above (specify)			Cub Total 2.2	
2.4	IV Control and Domini California			Sub Total 3.3	
3.4	LV Control and Power Cable	1	T -4	1	
3.4.1	LV Control Cables	1	Lot		
3.4.2	LV Power Cables	1	Lot		
3.4.3	Cable Installation Accessories	1	Lot		
	(Cable Gland, Labels Terminal Strips, etc)				
3.4.4	XLPE Power Cable, 33kV (from LV side of the Auto transformer to	1	Lot		
	33kV line bay arrangement)				
3.4.5	33kV Cable Pothead	1	Lot		
3.4.6	Power Cable for Filter Plant (Transformer) 3.5CX240 sq.mm.	1	Lot		
	(Armoured, PVC Insulated) with suitable termination arrangement				
	all complete				
3.4.7	Cable carriers (trays, conduits, ducts) for routing the HV & LV	1	Lot		
	power, control, instrumentation and communication interface cables.				
3.4.8	Other necessary works as per Employer's Requirement and	1	Lot		
	Conditions of Contract, if any, not included above (specify)				
			l	Sub Total 3.4	
3.5	AC AND DC STATION SUPPLY				
3.5.1	400 V AC Main Switch Board				
3.5.1.1	400V Switchgear with Automation Controls,	3	Nos		
5.5.111	1000A CB and 2 Current Transformers		1105		
3.5.1.2	400V Switchgear with Automation Controls,	1	Nos		
3.3.1.2	630A CB and 2 Current Transformers	1	1103		
3.5.1.3	Distribution panel Bus-A,	1	Nos		
3.3.1.3	400V, 3 Phase, 1000A, 20kA for 1Sec.	1	1105		
2514	(5) 400A Breakers, (1) Potential Transformer		3.7		
3.5.1.4	Distribution panel Bus-B,	1	Nos		
	400V, 3 Phase, 1000A, 20kA for 1Sec.				
	(6) 400A Breakers, (1) Potential Transformer				
3.5.2	400 V AC Main Lighting Board				
3.5.2.1	100kVA Lighting Transformer	2	Nos		
3.5.2.2	Distribution panel, 400V, 3 Phase, 4 Wire, 20kA, 1Sec.	1	Nos		
	Bus-A (4) 63A, (1) 400A Breakers,				
	Bus-B (4) 63A, (1) 400A Breakers,				
	Bus-C (5) 63A				
	TIE A-B 400A breaker, TIE B-C 400A Breaker				
3.5.3	400 V AC Emergency Lighting Distribution Board				
3.5.3.1	100kVA Lighting Transformer	1	Nos		
3.5.3.2	Distribution panel Bus-A	1	Nos		
]	400V, 3 Phase, 4 Wire, 20kA, 1Sec.	-			
	(5) 63A, (1) 400A 4 Pole Breakers,				
	TIE A-B 100A Breaker				
3.5.3.3	Distribution panel Bus-B	1	Nos		
2.2.3.3	400V, 3 Phase, 4 Wire, 20kA, 1Sec.		1,05		
	(3) 63A, (1) 400A 4 Pole Breakers				
<u> </u>	(3) USA, (1) 40UA 4 FUIC DICAKCIS	<u> </u>	l	1	

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations Price Schedule

	wn of Rates and Prices Schedule No. 3. Plant, Goods and Equipme	int (11			
Item No.	Description	Qty	Unit	Unit Rate (b) US\$ EXW plus all related cost as defined in foot note	Total Price (c ) US\$
		1	2	3	(1) x (3)
3.5.4	400 V AC Distribution Board				
3.5.4.1	400V Switchgear with Automation Controls,	1	Nos		
	1000A CB and 2 Current Transformers				
3.5.4.2	400/110V, 50VA, Potential Transformer	3	Nos		
3.5.4.3	400/1A Current Transformer, Class 5P20	1	Nos		
3.5.4.4	400V Switchgear with Automation Controls,	1	Nos		
	630A with 2 Current Transformers				
3.5.4.5	400v Distribution panel Bus-A (1) 400A, (4) 100A, (8) 63A, (2) 32A 4 Pole Breakers, (14) 63A, (8) 32A 2 Pole Breakers	1	Nos		
	TIE A-B 400A Breaker				
3.5.4.6	400v Distribution panel Bus-B (1) 400A, (3) 100A, (8) 63A 4 Pole Breakers (14) 63A, (5) 32A 4 Pole Breakers	1	Nos		
3.5.5	400 V AC AMF Panel	_	3.7		
3.5.5.1	400/1A Current Transformer, Class 1	3	Nos		
3.5.5.2	400/1A Current Transformer, Class 5P20	1	Nos		
3.5.6	DC Chargers and Batteries 220V Battery Charger (Float/Boost)	6	Nos		
3.5.6.1		6	Nos		
3.5.6.2	48V Battery charger (Float/Boast) 250A Throw over Switch, Interlock	12	Nos		
3.5.6.3	Battery, 220Vdc, 108 Minimum Cells	4	Nos		
3.5.6.5	Battery, 48Vdc, 24 Minimum Cells	4	Nos		
3.5.7	DC Distribution Boards	7	1108		
3.5.7.1	Distribution panel, 220V, 400A, 4kA for 1 Sec. 50 positions	6	Nos		
3.5.7.2	Distribution panel, 48V, 400A, 4kA for 1 Sec. 50 positions	4	Nos		
3.5.7.3	DC Fuse Box, 220Vdc	1	Lot		
3.5.7.4	DC Fuse Box, 48Vdc	1	Lot		
3.5.8	Other Equipment	1	Lot		
3.5.8.1	Diesel Generator Set, 250kVA (Including Fuel Tank) and all accessories	1	Nos		
3.5.9	Other necessary works as per Employer's Requirement and	1	Lot		
	Conditions of Contract, if any, not included above (specify)				
2.6				Sub Total 3.5	
3.6	400 kV Gas Insulated Switchgear (1-1/2 breaker arrangement)	1		1	
3.6.1	Line/Feeder Bay-400 kV	10	N.T.		
3.6.1.1	SF6 Circuit Breaker, 400kV, 4000A, 50kA, Three Pole	10	Nos		
3.6.1.2	Current Transformer Modules, three cores, 400kV, single-phase, Three-phase set (1 set = 3 single phase)	20	Nos		
3.6.1.3	Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set (1 set = 3 single phase)	20	Nos		
3.6.1.4	Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set (1 set = 3 single phase)	20	Nos		
3.6.1.5	Line/Feeder High Speed Earthing Switches, with removable earthing link 400kV, 50kA, single-phase, three-phase set (1 set = 3 single phase)	10	Nos		
3.6.1.6	Voltage Transformers, 400kV, dual secondary, with earthing link, Single-phase, Three-phase set (1 set = 3 single phase)	10	Nos		
3.6.1.7	Line/Feeder Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set (1 set = 3 single phase)	10	Nos		
3.6.1.8	Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set (1 set = 3 single phase)	10	Nos		
3.6.1.9	Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring,	10	Nos		
3.6.1.10	circuit breaker monitoring)  Partial Discharge Monitoring System including monitoring sensors	10	Nos		
3.6.1.11	and diagnostic equipment (per bay)  LV control and power cable connections from Local Control Cabinet	1	Lot		
3.6.1.12	to all GIS equipment/devices  All metallic structures and supports required for GIS complete with	1	Lot		
3.0.1.12	accessories	1	LOI		

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations

Price Schedule

USS EXW plus all related costs as defined in foot note  access to all CIS devices  3.6.1.13 All walkways, platforms, stairs, ladders and accessories required for access to all CIS devices  3.6.1.14 Gas Installed has (GIB) and required CIS Termination along with supports for CIB run for whole Line Feeder Bay (Three Phase Set)  3.6.2.1 Transformer Bay-400 LV  3.6.2.2 Crarent Transformer Modules, Three corns, 400 LV  3.6.2.3 Cincle Phase CIS Control Phase Set)  3.6.2.3 Cincle Phase CIS Control Phase Set)  3.6.2.4 Circuit Breakers, 400 LV,		wn of Rates and Prices Schedule No. 3. Plant, Goods and Equipme				
A	Item No.	Description	Qty	Unit	EXW plus all related cost as defined in foot	Total Price (c) US\$
36.113 All walkways, platforms, stairs, ladders and accessories required for access out off Gis devices and Gis devices of Gis and review of Gis Tomore and Gis devices and Gis devices of Gis In an evolution along with supports for Gis In not proble Line/Feeder By (Three Phase Scri Scri Supports for Gis In not proble Line/Feeder By (Three Phase Scri Scri Scri Scri Scri Scri Scri Scri			1	2		(1) x (3)
supports for GIB run for whole Line/Feeder Bay (Three Phase Set)	3.6.1.13					(1) # (0)
3.6.2.1 SF6 Circuit Breakers, 4008V, 4000A, 50kA, three-pole, with Control Point on Wave switching Device 3.6.2.2 Current Transformer Modules, Three cores, 400kV, 50kA, 50kP, phase, Three-phase set (1 set = 3 single phase) 50kA, single-phase, Three-phase set (1 set = 3 single phase) 50kA, single-phase, Three-phase set (1 set = 4 single phase) 50kA, single-phase, three-phase set (1 set = 4 single phase) 50kA, single-phase, three-phase set (1 set = 5 single phase) 50kA, single-phase, three-phase set (1 set = 3 single phase) 50kA, single-phase, three-phase set (1 set = 3 single phase) 50kA, single-phase, three-phase set (1 set = 3 single phase) 50kA, single-phase, three-phase set (1 set = 3 single phase) 50kA, single-phase, three-phase set (1 set = 3 single phase) 50kA, single-phase, three-phase set (1 set = 3 single phase) 60kA, single-phase, three-phase set (1 set = 3 single phase) 60kA, single-phase, three-phase set (1 set = 3 single phase) 70kA, single-phase, three-phase set (1 set = 3 single phase) 70kA, single-phase, three-phase set (1 set = 3 single phase) 70kA, single-phase, three-phase set (1 set = 3 single phase) 70kA, single-phase, three-phase set (1 set = 3 single phase) 70kA, single-phase, three-phase set (1 set = 3 single phase) 70kA, single-phase, three-phase set (1 set = 3 single phase) 70kA, single-phase, three-phase set (1 set = 3 single phase) 70kA, single-phase, three-phase set (1 set = 3 single phase) 70kA, single-phase, three-phase set (1 set = 3 single phase) 70kA, single-phase, three-phase set (1 set = 3 single phase) 70kA, single-phase, three-phase set (1 set = 3 single phase) 70kA, single-phase, three-phase set (1 set = 3 single phase) 70kA, single-phase, three-phase set (1 set = 3 single phase) 70kA, single-phase, three-phase set (1 set = 3 single phase) 70kA, single-phase, three-phase set (1 set = 3 single phase) 70kA, single-phase, three-phase set (1 set = 3 single phase) 70kA, single-phase, three-phase set (1 set = 3 single phase) 70kA, single-phase, three-phase set (1 set = 3 single	3.6.1.14		10	Bays		
Control Point on Wave Switching Device   S						
Single-phase, Three-phase set (1 set = 3 single phase)	3.6.2.1		4	Nos		
3.6.2.1 Circuit Breaker Isolating Disconnect Switches, 400KV, 4000A.  SDAA, single-phase, three-phase set (1 set = 3 single phase)  3.6.2.4 Circuit Breaker Maintenance Earthing Switches, 400KV, 8 Nos SDAA, Single-phase, Three-phase set (1 set = 3 single phase)  3.6.2.5 Line/Feeder High Speed Earthing Switches, with removable carthing link 400KV, 50KA, Single-phase, Three-phase set (1 set = 3 single phase)  3.6.2.6 Voltage Transformers, 400KV, dual secondary, earthing link, single-phase, three-phase set (1 set = 3 single phase)  3.6.2.7 Transformer Disconnect Switches, 400KV, 4000A, 50KA, 5 Nos Single-phase, Three-phase set (1 set = 3 single phase)  3.6.2.8 Transformer Maintenance Earthing Switches, 400KV, 50KA, single-phase, Three-phase set (1 set = 3 single phase)  3.6.2.9 Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, instrumentation, interlocking, annunciation, gas density monitoring, sinstrumentation, interlocking, annunciation, gas density monitoring, and diagnostic equipment (per bay)  3.6.2.10 LV control and power cable connections from Local Control Cabinet to tall GIS equipment (per bay)  3.6.2.11 LV control and power cable connections from Local Control Cabinet to tall GIS equipment (per bay)  3.6.2.12 All metallic structures and supports required for GIS complete with a cacessories  3.6.2.13 All walkways, platforms, stairs, ladders and accessories required for a caces on all GIS devices  3.6.2.14 Isolating, & Earthing Switches, 400KV, 4000A, 50KA  Single phase, and Auxiliary Gas Insulated Bus (GIB) for Spare Transformer departion, GIS to AIS Bushing termination, jumpers, required CI, AI, tube, metering, control and protection as required all complete. 33KV 50talostro, 33KV cables, jumpers as required all complete. 33KV 50talostro, 33KV cables, jumpers as required all complete. 33KV 50talostro, 33KV cables, jumpers as required GIS Termination along with supports for GIB run for whole Transformer Bay Lot  3.6.3.1 Proposed SFG D	3.6.2.2		8	Nos		
3.6.2.4 Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set (1 set = 3 single phase) 3.6.2.5 Line Feeder High Speed Earthing Switches, with removable earthing link 400kV, 50kA, Single-phase, three-phase set (1 set = 3 single phase) 3.6.2.6 Voltage Transformers, 400kV, dual secondary, earthing link, single-phase, three-phase set (1 set = 3 single phase) 3.6.2.7 Transformer Disconnect Switches, 400kV, 4000A, 50kA, 6 Nos Single-phase, Three-phase set (1 set = 3 single phase) 3.6.2.8 Transformer Maintenance Earthing Switches, 400kV, 4000A, 50kA, single-phase, Three-phase set (1 set = 3 single phase) 3.6.2.9 Bay Local Control Cabinet including (device controls, instrumentation, interbocking, annunciation, gas density monitoring, circuit breaker monitoring) 3.6.2.10 Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay) 3.6.2.11 Control and power cable connections from Local Control Cabinet 1 Lot to a cacessories 3.6.2.12 All metallic structures and supports required for GIS complete with 1 Lot accessories 3.6.2.13 All walkways, platforms, stairs, ladders and accessories required for a cacessories coll GIS devices 3.6.2.14 Soluting & Earthing Switches, 400kV, 4000A, 50kA Single-phase, Three-phase set (1 set = 3 single phase) 3.6.2.15 Transformer Operation, GIS to AIS Bushing termination, jumpers, required CT, AI, tube, metering, control and protection as required all complete 33kV isolators, 33kV cables, jumpers as required all complete 33kV isolators, 33kV cables, jumpers as required GIS 3.6.3.1 Proposed SFG Diameter middle Circuit Breakers associated with Line Feeder, 400kV, 4000A, 50kA, three-pole with Cartor of the Cartor of Cabinetic Ca	3.6.2.3	Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A,	8	Nos		
3.6.2.5   Line/Feeder High Speed Earthing Switches, with removable earthing   Sink 400kV, 50kA, Single-phase, Three-phase set (1 set = 3 single phase)	3.6.2.4	Circuit Breaker Maintenance Earthing Switches, 400kV,	8	Nos		
3.6.2.6   Voltage Transformers, 400kV, dual secondary, earthing link, single-phase, three-phase set (1 set = 3 single phase)   3.6.2.7   Transformer Disconnect Switches, 400kV, 4000A, 50kA,   6   Nos   Single-phase, Three-phase set (1 set = 3 single phase)   3.6.2.8   Transformer Disconnect Switches, 400kV, 50kA, single-phase, three-phase set (1 set = 3 single phase)   3.6.2.9   Bay Local Countrol Cabinet including device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring)   3.6.2.10   Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay)   3.6.2.11   Lot control and power cable connections from Local Control Cabinet to all GIS equipment/devices   3.6.2.13   All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices   3.6.2.14   Installic structures and supports required GIS complete with accessories to all GIS devices   3.6.2.14   Installic structures and supports required GIS complete with accessories to all GIS devices   3.6.2.15   Tree Single Phase, and Auxiliary Gas Insulated Bus (GIB) for Spare Transformer Operation, GIS to AIS Bushing termination, jumpers, required CI, Al. tube, metering, control and protection as required all complete 33kV isolators, 33kV cables, jumpers as required all complete 33kV siolators, 33kV cables, jumpers as required all complete 33kV valodova, 50kA, three-pole   4   Nos   3.6.3.1   Proposed SF6 Diameter middle Circuit Breakers associated with Auto Transformer and Line Feeder, 400kV, 4000A, 50kA, three-pole, with Control Point on Wave Switching Device   2   Nos   3.6.3.2   Proposed SF6 Diameter middle Circuit Breakers associated with Auto Transformer Modules, Three cores, 400kV, 400A, 50kA, three-pole, with Control Point on Wave Switching Device   2   Nos   50kA, single-phase, three-phase set (1 set = 3 single phase)   1   Nos   50kA, single-phase, three-phase set (1 set = 3 single phase)   1   Nos   50kA, single-phase, three-phase set (1	3.6.2.5	Line/Feeder High Speed Earthing Switches, with removable earthing link 400kV, 50kA, Single-phase, Three-phase set (1 set = 3 single	3	Nos		
3.6.2.7   Transformer Disconnect Switches, 400kV, 4000A, 50kA,   5   Nos	3.6.2.6	Voltage Transformers, 400kV, dual secondary, earthing link, single-	3	Nos		
3.6.2.9 Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring) 3.6.2.10 Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay) 3.6.2.11 LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices 3.6.2.12 All walkways, platforms, stairs, ladders and accessories required for access to all CIS devices 3.6.2.13 All walkways, platforms, stairs, ladders and accessories required for access to all CIS devices 3.6.2.14 Isolating & Earthing Switches, 400kV, 4000A, 50kA Single phase, and Auxiliary Gas Insulated Bus (GIB) for Spare Transformer Operation, GIS to AIS Bushing termination, jumpers, required CT, Al. tube, metering, control and protection as required all complete. 33kV isolators, 33kV cables , jumpers as required all complete all complete all complete of the complete of t	3.6.2.7	Transformer Disconnect Switches, 400kV, 4000A, 50kA,	6	Nos		
3.6.2.9   Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring)	3.6.2.8	Transformer Maintenance Earthing Switches, 400kV, 50kA, single-	6	Nos		
circuit breaker monitoring)  3.6.2.10 Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay)  3.6.2.11 LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices  3.6.2.12 All metallic structures and supports required for GIS complete with accessories  3.6.2.13 All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices  3.6.2.14 Isolating & Earthing Switches, 400kV, 4000A, 50kA  3.6.2.15 Isolating & Earthing Switches, 400kV, 4000A, 50kA  3.6.2.16 Isolating & Earthing Switches, 400kV, 4000A, 50kA  3.6.2.17 Isolating & Earthing Switches, 400kV, 4000A, 50kA  3.6.2.18 Isolating & Earthing Switches, 400kV, 4000A, 50kA  3.6.2.19 Three Single Phase Gas Insulated Bus (GIB) for Spare Transformer Operation, GIS to AIS Bushing termination, jumpers, required CIT, Al. tube, metering, control and protection as required all complete, 33kV isolators, 33kV cables, jumpers as required all complete, 33kV isolators, 33kV cables, jumpers as required all complete, 33kV isolators, 33kV cables, jumpers as required all complete, 33kV, 4000A, 50kA, table place and all proposed SF6 Diameter middle Circuit Breaker associated with Auto Transformer Middle Breaker Bay-400 kV  3.6.3.1 Proposed SF6 Diameter middle Circuit Breakers associated with Auto Transformer and Line Feeder, 400kV, 4000A, 50kA, three-pole, with Control Point on Wave Switching Device  3.6.3.2 Current Transformer Modules, Three cores, 400kV, 12 Nos Single-phase, Three-phase set (1 set = 3 single phase)  3.6.3.4 Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase, three-phase set (1 set = 3 single phase)  3.6.3.5 Circuit Breaker Isolating monitoring, as density monitoring, circuit breaker monitoring)  3.6.3.6 Pay Local Control Cabinet including (device controls, 6 Nos instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring)  3.6.3.7 Partial Discharge Monitoring System including monitoring sen	3.6.2.9	Bay Local Control Cabinet including (device controls,	4	Nos		
and diagnostic equipment (per bay)  3.6.2.11 LV control and power cable connections from Local Control Cabinet 1 Lot to all GIS equipment/devices  3.6.2.12 All metallic structures and supports required for GIS complete with 1 accessories  3.6.2.13 All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices  3.6.2.14 All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices  3.6.2.15 Isolating & Earthing Switches, 400kV, 4000A, 50kA Single phase, and Auxiliary Gas Insulated Bus (GIB) for Spare Transformer Operation, GIS to AIS Bushing termination, jumpers, required CT, Al. tube, metering, control and protection as required all complete. 33kV isolators, 33kV cables , jumpers as required all complete. 33kV isolators, 33kV cables , jumpers as required GIS Termination along with supports for GIB run for whole Transformer Bay Lot  3.6.3.1 Diameter Middle Breaker Bay-400 kV  3.6.3.2 Diameter Middle Breaker Bay-400 kV  3.6.3.3 Diameter Middle Breaker Bay-400 kV  3.6.3.4 Proposed SF6 Diameter middle Circuit Breakers associated with Auto Transformer and Line Feeder, 400kV, 4000A, 50kA, three-pole, with Control Point on Wave Switching Device  3.6.3.3 Current Transformer Modules, Three cores, 400kV, 4000A, 50kA, three-pole, with Control Point on Wave Switching Device  3.6.3.4 Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase, Three-phase set (1 set = 3 single phase)  3.6.3.5 Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase, three-phase set (1 set = 3 single phase)  3.6.3.6 Bay Local Control Cabinet including (device controls, 50kA, Single-phase, three-phase set (1 set = 3 single phase)  3.6.3.7 Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay)  3.6.3.9 All metallic structures and supports required for GIS complete with 1 Lot	3.6.2.10	circuit breaker monitoring)	4	Nos		
to all GIS equipment/devices  3.6.2.12 All metallic structures and supports required for GIS complete with accessories  3.6.2.13 All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices  3.6.2.14 Isolating & Earthing Switches, 400kV, 4000A, 50kA Single phase, and Auxiliary Gas Insulated Bus (GIB) for Spare Transformer Operation, GIS to AIS Bushing termination, jumpers, required CT, AI, tube, metering, control and protection as required all complete. 33kV isolators, 33kV cables, jumpers as required all complete  3.6.2.15 Three Single Phase Gas Insulated bus (GIB) and required GIS Termination along with supports for GIB run for whole Transformer Bay Lot  3.6.3.1 Proposed SF6 Diameter middle Circuit Breakers associated with Line Feeder, 400kV, 4000A, 50kA, three-pole  3.6.3.2 Proposed SF6 Diameter middle Circuit Breakers associated with Auto Transformer and Line Feeder, 400kV, 4000A, 50kA, three-pole, with Control Point on Wave Switching Device  3.6.3.3 Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase, Three-phase set ((1 set = 3 single phase)  3.6.3.4 Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase, Three-phase set (1 set = 3 single phase)  3.6.3.5 Circuit Breaker Maintenance Earthing Switches, 400kV, 12 Nos 50kA, Single-phase, Three-phase set (1 set = 3 single phase)  3.6.3.6 Partial Discharge Monitoring System including monitoring sensors 6 Nos and diagnostic equipment (fer bay)  3.6.3.7 Partial Discharge Monitoring System including monitoring sensors 6 Nos and diagnostic equipment (fer bay)  3.6.3.9 All metallic structures and supports required for GIS complete with 1 Lot		and diagnostic equipment (per bay)	1	Lot		
accessories  3.6.2.13 All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices  3.6.2.14 Isolating & Earthing Switches, 400kV, 4000A, 50kA Single phase, and Auxiliary Gas Insulated Bus (GIB) for Spare Transformer Operation, GIS to AIS Bushing termination, jumpers, required CT, Al. tube, metering, control and protection as required all complete. 33kV isolators, 33kV cables , jumpers as required all complete omplete. 3remination along with supports for GIB run for whole Transformer Bay Lot  3.6.2.15 Three Single Phase Gas Insulated bus (GIB) and required GIS Termination along with supports for GIB run for whole Transformer Bay Lot  3.6.3. Diameter Middle Breaker Bay-400 kV  3.6.3.1 Proposed SF6 Diameter middle Circuit Breakers associated with Line Feeder, 400kV, 4000A, 50kA, three-pole  3.6.3.2 Proposed SF6 Diameter middle Circuit Breakers associated with Auto Transformer and Line Feeder, 400kV, 4000A, 50kA, three-pole, with Control Point on Wave Switching Device  3.6.3.3 Current Transformer Modules, Three cores, 400kV, 400A, 50kA, three-pole, with Control Point on Wave Switching Device  3.6.3.4 Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase, three-phase set (1 set = 3 single phase)  3.6.3.5 Circuit Breaker Maintenance Earthing Switches, 400kV, 400A, 50kA, single-phase, three-phase set (1 set = 3 single phase)  3.6.3.6 Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring)  3.6.3.7 Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay)  3.6.3.8 LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices  3.6.3.9 All metallic structures and supports required for GIS complete with 1 Lot		to all GIS equipment/devices				
access to all GIS devices  3.6.2.14 Isolating & Earthing Switches, 400kV, 4000A, 50kA Single phase, and Auxiliary Gas Insulated Bus (GIB) for Spare Transformer Operation, GIS to AIS Bushing termination, jumpers, required CT, AI. tube, metering, control and protection as required all complete. 33kV isolators, 33kV cables, jumpers as required all complete. 3.6.2.15 Three Single Phase Gas Insulated bus (GIB) and required GIS Termination along with supports for GIB run for whole Transformer Bay Lot  3.6.3 Diameter Middle Breaker Bay-400 kV 3.6.3.1 Proposed SF6 Diameter middle Circuit Breakers associated with Line Feeder, 400kV, 4000A, 50kA, three-pole Auto Transformer and Line Feeder, 400kV, 4000A, 50kA, three-pole, with Control Point on Wave Switching Device 3.6.3.3 Current Transformer Modules, Three cores, 400kV, Single-phase, Three-phase set (1 set = 3 single phase) 3.6.3.4 Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, S0kA, single-phase, three-phase set (1 set = 3 single phase) 3.6.3.5 Circuit Breaker Maintenance Earthing Switches, 400kV, S0kA, Single-phase, three-phase set (1 set = 3 single phase) 3.6.3.6 Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring) 3.6.3.7 Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay) 3.6.3.9 All metallic structures and supports required for GIS complete with 1 Lot		accessories				
Single phase, and Auxiliary Gas Insulated Bus (GIB) for Spare Transformer Operation, GIS to AIS Bushing termination, jumpers, required CT, AI tube, metering, control and protection as required all complete. 33kV isolators, 33kV cables, jumpers as required all complete  3.6.2.15 Three Single Phase Gas Insulated bus (GIB) and required GIS Termination along with supports for GIB run for whole Transformer Bay Lot  3.6.3 Diameter Middle Breaker Bav-400 kV  3.6.3.1 Proposed SF6 Diameter middle Circuit Breakers associated with Line Feeder, 400kV, 4000A, 50kA, three-pole  3.6.3.2 Proposed SF6 Diameter middle Circuit Breakers associated with Auto Transformer and Line Feeder, 400kV, 4000A, 50kA, three-pole, with Control Point on Wave Switching Device  3.6.3.3 Current Transformer Modules, Three cores, 400kV, Single-phase, Three-phase set ((1 set = 3 single phase)  3.6.3.4 Circuit Breaker Isolating Disconnect Switches, 400kV, 400A, 50kA, single-phase, three-phase set (1 set = 3 single phase)  3.6.3.5 Circuit Breaker Maintenance Earthing Switches, 400kV, 400kV, 50kA, single-phase, Three-phase set (1 set = 3 single phase)  3.6.3.6 Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring)  3.6.3.7 Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay)  3.6.3.8 LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices  3.6.3.9 All metallic structures and supports required for GIS complete with	3.6.2.13	access to all GIS devices	1	Lot		
Termination along with supports for GIB run for whole Transformer Bay Lot  3.6.3 Diameter Middle Breaker Bay-400 kV  3.6.3.1 Proposed SF6 Diameter middle Circuit Breakers associated with Line Feeder, 400kV, 4000A, 50kA, three-pole  3.6.3.2 Proposed SF6 Diameter middle Circuit Breakers associated with Auto Transformer and Line Feeder, 400kV, 4000A, 50kA, three-pole, with Control Point on Wave Switching Device  3.6.3.3 Current Transformer Modules, Three cores, 400kV, Single-phase, Three-phase set ((1 set = 3 single phase)  3.6.3.4 Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase, three-phase set (1 set = 3 single phase)  3.6.3.5 Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA,Single-phase, Three-phase set (1 set = 3 single phase)  3.6.3.6 Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring)  3.6.3.7 Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay)  3.6.3.8 LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices  3.6.3.9 All metallic structures and supports required for GIS complete with 1 Lot	3.6.2.14	Single phase, and Auxiliary Gas Insulated Bus (GIB) for Spare Transformer Operation, GIS to AIS Bushing termination, jumpers, required CT, Al. tube, metering, control and protection as required all complete. 33kV isolators, 33kV cables , jumpers as required all	3	Set		
3.6.3 Diameter Middle Breaker Bay-400 kV 3.6.3.1 Proposed SF6 Diameter middle Circuit Breakers associated with Line Feeder, 400kV, 4000A, 50kA, three-pole 3.6.3.2 Proposed SF6 Diameter middle Circuit Breakers associated with Auto Transformer and Line Feeder, 400kV, 4000A, 50kA, three-pole, with Control Point on Wave Switching Device 3.6.3.3 Current Transformer Modules, Three cores, 400kV, Single-phase, Three-phase set ((1 set = 3 single phase) 3.6.3.4 Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase, three-phase set (1 set = 3 single phase) 3.6.3.5 Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set (1 set = 3 single phase) 3.6.3.6 Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring) 3.6.3.7 Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay) 3.6.3.8 LV control and power cable connections from Local Control Cabinet 1 Lot to all GIS equipment/devices 3.6.3.9 All metallic structures and supports required for GIS complete with 1 Lot	3.6.2.15	Termination along with supports for GIB run for whole Transformer		Bays		
3.6.3.1 Proposed SF6 Diameter middle Circuit Breakers associated with Line Feeder, 400kV, 4000A, 50kA, three-pole 3.6.3.2 Proposed SF6 Diameter middle Circuit Breakers associated with Auto Transformer and Line Feeder, 400kV, 4000A, 50kA, three-pole, with Control Point on Wave Switching Device 3.6.3.3 Current Transformer Modules, Three cores, 400kV, Single-phase, Three-phase set ((1 set = 3 single phase) 3.6.3.4 Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, S0kA, single-phase, three-phase set (1 set = 3 single phase) 3.6.3.5 Circuit Breaker Maintenance Earthing Switches, 400kV, S0kA,Single-phase, Three-phase set (1 set = 3 single phase) 3.6.3.6 Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring) 3.6.3.7 Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay) 3.6.3.8 LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices 3.6.3.9 All metallic structures and supports required for GIS complete with 1 Lot	3.6.3					
3.6.3.2 Proposed SF6 Diameter middle Circuit Breakers associated with Auto Transformer and Line Feeder, 400kV, 4000A, 50kA, three-pole, with Control Point on Wave Switching Device 3.6.3.3 Current Transformer Modules, Three cores, 400kV, 50kA, three-pole, phase, Three-phase set ((1 set = 3 single phase)) 3.6.3.4 Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase, three-phase set (1 set = 3 single phase) 3.6.3.5 Circuit Breaker Maintenance Earthing Switches, 400kV, 12 Nos 50kA,Single-phase, Three-phase set (1 set = 3 single phase) 3.6.3.6 Bay Local Control Cabinet including (device controls, 6 Nos instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring) 3.6.3.7 Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay) 3.6.3.8 LV control and power cable connections from Local Control Cabinet 1 Lot to all GIS equipment/devices 3.6.3.9 All metallic structures and supports required for GIS complete with 1 Lot		Proposed SF6 Diameter middle Circuit Breakers associated with	4	Nos		
3.6.3.3 Current Transformer Modules, Three cores, 400kV, Single-phase, Three-phase set ((1 set = 3 single phase)  3.6.3.4 Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase, three-phase set (1 set = 3 single phase)  3.6.3.5 Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA,Single-phase, Three-phase set (1 set = 3 single phase)  3.6.3.6 Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring)  3.6.3.7 Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay)  3.6.3.8 LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices  3.6.3.9 All metallic structures and supports required for GIS complete with  1 Lot	3.6.3.2	Proposed SF6 Diameter middle Circuit Breakers associated with Auto Transformer and Line Feeder, 400kV, 4000A, 50kA, three-	2	Nos		
3.6.3.4 Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase, three-phase set (1 set = 3 single phase)  3.6.3.5 Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA,Single-phase, Three-phase set (1 set = 3 single phase)  3.6.3.6 Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring)  3.6.3.7 Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay)  3.6.3.8 LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices  3.6.3.9 All metallic structures and supports required for GIS complete with 1 Lot	3.6.3.3	Current Transformer Modules, Three cores, 400kV,	12	Nos		
3.6.3.5 Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA,Single-phase, Three-phase set (1 set = 3 single phase)  3.6.3.6 Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring)  3.6.3.7 Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay)  3.6.3.8 LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices  3.6.3.9 All metallic structures and supports required for GIS complete with 1 Lot	3.6.3.4	Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A,	12	Nos		
3.6.3.6 Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring)  3.6.3.7 Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay)  3.6.3.8 LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices  3.6.3.9 All metallic structures and supports required for GIS complete with 1 Lot	3.6.3.5	Circuit Breaker Maintenance Earthing Switches, 400kV,	12	Nos		
3.6.3.7 Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay) 3.6.3.8 LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices 3.6.3.9 All metallic structures and supports required for GIS complete with 1 Lot	3.6.3.6	Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring)	6	Nos		
3.6.3.8 LV control and power cable connections from Local Control Cabinet 1 Lot to all GIS equipment/devices 3.6.3.9 All metallic structures and supports required for GIS complete with 1 Lot	3.6.3.7	Partial Discharge Monitoring System including monitoring sensors	6	Nos		
3.6.3.9 All metallic structures and supports required for GIS complete with 1 Lot	3.6.3.8	LV control and power cable connections from Local Control Cabinet	1	Lot		
	3.6.3.9		1	Lot		

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations Price Schedule

	own of Rates and Prices Schedule No. 3. Plant, Goods and Equipme				
Item No.	Description	Qty	Unit	Unit Rate (b) US\$ EXW plus all related cost as defined in foot	Total Price (c ) US\$
		1	2	3	(1) x (3)
3.6.3.10	All walkways, platforms, stairs, ladders and accessories required for	1	Lot	3	(1) x (3)
3.6.4	access to all GIS devices  Gas Insulated BUSBAR				
3.6.4.1	400kV, Double Bus Bar of 3 single phase (isolated), SF6 gas	7	Diameter		
3.0.4.1	insulated, metal enclosed 4000A bus bars each enclosed in three individual bus enclosures per diameter	,	Diameter		
3.6.4.2	Voltage Transformers, 400kV, dual secondary, single-phase, three-phase set ((1 set = 3 single phase)	2	Nos		
3.6.4.3	Main Bus Bar High Speed Earthing Switches, with removable earthing link 400kV, 50kA, Single-phase, Three-phase set (1 set = 3 single phase)	2	Nos		
3.6.4.4	Main Bus Bar Earthing Switches, with removable earthing link 400kV, 50kA, Single-phase, Three-phase set (1 set = 3 single phase)	2	Nos		
3.6.4.5	Bus Bar Isolating Disconnect Switches, 400kV, 4000A, 50kA, single phase, three-phase set ((1 set = 3 single phase)	2	Nos		
3.6.5	Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)	1	Lot		
	(Specify)	1	1	Sub Total 3.6	
3.7	220kV Gas Insulated Switchgear (1-1/2 breaker arrangement)			540 1041 5.0	1
3.7.1	Line/Feeder Bay-220 kV				
3.7.1.1	SF6 Circuit Breaker, 220kV, 4000A, 50kA, Three Pole	8	Nos		
3.7.1.2	Current Transformer Modules, three cores, 220kV, single-phase, three-phase set ((1 set = 3 single phase)	16	Nos		
3.7.1.3	Circuit Breaker Isolating Disconnect Switches, 220kV, 4000A, 50kA, single-phase, three-phase set (1 set = 3 single phase)	16	Nos		
3.7.1.4	Circuit Breaker Maintenance Earthing Switches, 220kV, 50kA, single-phase, three-phase set (1 set = 3 single phase)	16	Nos		
3.7.1.5	Line/Feeder High Speed Earthing Switches, with removable earthing link 220kV, 50kA, single-phase, three-phase set (1 set = 3 single phase)	8	Nos		
3.7.1.6	Voltage Transformers, 220kV, dual secondary, with earthing link, single-phase, three-phase set (1 set = 3 single phase)	8	Nos		
3.7.1.7	Line/Feeder Disconnect Switches, 220kV, 4000A, 50kA, single-phase, three-phase set (1 set = 3 single phase)	8	Nos		
3.7.1.8	Line/Feeder Maintenance Earthing Switches, 220kV, 50kA, single- phase, three-phase set (1 set = 3 single phase)	8	Nos		
3.7.1.9	Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring)	8	Nos		
3.7.1.10	Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay)	8	Nos		
3.7.1.11	LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices	1	Lot		
3.7.1.12	All metallic structures and supports required for GIS complete with accessories	1	Lot		
3.7.1.13	All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices	1	Lot		
3.7.1.14	Three Single Phase Gas Insulated bus (GIB) and required GIS Termination along with supports for GIB run for the whole	8	Bays		
3.7.2	Transformer Bay-220 kV				
3.7.2.1	SF6 Circuit Breakers, 220kV, 4000A, 50kA, three-pole.	6	Nos		
3.7.2.2	Current Transformer Modules, three cores, 220kV, single-phase, three-phase set (1 set = 3 single phase)	12	Nos		
3.7.2.3	Circuit Breaker Isolating Disconnect Switches, 220kV, 4000A, 50kA, single-phase, three-phase set (1 set = 3 single phase)	12	Nos		
3.7.2.4	Circuit Breaker Maintenance Earthing Switches, 220kV, 50kA, single-phase, three-phase set (1 set = 3 single phase)	12	Nos		
3.7.2.5	Transformer High Speed Earthing Switches, with removable earthing link 220kV, 50kA, single-phase, three-phase set (1 set = 3	5	Nos		
3.7.2.6	single phase) Voltage Transformers, 220kV, dual secondary, with earthing link,				

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations

Price Schedule

The company		who i Kates and Frices Schedule No. 5. Flant, Goods and Equipme	-			
Section   Sect	Item No.	Description	Qty	Unit	Unit Rate (b)	Total Price (c)
Transformer Disconnect Switches, 220kV, 4000A, 50kA, single-phase, three-phase set (1 set = 3 single phase)   Transformer Disconnect Switches, 220kV, 50kA, single-phase, three-phase set (1 set = 3 single phase)   Transformer Maintenance Earthing Switches, 220kV, 50kA, single-phase, three-phase set (1 set = 3 single phase)   Transformer Maintenance Earthing Switches, 220kV, 50kA, single-phase, three-phase set (1 set = 3 single phase)   Transformer Maintenance (Feb 20)   Transformer (Feb 20)   Transformer (Feb 20)   Transformer (Feb 20					US\$	US\$
Transformer Disconnect Switches, 220kV, 4000A, 50kA, single-phase, three-phase set (1 set = 3 single phase)   Transformer Disconnect Switches, 220kV, 50kA, single-phase, three-phase set (1 set = 3 single phase)   Transformer Maintenance Earthing Switches, 220kV, 50kA, single-phase, three-phase set (1 set = 3 single phase)   Transformer Maintenance Earthing Switches, 220kV, 50kA, single-phase, three-phase set (1 set = 3 single phase)   Transformer Maintenance (Feb 20)   Transformer (Feb 20)   Transformer (Feb 20)   Transformer (Feb 20					EXW plus all related	
Transformer Disconnect Switches, \$20kV, 4000A, 50kA, single-phase, three-phase set (1 set -3 single phase)   Sample, three-phase set (1 set -3 s						
Tarsformer Disconnect Switches, 220kV, 4000A, 50kA, single, phase, three-phase set (1 set = 3 single phase)   8						
3.7.2.1 Fransformer Disconnect Switches, 220K, 4000A, 50kA, single phase, three-phase set (1 set –3 single phase) 3.7.2.9 Bay Local Control Cabinet including device controls, instrumentation, interlocking, annuaciation, gas density monitoring, circuit breaker monitoring) 3.7.2.10 Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay) 3.7.2.11 U vortical and power called connections from Local Control Cabinet to to all GIS equipment/devices 3.7.2.12 All realist instructures and supports required for GIS complete with to all GIS equipment/devices 3.7.2.13 All walkways, platforms, stairs, ladders and accessories required for secess to all GIS devices 3.7.2.14 Individual power called the second control of the second control and power called structures and supports required for GIS complete with to all GIS equipment/devices 3.7.2.14 India gas a second control and power called connections from Local Control Cabinet to all GIS equipment/devices 3.7.2.15 The second control and power called connections from Local Control Cabinet to all GIS equipment/devices 3.7.2.14 India gas a large flags whiches, 220K, 4000A, 50kA, Single phase, and Gas Issulated Bus GIBIS for Spare Transformer, with auxiliary Bus, GIS to AIS Bushing termination, jumpers, required CT, AI. to be, metering, control and protection as required all complete. The second control and protection as required all complete. The second control of the second c			-			(7) (2)
phase, three-phase set (1 set = 3 single phase)  3.72.8 Improvemer daintenance tarbring Switches, 220kV, 50kA, single-phase, three-phase set (1 set = 3 single phase)  3.72.9 By Local Control Cabinet including device controls, instrumentation, interlooking, annunciation, gas density monitoring, circuit breaker monitoring)  3.72.10 Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay)  3.72.11 I. V. control and power cable connections from Local Control Cabinet in all Gis equipment (per bay)  3.72.12 All mentallic artectures and supports required for GIS complete with a consecurity of the control of GIS complete with a consecurity of GIS equipment (per bay)  3.72.14 All mentallic artectures and supports required for GIS complete with a consecurity of GIS equipment (per bay)  3.72.14 All will separate the connection from Local Control Cabinet in C					3	(1) x (3)
3.7.2.16   Transformer Maintenance Farthing Switches, 220KV, 50KA, single-phase, three-phase set (1 set = 3 single phase)   5   Nos	3.7.2.7		8	Nos		
plases, three-phase set (1 set = 3 single phase)  3.7.2.9 By Local Corntrol Cabhien including (device controls, instrumentation, interlocking, amunication, gas density monitoring, circuit breaker monitoring)  3.7.2.10 Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (fer bav)  3.7.2.11 LV control and power cable connections from Local Control Cabinet  to all Cits equipment/devices  3.7.2.12 All metallic structures and supports required for Gits complete with accessories  3.7.2.13 All walkways, platforms, stairs, ladders and accessories required for access to all Gits devices  3.7.2.14 Stolating & Farthing Switches, 220KV, 4000A, SOKA, Single phase, Gits to Alts Bushing termination, jumpers, required CT, Al.  tube, meeting, control and protection as required GIS Termination along with supports for GitB run for the whole  1. Transformer Bay  3.7.3.1 Binacer Middle Breaker Bay -220 kY  3.7.3.2 Control Breakers 220KV, 4000A, SOKA, three-pole.  3.7.3.3 Gitter Breakers 120KV, 4000A, SOKA, three-pole.  4. Sok Circuit Breakers 120KV, 4000A, SOKA, three-pole.  5. Sok Circuit Breakers All Breakers, 220KV, single-phase, three-phase set (1 set = 3 single phase)  3.7.3.3 Gitter Breakers Maintenance Earthing Switches, 220KV, 50KA, single-phase, three-phase, set (1 set = 3 single phase)  3.7.3.4 Circuit Breaker Maintenance Earthing Switches, 220KV, 50KA, single-phase, three-phase, set (1 set = 3 single phase)  3.7.3.5 By Local Control Cabinet including switches, 220KV, 50KA, single-phase, three-phase, set (1 set = 3 single phase)  3.7.3.6 Partial Discharge Monitoring System including monitoring sensors of the Switches, 220KV, single-phase, three-phase set (1 set = 3 single phase)  3.7.3.7 LV control and power cable connections from Local Control Cabinet on the Switches, 220KV, single-phase, three-phase set (1 set = 3 single phase)  3.7.3.7 LV control and power cable connections from Local Control Cabinet on the Cabinet on Conditions of Control and Power cable and supports required for		phase, three-phase set $(1 \text{ set} = 3 \text{ single phase})$				
3.7.2.10 Partial Discharge Motificing (alwive controls, instrumentation, interlocking, anumoriation, gas density monitoring, eiecut breaker monitoring) 3.7.2.11 Various and prosessing the process of the control of the process of the control and power cable connections from Local Control Cabinet to all GIS equipment devices to all GIS equipment devices and diagnostic equipment flore hay) 3.7.2.12 All realized structures and supports required for GIS complete with a cacessories 3.7.2.13 All walkways, platform, stairs, Indders and accessories required for secess to all GIS devices, 220kV, 4000A, 50kA, Single phase, and Gas Insulated Bus (GIII) for Spure Trumsformer, with auxiliary Bus, GIS to AIS Bushing termination, jumpers, required CT, AI, tube, metering, control and protection as required all complete.  3.7.2.14 If the series of the supports for GIB run for the whole remination along with supports for GIB run for the whole remination along with supports for GIB run for the whole remination along with supports for GIB run for the whole remination along with supports for GIB run for the whole remination along with supports for GIB run for the whole remination along with supports for GIB run for the whole remination along with supports for GIB run for the whole remination along with supports for GIB run for the whole remination along with supports for GIB run for the whole remination along with supports for GIB run for the whole remination along with supports for GIB run for the whole remination along with supports for GIB run for the whole remination along with supports for GIB run for the whole remination along with supports for GIB run for the whole remination along the supports for GIB run for the whole remination along the supports for GIB run for the whole remination along the supports for GIB run for the whole remination and dispose decoration run for gib run for the whole run for gib run for the whole run for gib run for g	3.7.2.8	Transformer Maintenance Earthing Switches, 220kV, 50kA, single-	8	Nos		
3.7.2.10 Partial Discharge Motificing (alwive controls, instrumentation, interlocking, anumoriation, gas density monitoring, eiecut breaker monitoring) 3.7.2.11 Various and prosessing the process of the control of the process of the control and power cable connections from Local Control Cabinet to all GIS equipment devices to all GIS equipment devices and diagnostic equipment flore hay) 3.7.2.12 All realized structures and supports required for GIS complete with a cacessories 3.7.2.13 All walkways, platform, stairs, Indders and accessories required for secess to all GIS devices, 220kV, 4000A, 50kA, Single phase, and Gas Insulated Bus (GIII) for Spure Trumsformer, with auxiliary Bus, GIS to AIS Bushing termination, jumpers, required CT, AI, tube, metering, control and protection as required all complete.  3.7.2.14 If the series of the supports for GIB run for the whole remination along with supports for GIB run for the whole remination along with supports for GIB run for the whole remination along with supports for GIB run for the whole remination along with supports for GIB run for the whole remination along with supports for GIB run for the whole remination along with supports for GIB run for the whole remination along with supports for GIB run for the whole remination along with supports for GIB run for the whole remination along with supports for GIB run for the whole remination along with supports for GIB run for the whole remination along with supports for GIB run for the whole remination along with supports for GIB run for the whole remination along with supports for GIB run for the whole remination along with supports for GIB run for the whole remination along the supports for GIB run for the whole remination along the supports for GIB run for the whole remination along the supports for GIB run for the whole remination and dispose decoration run for gib run for the whole run for gib run for the whole run for gib run for g						
instrumentation, interlocking, amunication, gas density monitoring, circuit breaker monitoring)  3.72.110  Partial Discharge Monitoring Systems including monitoring sensors and diagnostic equipment for basy)  3.72.121 All monitoring density of the state of the stat	3.7.2.9		6	Nos		
circuit breaker monitoring)  3.7.2.10 extend lossharpe Monitoring System including monitoring sensors and diagnostic equipment foor bay)  3.7.2.11   Vaccinet and power cable connections from Local Control Cabinet to all GIS equipment/devices  3.7.2.12   All maliculars including monitoring sensors  accessories patrioring static for GIS complete with to all GIS equipment/devices  3.7.2.13   Solating & Earthing Switches, 220KV, 4000A, 50KA, Single phase, three-phase set (1 set = 3 single phase)  3.7.2.14   Solating & Earthing Switches, 220KV, 4000A, 50KA, single phase, three-phase set (1 set = 3 single phase)  3.7.2.15   Single Phase, three-phase set (1 set = 3 single phase)  3.7.3.16   Single Phase, three-phase set (1 set = 3 single phase)  3.7.3.17   Vaccinetial Control Cabinet including (device controls, mistromentation, interpretation, gast devices, and disposite equipment (per bay)  3.7.3.20   Single Phase, three-phase set (1 set = 3 single phase)  3.7.3.31   Single Phase, three-phase set (1 set = 3 single phase)  3.7.3.32   Single Phase, three-phase set (1 set = 3 single phase)  3.7.3.33   Single Phase, three-phase set (1 set = 3 single phase)  3.7.3.44   Single Phase, three-phase set (1 set = 3 single phase)  3.7.3.55   Single Phase, three-phase set (1 set = 3 single phase)  3.7.3.66   Partiol Breaker Maintenance Earthing Switches, 220KV, 4000A, 50KA, single-phase, three-phase set (1 set = 3 single phase)  3.7.3.49   Vaccinetial Cabinetial Science and Single Phase, single	3171219		Ů	1,05		
3.7.2.10   Partial Discharge Monitoring System including monitoring sensors and disposotic equipment (per bay)   3.7.2.11   LV control and power cable connections from Local Control Cabinet to all GIS equipment(device)   3.7.2.12   All metallic structures and supports required for GIS complete with accessories value of the control of						
and diagnostic equipment (per bay)  3.7.2.11   All metallic structures and supports required for GIS complete with accessories  3.7.2.12   All metallic structures and supports required for GIS complete with accessories  3.7.2.13   All walkways, platforms, stairs, ladders and accessories required for GIS complete with access to all GIS devices  3.7.2.14   All walkways, platforms, stairs, ladders and accessories required for GIS and an accessories for GIS and access to all GIS devices  3.7.2.15   Solding & Fairthing Switches, 220K v, 4000A, 50KA, Single phase, and GIS annualted Bus (GIB) for Spar Transformer, with auxiliary Bus, GIS to AIS Bushing termination, jumpers, required CT, Al. tube, meeting, control and protection as required all complete.  3.7.2.15   Three Single Phase Gas Insulated bus (GIB) and required GIS Termination along with supports for GIB run for the whole Transformer Bay  3.7.3.10   Diameter Middle Breaker Bay - 220 kV   Transformer Bay   Transformer						
1.   Lv control and power cable connections from Local Control Cabinet   1	3.7.2.10		6	Nos		
to all GIS equipment/devices  3.7.2.12 All metallic structures and supports required for GIS complete with accessories  3.7.2.14 all walkways, platforms, stairs, ladders and accessories required for access to all GIS devices  3.7.2.14 and Gas Insulated Bus (GIB) for Spare Transformer, with auxiliary Bus, GIS to AIS Bushing termination, jumpers, required CT, AI to the metallic structures are required and protection as required all complete.  3.7.2.15 Three Single Phase Gas Insulated bus (GIB) and required GIS Termination along with supports for CIB run for the whole Transformer Bay  3.7.3.1 Diameter Middle Breaker Bay -220 kY  3.7.3.2 Diameter Middle Breaker Bay -220 kY  3.7.3.3 Diameter Middle Breaker Bay -220 kY  3.7.3.3 Fe Circuit Breakers, 220kV, 4000A, 50kA, three-pole.  3.7.3.4 Circuit Breakers And Minternance Earthing Switches, 220kV, 4000A, 50kA, single-phase, three-phase set (I set = 3 single phase)  3.7.3.4 Circuit Breaker Maintenance Earthing Switches, 220kV, 4000A, 50kA, single-phase, three-phase set (I set = 3 single phase)  3.7.3.5 Diameter Middle Breaker Maintenance Earthing Switches, 220kV, 4000A, 50kA, single-phase, three-phase set (I set = 3 single phase)  3.7.3.6 Partial Discharge Montroling System including device controls, instrumentation, introduction, gas density monitoring, circuit breaker monitoring)  3.7.3.6 Partial Discharge Montroling System including monitoring sensors and diagnostic equipment (per bay)  3.7.3.7 IV control and power cable connections from Local Control Cabinet in Control Cabinet in		and diagnostic equipment (per bay)				
to all GIS equipment/devices  3.7.2.12 All metallic structures and supports required for GIS complete with accessories  3.7.2.14 all walkways, platforms, stairs, ladders and accessories required for access to all GIS devices  3.7.2.14 and Gas Insulated Bus (GIB) for Spare Transformer, with auxiliary Bus, GIS to AIS Bushing termination, jumpers, required CT, AI to the metallic structures are required and protection as required all complete.  3.7.2.15 Three Single Phase Gas Insulated bus (GIB) and required GIS Termination along with supports for CIB run for the whole Transformer Bay  3.7.3.1 Diameter Middle Breaker Bay -220 kY  3.7.3.2 Diameter Middle Breaker Bay -220 kY  3.7.3.3 Diameter Middle Breaker Bay -220 kY  3.7.3.3 Fe Circuit Breakers, 220kV, 4000A, 50kA, three-pole.  3.7.3.4 Circuit Breakers And Minternance Earthing Switches, 220kV, 4000A, 50kA, single-phase, three-phase set (I set = 3 single phase)  3.7.3.4 Circuit Breaker Maintenance Earthing Switches, 220kV, 4000A, 50kA, single-phase, three-phase set (I set = 3 single phase)  3.7.3.5 Diameter Middle Breaker Maintenance Earthing Switches, 220kV, 4000A, 50kA, single-phase, three-phase set (I set = 3 single phase)  3.7.3.6 Partial Discharge Montroling System including device controls, instrumentation, introduction, gas density monitoring, circuit breaker monitoring)  3.7.3.6 Partial Discharge Montroling System including monitoring sensors and diagnostic equipment (per bay)  3.7.3.7 IV control and power cable connections from Local Control Cabinet in Control Cabinet in	3.7.2.11	LV control and power cable connections from Local Control Cabinet	1	Lot		
3.7.2.1.2 All metallic structures and supports required for GIS complete with a cacessories 3.7.2.1.3 All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices 6.6. In the caces of GIS devices 6.6. In the caces of GIS devices 8.7.2.1.4 In the caces of GIS devices 8.7.2.1.5 The Caces of GIS devices 8.7.2.1.5 The Caces of GIS and SIS Busing termination, jumpers, required CT, Al, tube, metering, control and protection as required all complete.  3.7.2.1.5 The Single Phase GIS insulated bus (GIB) and required GIS Termination along with supports for GIB run for the whole Transformer Bay 8.7.3.1 Single Phase GIS insulated bus (GIB) and required GIS Termination along with supports for GIB run for the whole Transformer Bay 8.7.3.3 Diameter Middle Breaker Bay -220 kV 8.7.3.3.1 Single Phase (Circuit Breakers 220kV, 4000, A) Single-phase, three-phase set (1 set –3 single phase) 8.7.3.3 Current Transformer Medules, three cores, 220kV, 4000A, 12 Nos three-phase set (1 set –3 single phase) 8.7.3.4 Circuit Breaker Indiantenance Earthing Switches, 220kV, 4000A, 12 Nos single-phase, three-phase set (1 set –3 single phase) 8.7.3.5 Bay Local Control Cabinet including government for the substitute breaker monitoring circuit breaker monitoring structure br						
accessories  3.7.2.14  3.7.2.15  3.7.2.16  1. Lot access to all GIS devices  3.7.2.17  1. Lot access to all GIS devices  3.7.2.19  3.7.2.19  3.7.2.19  3.7.2.19  3.7.2.19  3.7.2.10  3.7.2	3 7 2 12		1	Lot		
All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices	3.7.2.12		1	Lot		
access to all GIS devices 3.7.2.14   Solitaring & Earthing Switches, 220kV, 4000A, 50kA,Single phase, and Gas Insulated Bus (GIB) for Spare Transformer, with auxiliary Bus, GIS to A1S Bushing termination, jumpers, required CT, A1, the meeting, control and protection are required all complete.  3.7.2.15   Three Single Phase Gas Insulated bus (GIB) and required GIS Termination along with supports for GIB run for the whole Transformer Bay 3.7.3.10   Three Single Phase Gas Insulated bus (GIB) and required GIS Transformer Bay 3.7.3.11   SF6 Circuit Breakers, 220kV, 4000A, 50kA, three-pole.   6						
Soluting & Earthing Switches, 220kV, 4000A, 50kA,Single phase, and Gas Insulated Bus (GIB) for Spare Transformer, with auxiliary Bus, GIS to AIS Bushing termination, jumpers, required CT, AI, tube, metering, control and protection as required all complete.	3.7.2.13		1	Lot		
and Gas Insulated Bus (GIB) for Spare Transformer, with auxiliary Bus, GIS to AIS Bushing termination, jumpers, required CT, AI, tible, metering, control and protection as required all complete.  3.7.2.15 Three Single Phase Gas Insulated bus (GIB) and required GIS Termination along with supports for GIB run for the whole Transformer Bay  3.7.3.1 SP6 Circuit Breakers, 220kV, 4000A, 50kA, three-pole. 3.7.3.2 Current Transformer Modules, three cores, 220kV, single-phase, three-phase set (1 set = 3 single phase) 3.7.3.3 Circuit Breakers (1 set = 3 single phase) 3.7.3.3 Circuit Breaker Isolating Disconnect Switches, 220kV, 4000A, 50kA, single-phase, three-phase set (1 set = 3 single phase) 3.7.3.4 Circuit Breaker Maintenance Earthing Switches, 220kV, 50kA, single-phase, three-phase set (1 set = 3 single phase) 3.7.3.5 Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring) 3.7.3.6 Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay) 3.7.3.7 LV control and power cable connections from Local Control Cabinet 1 Lot to all GIS equipment/devices 3.7.3.8 All metallic structures and supports required for GIS complete with accessories 3.7.3.9 All walkwaws, platforms, stairs, ladders and accessories required for accessor to all GIS devices 3.7.4 Cas Insulated Bus bars 3.7.4.1 Voltage Transformers, 220kV, dual secondary, single-phase, three- phase set (1 set = 3 single phase) 3.7.4.3 Main Bus Bar High Speed Earthing Switches, vith removable earthing link 220kV, 50kA, Single-phase, three- phase set (1 set = 3 single phase) 3.7.4.3 Bus Bar Isolating Disconnect Switches, 220kV, 4000A, 50kA, single phase, three-phase set (1 set = 3 single phase) 3.7.4.5 Other necessary works as per Employer's Requirement and conditions of Contract, if any, not included above (specify)  Sub Total 3.7  Sub Total 3.7  Sub Total 3.7  Complete with control and Protection panels for 400 kV station as specified in						
and Gas Insulated Bus (GIB) for Spare Transformer, with auxiliary Bus, GIS to AIS Bushing termination, jumpers, required CT, AI, tible, metering, control and protection as required all complete.  3.7.2.15 Three Single Phase Gas Insulated bus (GIB) and required GIS Termination along with supports for GIB run for the whole Transformer Bay  3.7.3.1 SP6 Circuit Breakers, 220kV, 4000A, 50kA, three-pole. 3.7.3.2 Current Transformer Modules, three cores, 220kV, single-phase, three-phase set (1 set = 3 single phase) 3.7.3.3 Circuit Breakers (1 set = 3 single phase) 3.7.3.3 Circuit Breaker Isolating Disconnect Switches, 220kV, 4000A, 50kA, single-phase, three-phase set (1 set = 3 single phase) 3.7.3.4 Circuit Breaker Maintenance Earthing Switches, 220kV, 50kA, single-phase, three-phase set (1 set = 3 single phase) 3.7.3.5 Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring) 3.7.3.6 Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay) 3.7.3.7 LV control and power cable connections from Local Control Cabinet 1 Lot to all GIS equipment/devices 3.7.3.8 All metallic structures and supports required for GIS complete with accessories 3.7.3.9 All walkwaws, platforms, stairs, ladders and accessories required for accessor to all GIS devices 3.7.4 Cas Insulated Bus bars 3.7.4.1 Voltage Transformers, 220kV, dual secondary, single-phase, three- phase set (1 set = 3 single phase) 3.7.4.3 Main Bus Bar High Speed Earthing Switches, vith removable earthing link 220kV, 50kA, Single-phase, three- phase set (1 set = 3 single phase) 3.7.4.3 Bus Bar Isolating Disconnect Switches, 220kV, 4000A, 50kA, single phase, three-phase set (1 set = 3 single phase) 3.7.4.5 Other necessary works as per Employer's Requirement and conditions of Contract, if any, not included above (specify)  Sub Total 3.7  Sub Total 3.7  Sub Total 3.7  Complete with control and Protection panels for 400 kV station as specified in	3.7.2.14	Isolating & Earthing Switches, 220kV, 4000A, 50kA, Single phase,	3	Set		
Bus, GIS to AIS Bushing termination, jumpers, required CT, AI, tube, metering, control and protection as required all complete.  3.7.2.15 Three Single Phase Gas Insulated bus (GIB) and required GIS Termination along with supports for GIB run for the whole Transformer Bay 3.7.3.3 Diameter Middle Breakers Bay -220 kV 3.7.3.1 SF6 Circuit Breakers, 220kV, 4000A, 50kA, three-pole. 3.7.3.2 Current Transformer Modules, three cores, 220kV, single-phase, three-phase set (1 set = 3 single phase) 3.7.3.3 Circuit Breakers disting Disconnect Switches, 220kV, 4000A, 50kA, single-phase, three-phase set (1 set = 3 single phase) 3.7.3.4 Circuit Breakers disting Disconnect Switches, 220kV, 50kA, 12 Nos Single-phase, three-phase set (1 set = 3 single phase) 3.7.3.5 Bay Local Control Cabinet including (device controls, instrumentation, interfocking, annunciation, gas density monitoring, circuit breaker monitoring) 3.7.3.6 Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay) 3.7.3.7 LV control and power cable connections from Local Control Cabinet 1 Lot to 18 (18 equipment/devices) 3.7.3.8 All metallic structures and supports required for GIS complete with a cessories 3.7.3.9 All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices 3.7.4 Ga Insulated Bus bars 3.7.4.1 220kV , Jouble 3 single phase (isolated), SF6 gas insulated, metal enclosed 4000A bus bars each enclosed in three individual bus enclosures per diameter 3.7.4.2 Voltage Transformers, 220kV, dual secondary, single-phase, three-phase set (1 set = 3 single phase) 3.7.4.3 Bus Bar Isolating Disconnect Switches, 220kV, 4000A, 50kA, single phase, three-phase set (1 set = 3 single phase) 3.7.4.9 Bus Bar Isolating Disconnect Switches, 220kV, 4000A, 50kA, single phase, three-phase set (1 set = 3 single phase) 3.7.4.9 Complete with control & protection panels for 400 kV station as specified in Complete set of Control and Protection panels for 400 kV station as specified in Sall.1 Circuit Breaker			Ī			
tube, metering, control and protection as required all complete.  3.7.2.15 Termination along with supports for GIB run for the whole Transformer Bay  3.7.3.1 Diameter Middle Breaker Bay -220 kV  3.7.3.1 SF6 Circuit Breakers, 220kV, 4000A, 50kA, three-pole. 6 Nos 3.7.3.2 Circuit Breaker Major modules, three cores, 220kV, single-phase, three-phase set (1 set = 3 single phase) 3.7.3.3 Circuit Breaker Isolating Disconnect Switches, 220kV, 4000A, 50kA, single-phase, three-phase set (1 set = 3 single phase) 3.7.3.4 Circuit Breaker Maintenance Earthing Switches, 220kV, 50kA, 50kA, single-phase, three-phase set (1 set = 3 single phase) 3.7.3.5 Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring) 3.7.3.6 Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay) 3.7.3.7 LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices 3.7.3.8 All metallic structures and supports required for GIS complete with accessories 3.7.3.9 All walkways, platforms, stairs, ladders and accessories required for a cacess to all GIS devices 3.7.4.1 220kV , Double 3 single phase (isolated), SF6 gas insulated, metal enclosed 4000A bus bars each enclosed in three individual bus enclosures per diameter 3.7.4.2 Voltage Transformers, 220kV, dual secondary, single-phase, three- phase set (1 set = 3 single phase)  3.7.4.3 Main Bus Bar High Speed Earthing Switches, 220kV, 4000A, 50kA, single- phase, three-phase set (1 set = 3 single phase)  3.7.4.4 Bus Bar Isolating Disconnect Switches, 220kV, 4000A, 50kA, single- phase, three-phase set (1 set = 3 single phase)  3.7.4.3 Complete with control & protection up to GIB sealing end for all Feeder and  Conditions of Contract, if any, not included above (specify)  Sub Total 3.7  Lice in Protection Panel (Note: BCU should be included in the Relay Panel)  3.8.1.1 Ci			Ī			
3.7.2.15 Three Single Phase Gas Insulated bus (GIB) and required GIS Termination along with supports for GIB run for the whole Transformer Bay  3.7.3.1 SFG Circuit Breaker Bay -220 kV  3.7.3.2 Current Transformer Modules, three cores, 220kV, single-phase, three-phase set (1 set = 3 single phase)  3.7.3.3 Current Breaker Isolating Disconnect Switches, 220kV, 4000A, 50kA, single-phase, three-phase set (1 set = 3 single phase)  3.7.3.4 Circuit Breaker Rainting Switches, 220kV, 4000A, 50kA, single-phase, three-phase set (1 set = 3 single phase)  3.7.3.5 Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring)  3.7.3.6 Parlial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay)  3.7.3.7 to all GIS equipment/devices  3.7.3.8 All metallic structures and supports required for GIS complete with a accessories  3.7.3.9 All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices  3.7.4 Gas Insulated Bus bars  3.7.4.1 220kV, Double 3 single phase (isolated), SF6 gas insulated, metal enclosed 4000A bus bars each enclosed in three individual bus enclosed 4000A bus bars each enclosed in three individual bus enclosed 4000A bus bars each enclosed in three individual bus enclosed 4000A bus bars each enclosed in three individual bus enclosed 4000A bus bars each enclosed in three individual bus enclosed 4000A bus bars each enclosed in three individual bus enclosed 4000A bus bars each enclosed in three individual bus enclosed 4000A bus bars each enclosed in three individual bus enclosed 4000A bus bars each enclosed in three individual bus enclosed 4000A bus bars each enclosed in three individual bus enclosed 4000A bus bars each enclosed in three individual bus enclosed 4000A bus bars each enclosed in three individual bus enclosed 4000A bus bars each enclosed in three individual bus enclosed 4000A bus bars each enclosed in three individual bus enclosed 4000A bus bars			Ī			
Termination along with supports for GIB run for the whole Transformer Bay  3.7.3.1 Diameter Middle Breaker Bay -220 kV  3.7.3.1 SF6 Circuit Breakers, 220kV, 4000A, 50kA, three-pole.  3.7.3.2 Circuit Breakers, 220kV, 4000A, 50kA, three-phase, three-phase set (1 set = 3 single phase)  3.7.3.3 Circuit Breaker Isolating Disconnect Switches, 220kV, 4000A, 50kA, single-phase, three-phase set (1 set = 3 single phase)  3.7.3.4 Circuit Breaker Maintenance Earthing Switches, 220kV, 50kA, 12 Nos single-phase, three-phase set (1 set = 3 single phase)  3.7.3.5 Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring)  3.7.3.6 Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay)  3.7.3.7 LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices  3.7.3.8 All metallic structures and supports required for GIS complete with accessories  3.7.3.9 All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices  3.7.4.1 Cas Insulated Bus bars  3.7.4.1 Cas Insulated Bus bars  3.7.4.2 Voltage Transformers, 220kV, dual secondary, single-phase, three-phase set (1 set = 3 single phase)  3.7.4.3 Main Bus Bar High Speed Earthing Switches, with removable earthing link 220kV, SokA, Single-phase, three-phase set (1 set = 3 single phase)  3.7.4.3 Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  Sub Total 3.7  Sub Total 3.7  Complete with control & protection up to GIB sealing end for all Feeder and Sal.1 Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel)  3.8.1.1 Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel)  3.8.1.2 Line Protection Panel bear of the protection panel bear of the protection terminals)						
Transformer Bay    Januari	3.7.2.15		6	Bays		
3.7.3.1 Diameter Middle Breaker Bav -220 kV 3.7.3.1 SF6 Circuit Breakers, 220kV, 4000A, 50kA, three-pole. 3.7.3.2 Current Transformer Modules, three cores, 220kV, 4000A, 50kA, single-phase, three-phase set (1 set = 3 single phase) 3.7.3.3 Circuit Breaker Isolating Disconnect Switches, 220kV, 4000A, 50kA, single-phase, three-phase set (1 set = 3 single phase) 3.7.3.4 Circuit Breaker Bave Let = 3 single phase) 3.7.3.5 Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring) 3.7.3.5 Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay) 3.7.3.7 LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices 3.7.3.9 All walkways, platforms, stairs, ladders and accessories required for accessories and lading sostic equipment (per bay) 3.7.3.1 All walkways, platforms, stairs, ladders and accessories required for access to all GIS edvices 3.7.4 Gas Insulated Bus bars 3.7.4.1 20kV, Double 3 single phase (isolated), SF6 gas insulated, metal enclosed 4000A bus bars each enclosed in three individual bus enclosures per diameter 3.7.4.2 Voltage Transformers, 220kV, dual secondary, single-phase, three-phase set (1 set = 3 single phase) 3.7.4.3 Main Bus Bar High Speed Earthing Switches, with removable earthing link 220kV, Sb(A, Single-phase, with removable earthing link 220kV, Sb(A, Single-phase) 4 Complete with control & protection up to GIB sealing end for all Feeder and Sal.1 Complete with control & protection up to GIB sealing end for all Feeder and Sal.1 Complete set of Control and Protection panels for 400 kV station as specified in Sal.1 Circuit Breaker Relay Panel (Note: line protection should include tele protection terminals) 3.8.1.3 Iransformer Protection Panel (Note: line protection should include tele protection terminals) 3.8.1.3 Iransformer Protection Panel		Termination along with supports for GIB run for the whole				
3.7.3.1 Diameter Middle Breaker Bav -220 kV 3.7.3.1 SF6 Circuit Breakers, 220kV, 4000A, 50kA, three-pole. 3.7.3.2 Current Transformer Modules, three cores, 220kV, 4000A, 50kA, single-phase, three-phase set (1 set = 3 single phase) 3.7.3.3 Circuit Breaker Isolating Disconnect Switches, 220kV, 4000A, 50kA, single-phase, three-phase set (1 set = 3 single phase) 3.7.3.4 Circuit Breaker Bave Let = 3 single phase) 3.7.3.5 Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring) 3.7.3.5 Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay) 3.7.3.7 LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices 3.7.3.9 All walkways, platforms, stairs, ladders and accessories required for accessories and lading sostic equipment (per bay) 3.7.3.1 All walkways, platforms, stairs, ladders and accessories required for access to all GIS edvices 3.7.4 Gas Insulated Bus bars 3.7.4.1 20kV, Double 3 single phase (isolated), SF6 gas insulated, metal enclosed 4000A bus bars each enclosed in three individual bus enclosures per diameter 3.7.4.2 Voltage Transformers, 220kV, dual secondary, single-phase, three-phase set (1 set = 3 single phase) 3.7.4.3 Main Bus Bar High Speed Earthing Switches, with removable earthing link 220kV, Sb(A, Single-phase, with removable earthing link 220kV, Sb(A, Single-phase) 4 Complete with control & protection up to GIB sealing end for all Feeder and Sal.1 Complete with control & protection up to GIB sealing end for all Feeder and Sal.1 Complete set of Control and Protection panels for 400 kV station as specified in Sal.1 Circuit Breaker Relay Panel (Note: line protection should include tele protection terminals) 3.8.1.3 Iransformer Protection Panel (Note: line protection should include tele protection terminals) 3.8.1.3 Iransformer Protection Panel		Transformer Bay				
3.7.3.1 SF6 Gircuit Breakers, 220kV, 4000A, 50kA, three-pole. 6 Nos 3.7.3.2 Current Transformer Modules, three cores, 220kV, single-phase, 12 Nos three-phase set (1 set = 3 single phase) 3.7.3.3 Circuit Breaker Isolating Disconnect Switches, 220kV, 4000A, 12 Nos 50kA, single-phase, three-phase set (1 set = 3 single phase) 3.7.3.4 Circuit Breaker Maintenance Earthing Switches, 220kV, 50kA, single-phase, three-phase set (1 set = 3 single phase) 3.7.3.5 Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring) 3.7.3.6 Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay) 3.7.3.7 LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices 3.7.3.8 All metallic structures and supports required for GIS complete with accessories 3.7.3.9 All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices 3.7.4 Gas Insulated Bus bars 3.7.4.1 220kV , Double 3 single phase (isolated), SF6 gas insulated , metal enclosed 4000A bus bars each enclosed in three individual bus enclosures per diameter 3.7.4.2 Voltage Transformers, 220kV, dual secondary, single-phase, three- phase set (1 set = 3 single phase) 3.7.4.3 Bus Bar Isolating Disconnect Switches, with removable earthing link 220kV, 50kA, Single-phase, Three-phase set (1 set = 3 single phase) 3.7.5 Ohre necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  3.8.1 Complete with control & protection up to GIB sealing end for all Feeder and 3.8.1 Complete set of Control and Protection panels for 400 kV station as specified in 3.8.1.1 Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel) 3.8.1.3 Transformer Protection Panel	3.7.3					
3.7.3.2 Current Transformer Modules, three cores, 220kV, single-phase, three-phase set (1 set = 3 single phase)  3.7.3.3 Circuit Breaker Isolating Disconnect Switches, 220kV, 4000A, 50kA, single-phase, three-phase set (1 set = 3 single phase)  3.7.3.4 Circuit Breaker Maintenance Earthing Switches, 220kV, 50kA, single-phase, three-phase set (1 set = 3 single phase)  3.7.3.5 Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annuciation, gas density monitoring, circuit breaker monitoring)  3.7.3.6 Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay)  3.7.3.7 LV control and power cable connections from Local Control Cabinet in to all GIS equipment/devices  3.7.3.8 All metallic structures and supports required for GIS complete with accessories  3.7.4 Law (1 metallic structures and supports required for GIS complete with accessories to all GIS devices  3.7.4 Cas Insulated Bus bars  3.7.4.1 20kV, Double 3 single phase (isolated), SF6 gas insulated, metal enclosed 4000A bus bars each enclosed in three individual bus enclosures per diameter  3.7.4.2 Voltage Transformers, 220kV, dual secondary, single-phase, three-phase set (1 set = 3 single phase)  3.7.4.3 Main Bus Bar High Speed Earthing Switches, with removable carthing link 220kV, 50kA, Single-phase, Three-phase set (1 set = 3 single phase)  3.7.4.3 Main Bus Bar High Speed Earthing Switches, with removable carthing link 220kV, 50kA, Single-phase, Three-phase set (1 set = 3 single phase)  3.7.5 Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  3.8 Complete with control & protection up to GIB sealing end for all Feeder and Conditions of Contract, if any, not included above (specify)  3.8 Complete with control & protection panels for 400 kV station as specified in Sall.1 Circuit Breaker Relay Panel (Note: BcU should be included in the Relay Panel)  3.8.1.1 Circuit Breaker Relay Panel (Note: BcU should be included in the Pr		SE6 Circuit Breakers 220kV 4000A 50kA three-nole	6	Noc		
three-phase set (1 set = 3 single phase)  3.73.3   Circuit Breaker Isolating Disconnect Switches, 220kV, 4000A, 50kA, single-phase, three-phase set (1 set = 3 single phase)  3.73.4   Circuit Breaker Maintenance Earthing Switches, 220kV, 50kA, 5ingle-phase, three-phase set (1 set = 3 single phase)  3.73.5   Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring)  3.73.6   Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay)  3.73.7   LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices  3.73.8   All metallic structures and supports required for GIS complete with accessories  3.73.9   All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices  3.74.   Gas Insulated Bus bars  3.74.1   220kV, Double 3 single phase (isolated), SF6 gas insulated, metal enclosed 4000A bus bars each enclosed in three individual bus enclosures per diameter  3.74.2   Voltage Transformers, 220kV, dual secondary, single-phase, three-phase set (1 set = 3 single phase)  3.74.3   Main Bus Bar High Speed Earthing Switches, with removable earthing link 220kV, 50kA, Single-phase, Three-phase set (1 set = 3 single phase)  3.75.   Other necessary works as per Employer's Requirement and Conditions of Control and Protection panels for 400 kV station as specified in Sal.1   Complete set of Control and Protection panels for 400 kV station as specified in Sal.1   Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel)  3.81.1   Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel)  3.81.2   Line Protection Panel (Note: line protection should include tele protection terminals)						
3.7.3.3   Circuit Breaker Isolating Disconnect Switches, 220kV, 4000A, 50kA, single-phase, three-phase set (1 set = 3 single phase) 3.7.3.4   Circuit Breaker Maintenance Earthing Switches, 220kV, 50kA, single-phase, three-phase set (1 set = 3 single phase) 3.7.3.5   Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring) 3.7.3.6   Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay) 3.7.3.7   LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices 3.7.3.8   All metallic structures and supports required for GIS complete with accessories 3.7.3.9   All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices 3.7.4   Gas Insulated Bus bars 3.7.4.1   220kV , Double 3 single phase (isolated), SF6 gas insulated , metal enclosed 4000A bus bars each enclosed in three individual bus enclosures per diameter 3.7.4.2   Voltage Transformers, 220kV, dual secondary, single-phase, three-phase set (1 set = 3 single phase) 3.7.4.3   Main Bus Bar High Speed Earthing Switches, with removable earthing link 220kV, 50kA, Single-phase, Three-phase set (1 set = 3 single phase) 3.7.4.4   Bus Bar Solating Disconnect Switches, 220kV, 4000A, 50kA, single-phase, three-phase set (1 set = 3 single phase) 3.7.5   Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  3.8   Complete with control & protection up to GIB sealing end for all Feed=r and 3.8.1   Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel) 3.8.1.2   Line Protection Panel (Note: Bic protection should include tele protection terminals) 3.8.1.3   Transformer Protection Panel   United Substation as specified in 12   Nos   Panel Protection Panel   Note: BCU should be included in the protection terminals   Panel Protection Panel   United Substation as specified in 12   Nos   Panel Pa	3.7.3.2		12	INOS		
SOKA, single-phase, three-phase set (1 set = 3 single phase)   SOKA, single-phase, three-ph		three-phase set (1 set = 3 single phase)				
3.7.3.4   Circuit Breaker Maintenance Earthing Switches, 220kV, 50kA, single-phase, three-phase set (1 set = 3 single phase) 3.7.3.5   Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring) 3.7.3.6   Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay) 3.7.3.7   LV control and power cable connections from Local Control Cabinet to all IGIS equipment/devices 3.7.3.8   All metallic structures and supports required for GIS complete with accessories 3.7.3.9   All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices 3.7.4   Gas Insulated Bus bars 3.7.4.1   220kV, Double 3 single phase (isolated), SF6 gas insulated, metal enclosed 4000A bus bars each enclosed in three individual bus enclosures per diameter 3.7.4.2   Voltage Transformers, 220kV, dual secondary, single-phase, three-phase set (1 set = 3 single phase) 3.7.4.3   Main Bus Bar High Speed Earthing Switches, with removable enthing link 220kV, 50kA, Single-phase, Three-phase set (1 set = 3 single phase) 3.7.4.4   Bus Bar Isolating Disconnect Switches, 220kV, 4000A, 50kA, single phase, three-phase set (1 set = 3 single phase) 3.7.5   Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  3.8   Complete with control & protection up to GIB sealing end for all Feeder and 3.8.1.1   Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel) 3.8.1.2   Line Protection Panel (Note: line protection should include tele protection terminals) 3.8.1.3   Transformer Protection Panel	3.7.3.3	Circuit Breaker Isolating Disconnect Switches, 220kV, 4000A,	12	Nos		
3.7.3.4   Circuit Breaker Maintenance Earthing Switches, 220kV, 50kA, single-phase, three-phase set (1 set = 3 single phase) 3.7.3.5   Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring) 3.7.3.6   Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay) 3.7.3.7   LV control and power cable connections from Local Control Cabinet to all IGIS equipment/devices 3.7.3.8   All metallic structures and supports required for GIS complete with accessories 3.7.3.9   All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices 3.7.4   Gas Insulated Bus bars 3.7.4.1   220kV, Double 3 single phase (isolated), SF6 gas insulated, metal enclosed 4000A bus bars each enclosed in three individual bus enclosures per diameter 3.7.4.2   Voltage Transformers, 220kV, dual secondary, single-phase, three-phase set (1 set = 3 single phase) 3.7.4.3   Main Bus Bar High Speed Earthing Switches, with removable enthing link 220kV, 50kA, Single-phase, Three-phase set (1 set = 3 single phase) 3.7.4.4   Bus Bar Isolating Disconnect Switches, 220kV, 4000A, 50kA, single phase, three-phase set (1 set = 3 single phase) 3.7.5   Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  3.8   Complete with control & protection up to GIB sealing end for all Feeder and 3.8.1.1   Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel) 3.8.1.2   Line Protection Panel (Note: line protection should include tele protection terminals) 3.8.1.3   Transformer Protection Panel		50kA, single-phase, three-phase set (1 set = 3 single phase)				
single-phase, three-phase set (1 set = 3 single phase)  3.7.3.5 Bay Local Control Cabinet including (device controls, interlocking, annunciation, gas density monitoring, circuit breaker monitoring)  3.7.3.6 Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay)  3.7.3.7 LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices  3.7.3.8 All metallic structures and supports required for GIS complete with accessories  3.7.3.9 All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices  3.7.4 Cas Insulated Bus bars  3.7.4.1 220kV, Double 3 single phase (isolated), SF6 gas insulated, metal enclosed 4000A bus bars each enclosed in three individual bus enclosures per diameter  3.7.4.2 Voltage Transformers, 220kV, dual secondary, single-phase, three-phase set (1 set = 3 single phase)  3.7.4.3 Main Bus Bar High Speed Earthing Switches, with removable earthing link 220kV, 50kA, Single-phase, Three-phase set (1 set = 3 single phase)  3.7.4.4 Bus Bar Isolating Disconnect Switches, 220kV, 4000A, 50kA, single phase, three-phase set (1 set = 3 single phase)  3.7.5 Other necessary works as per Employer's Requirement and conditions of Contract, if any, not included above (specify)  3.8.1 Complete with control & protection up to GIB sealing end for all Feeder and 3.8.1 Complete set of Control and Protection panels for 400 kV station as specified in Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel)  3.8.1.2 Line Protection Panel (Note: BCU should be included in the protection terminals)  3.8.1.3 Transformer Protection Panel	3.7.3.4		12	Nos		
3.7.3.5 Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring)  3.7.3.6 Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay)  3.7.3.7 LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices  3.7.3.8 All metallic structures and supports required for GIS complete with accessories accessories and general connections from Local Control Cabinet to all GIS equipment/devices  3.7.3.9 All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices  3.7.4 Gas Insulated Bus bars  3.7.4.1 220kV , Double 3 single phase (isolated), SF6 gas insulated, metal enclosed 4000A bus bars each enclosed in three individual bus enclosures per diameter  3.7.4.2 Voltage Transformers, 220kV, dual secondary, single-phase, three-phase set (1 set = 3 single phase)  3.7.4.3 Main Bus Bar High Speed Earthing Switches, with removable earthing link 220kV, 50kA, Single-phase, Three-phase set (1 set = 3 single phase)  3.7.4.4 Bus Bar Isolating Disconnect Switches, 220kV, 4000A, 50kA, single phase, three-phase set (1 set = 3 single phase)  3.7.5 Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  3.8.1 Complete with control & protection up to GIB sealing end for all Feeder and Sa.1 Complete set of Control and Protection panels for 400 kV station as specified in Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel)  3.8.1.2 Line Protection Panel (Note: line protection should include tele protection terminals)  3.8.1.3 Iransformer Protection Panel		•				
instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring)  3.7.3.6 Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay)  3.7.3.7 LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices  3.7.3.8 All metallic structures and supports required for GIS complete with accessories  3.7.3.9 All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices  3.7.4 Gas Insulated Bus bars  3.7.4.1 220kV, Double 3 single phase (isolated), SF6 gas insulated, metal enclosed 4000A bus bars each enclosed in three individual bus enclosures per diameter  3.7.4.2 Voltage Transformers, 220kV, dual secondary, single-phase, three-phase set (1 set = 3 single phase)  3.7.4.3 Main Bus Bar High Speed Earthing Switches, with removable earthing link 220kV, 50kA, Single-phase, Three-phase set (1 set = 3 single phase)  3.7.4.4 Bus Bar Isolating Disconnect Switches, 220kV, 4000A, 50kA, single phase, three-phase set (1 set = 3 single phase)  3.7.5 Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  Sub Total 3.7  3.8 Complete with control & protection up to GIB sealing end for all Feeder and 3.8.1.1 Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel)  3.8.1.1 Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel)  3.8.1.3 Transformer Protection Panel	2725		_	NI		
circuit breaker monitoring)  3.7.3.6 Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay)  3.7.3.7 LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices  3.7.3.8 All metallic structures and supports required for GIS complete with accessories  3.7.3.9 All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices  3.7.4 Gas Insulated Bus bars  3.7.4.1 220kV , Double 3 single phase (isolated), SF6 gas insulated , metal enclosed 4000A bus bars each enclosed in three individual bus enclosures per diameter  3.7.4.2 Voltage Transformers, 220kV, dual secondary, single-phase, three-phase set (1 set = 3 single phase)  3.7.4.3 Main Bus Bar High Speed Earthing Switches, with removable earthing link 220kV, 50kA, Single-phase, Three-phase set (1 set = 3 single phase)  3.7.4.4 Bus Bar Isolating Disconnect Switches, 220kV, 4000A, 50kA, single phase, three-phase set (1 set = 3 single phase)  3.7.5 Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  Sub Total 3.7  3.8 Complete with control & protection up to GIB sealing end for all Ecder and Conditions of Contract, if any, not included above (specify)  Sub Total 3.7  3.8.1.1 Complete set of Control and Protection panels for 400 kV station as specified in Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel)  3.8.1.1 Line Protection Panel (Note: line protection should include tele protection terminals)  3.8.1.2 Line Protection Panel (Note: line protection should include tele protection terminals)	3.7.3.3		0	INOS		
3.7.3.6 Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay)  3.7.3.7 LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices  3.7.3.8 All metallic structures and supports required for GIS complete with accessories  3.7.3.9 All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices  3.7.4 Gas Insulated Bus bars.  3.7.4.1 220kV , Double 3 single phase (isolated), SF6 gas insulated , metal enclosed 4000A bus bars each enclosed in three individual bus enclosures per diameter  3.7.4.2 Voltage Transformers, 220kV, dual secondary, single-phase, three-phase set (1 set = 3 single phase)  3.7.4.3 Main Bus Bar High Speed Earthing Switches, with removable earthing link 220kV, 50kA, Single-phase, Three-phase set (1 set = 3 single phase)  3.7.4.4 Bus Bar Isolating Disconnect Switches, 220kV, 4000A, 50kA, single phase, three-phase set (1 set = 3 single phase)  3.7.4.2 Other necessary works as per Employer's Requirement and conditions of Contract, if any, not included above (specify)  Sub Total 3.7  3.8 Complete with control & protection up to GIB sealing end for all Feeder and 3.8.1 Complete set of Control and Protection panels for 400 kV station as specified in Relay Panel)  3.8.1.1 Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel)  3.8.1.3 Transformer Protection Panel						
and diagnostic equipment (per bay)   3.7.3.7   LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices   3.7.3.8   All metallic structures and supports required for GIS complete with accessories   1   Lot   2.7.3.9   Lot   2.7.3.9   Lot   2.7.3.9   Lot   2.7.3.9   All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices   3.7.4.1   2.7.3.9   2.7.4.1   2.						
and diagnostic equipment (per bay)   3.7.3.7   LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices   3.7.3.8   All metallic structures and supports required for GIS complete with accessories   1   Lot   2.7.3.9   Lot   2.7.3.9   Lot   2.7.3.9   Lot   2.7.3.9   All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices   3.7.4.1   2.7.3.9   2.7.4.1   2.	3.7.3.6	Partial Discharge Monitoring System including monitoring sensors	6	Nos		
3.7.3.7 LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices 3.7.3.8 All metallic structures and supports required for GIS complete with accessories 3.7.3.9 All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices 3.7.4.1 Qas Insulated Bus bars 3.7.4.1 220kV, Double 3 single phase (isolated), SF6 gas insulated, metal enclosed 4000A bus bars each enclosed in three individual bus enclosures per diameter 3.7.4.2 Voltage Transformers, 220kV, dual secondary, single-phase, three-phase set (1 set = 3 single phase) 3.7.4.3 Main Bus Bar High Speed Earthing Switches, with removable earthing link 220kV, 50kA, Single-phase, Three-phase set (1 set = 3 single phase) 3.7.4.4 Bus Bar Isolating Disconnect Switches, 220kV, 4000A, 50kA, single-phase, three-phase set (1 set = 3 single phase) 3.7.5 Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  3.8 Complete with control & protection up to GIB sealing end for all Feeder and 3.8.1 Complete set of Control and Protection panels for 400 kV station as specified in Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel) 3.8.1.2 Line Protection Panel (Note: line protection should include tele protection terminals) 3.8.1.3 Transformer Protection Panel						
to all GIS equipment/devices  3.7.3.8 All metallic structures and supports required for GIS complete with accessories  3.7.3.9 All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices  3.7.4.1 Gas Insulated Bus bars.  3.7.4.1 220kV , Double 3 single phase (isolated), SF6 gas insulated , metal enclosed 4000A bus bars each enclosed in three individual bus enclosures per diameter  3.7.4.2 Voltage Transformers, 220kV, dual secondary, single-phase, three-phase set (1 set = 3 single phase)  3.7.4.3 Main Bus Bar High Speed Earthing Switches, with removable earthing link 220kV, 50kA, Single-phase, Three-phase set (1 set = 3 single phase)  3.7.4.4 Bus Bar Isolating Disconnect Switches, 220kV, 4000A, 50kA, single phase, three-phase set (1 set = 3 single phase)  3.7.5 Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  3.8 Complete with control & protection up to GIB sealing end for all Feeder and 3.8.1 Complete set of Control and Protection panels for 400 kV station as specified in 3.8.1.1 Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel)  3.8.1.2 Line Protection Panel (Note: line protection should include tele protection terminals)  Transformer Protection Panel  4 Nos	3737	I V control and power cable connections from Local Control Cabinet	1	Lot		
3.7.3.8 All metallic structures and supports required for GIS complete with accessories 3.7.3.9 All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices 3.7.4 Gas Insulated Bus bars 3.7.4.1 220kV , Double 3 single phase (isolated), SF6 gas insulated , metal enclosed 4000A bus bars each enclosed in three individual bus enclosures per diameter 3.7.4.2 Voltage Transformers, 220kV, dual secondary, single-phase, three-phase set (1 set = 3 single phase) 3.7.4.3 Main Bus Bar High Speed Earthing Switches, with removable earthing link 220kV, 50kA, Single-phase, Three-phase set (1 set = 3 single phase) 3.7.4.4 Bus Bar Isolating Disconnect Switches, 220kV, 4000A, 50kA, single phase, three-phase set (1 set = 3 single phase) 3.7.5 Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  3.8 Complete with control & protection up to GIB sealing end for all Feeder and 3.8.1.1 Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel) 3.8.1.2 Line Protection Panel (Note: line protection should include tele protection terminals) 3.8.1.3 Transformer Protection Panel	3.7.3.7		1	Lot		
3.7.3.9 All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices  3.7.4. Gas Insulated Bus bars  3.7.4.1 220kV, Double 3 single phase (isolated), SF6 gas insulated, metal enclosed 4000A bus bars each enclosed in three individual bus enclosures per diameter  3.7.4.2 Voltage Transformers, 220kV, dual secondary, single-phase, three-phase set (1 set = 3 single phase)  3.7.4.3 Main Bus Bar High Speed Earthing Switches, with removable earthing link 220kV, 50kA, Single-phase, Three-phase set (1 set = 3 single phase)  3.7.4.4 Bus Bar Isolating Disconnect Switches, 220kV, 4000A, 50kA, single phase, three-phase set (1 set = 3 single phase)  3.7.5 Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  5.8 Complete with control & protection up to GIB sealing end for all Feeder and 3.8.1.1 Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel)  3.8.1.2 Line Protection Panel (Note: line protection should include tele protection terminals)  3.8.1.3 Transformer Protection Panel  4 Nos	2.7.2.0		-	Ŧ.		
3.7.3.9 All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices 3.7.4 Gas Insulated Bus bars 3.7.4.1 220kV, Double 3 single phase (isolated), SF6 gas insulated, metal enclosed 4000A bus bars each enclosed in three individual bus enclosures per diameter 3.7.4.2 Voltage Transformers, 220kV, dual secondary, single-phase, three-phase set (1 set = 3 single phase) 3.7.4.3 Main Bus Bar High Speed Earthing Switches, with removable earthing link 220kV, 50kA, Single-phase, Three-phase set (1 set = 3 single phase) 3.7.4.4 Bus Bar Isolating Disconnect Switches, 220kV, 4000A, 50kA, single phase, three-phase set (1 set = 3 single phase) 3.7.5 Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  Sub Total 3.7  3.8 Complete with control & protection up to GIB sealing end for all Feeder and 3.8.1.1 Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel)  3.8.1.2 Line Protection Panel (Note: line protection should include tele protection terminals)  Transformer Protection Panel  4 Nos	3.7.3.8	All metallic structures and supports required for GIS complete with	1	Lot		
access to all GIS devices  3.7.4						
3.7.4.1 Gas Insulated Bus bars 3.7.4.1 220kV, Double 3 single phase (isolated), SF6 gas insulated, metal enclosed 4000A bus bars each enclosed in three individual bus enclosures per diameter 3.7.4.2 Voltage Transformers, 220kV, dual secondary, single-phase, three-phase set (1 set = 3 single phase)  3.7.4.3 Main Bus Bar High Speed Earthing Switches, with removable earthing link 220kV, 50kA, Single-phase, Three-phase set (1 set = 3 single phase)  3.7.4.4 Bus Bar Isolating Disconnect Switches, 220kV, 4000A, 50kA, single phase, three-phase set (1 set = 3 single phase)  3.7.5 Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  3.8 Complete with control & protection up to GIB sealing end for all Feeder and 3.8.1 Complete set of Control and Protection panels for 400 kV station as specified in 3.8.1.1 Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel)  3.8.1.2 Line Protection Panel (Note: line protection should include tele protection terminals)  3.8.1.3 Transformer Protection Panel  4 Nos	3.7.3.9	All walkways, platforms, stairs, ladders and accessories required for	1	Lot		
3.7.4.1 Gas Insulated Bus bars 3.7.4.1 220kV, Double 3 single phase (isolated), SF6 gas insulated, metal enclosed 4000A bus bars each enclosed in three individual bus enclosures per diameter 3.7.4.2 Voltage Transformers, 220kV, dual secondary, single-phase, three-phase set (1 set = 3 single phase)  3.7.4.3 Main Bus Bar High Speed Earthing Switches, with removable earthing link 220kV, 50kA, Single-phase, Three-phase set (1 set = 3 single phase)  3.7.4.4 Bus Bar Isolating Disconnect Switches, 220kV, 4000A, 50kA, single phase, three-phase set (1 set = 3 single phase)  3.7.5 Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  3.8 Complete with control & protection up to GIB sealing end for all Feeder and 3.8.1 Complete set of Control and Protection panels for 400 kV station as specified in 3.8.1.1 Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel)  3.8.1.2 Line Protection Panel (Note: line protection should include tele protection terminals)  3.8.1.3 Transformer Protection Panel  4 Nos		access to all GIS devices				
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enclosed 4000A bus bars each enclosed in three individual bus enclosures per diameter  3.7.4.2 Voltage Transformers, 220kV, dual secondary, single-phase, three-phase set (1 set = 3 single phase)  3.7.4.3 Main Bus Bar High Speed Earthing Switches, with removable earthing link 220kV, 50kA, Single-phase, Three-phase set (1 set = 3 single phase)  3.7.4.4 Bus Bar Isolating Disconnect Switches, 220kV, 4000A, 50kA, single phase, three-phase set (1 set = 3 single phase)  3.7.5 Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  Sub Total 3.7  3.8 Complete with control & protection up to GIB sealing end for all Feeder and Sa.1 Complete set of Control and Protection panels for 400 kV station as specified in Sa.1.1 Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel)  3.8.1.2 Line Protection Panel (Note: line protection should include tele protection terminals)  3.8.1.3 Transformer Protection Panel  4 Nos			7	Diameter		
enclosures per diameter  3.7.4.2 Voltage Transformers, 220kV, dual secondary, single-phase, three-phase set (1 set = 3 single phase)  3.7.4.3 Main Bus Bar High Speed Earthing Switches, with removable earthing link 220kV, 50kA, Single-phase, Three-phase set (1 set = 3 single phase)  3.7.4.4 Bus Bar Isolating Disconnect Switches, 220kV, 4000A, 50kA, single phase, three-phase set (1 set = 3 single phase)  3.7.5 Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  3.8 Complete with control & protection up to GIB sealing end for all Feeder and  3.8.1 Complete set of Control and Protection panels for 400 kV station as specified in 3.8.1.1 Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel)  3.8.1.2 Line Protection Panel (Note: line protection should include tele protection terminals)  3.8.1.3 Transformer Protection Panel  4 Nos	J. / . T. 1		l ′	Diametel		
3.7.4.2 Voltage Transformers, 220kV, dual secondary, single-phase, three-phase set (1 set = 3 single phase)  3.7.4.3 Main Bus Bar High Speed Earthing Switches, with removable earthing link 220kV, 50kA, Single-phase, Three-phase set (1 set = 3 single phase)  3.7.4.4 Bus Bar Isolating Disconnect Switches, 220kV, 4000A, 50kA, single phase, three-phase set (1 set = 3 single phase)  3.7.5 Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  Sub Total 3.7  3.8 Complete with control & protection up to GIB sealing end for all Feeder and 3.8.1 Complete set of Control and Protection panels for 400 kV station as specified in 3.8.1.1 Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel)  3.8.1.2 Line Protection Panel (Note: line protection should include tele protection terminals)  3.8.1.3 Transformer Protection Panel  4 Nos			ĺ			
phase set (1 set = 3 single phase)  3.7.4.3 Main Bus Bar High Speed Earthing Switches, with removable earthing link 220kV, 50kA, Single-phase, Three-phase set (1 set = 3 single phase)  3.7.4.4 Bus Bar Isolating Disconnect Switches, 220kV, 4000A, 50kA, single phase, three-phase set (1 set = 3 single phase)  3.7.5 Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  Sub Total 3.7  3.8 Complete with control & protection up to GIB sealing end for all Feeder and  3.8.1 Complete set of Control and Protection panels for 400 kV station as specified in 3.8.1.1 Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel)  3.8.1.2 Line Protection Panel (Note: line protection should include tele protection terminals)  3.8.1.3 Transformer Protection Panel  4 Nos						
Main Bus Bar High Speed Earthing Switches, with removable earthing link 220kV, 50kA, Single-phase, Three-phase set (1 set = 3 single phase)  3.7.4.4 Bus Bar Isolating Disconnect Switches, 220kV, 4000A, 50kA, single phase, three-phase set (1 set = 3 single phase)  3.7.5 Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  Sub Total 3.7  3.8 Complete with control & protection up to GIB sealing end for all Feeder and Sa.1 Complete set of Control and Protection panels for 400 kV station as specified in Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel)  3.8.1.2 Line Protection Panel (Note: line protection should include tele protection terminals)  3.8.1.3 Transformer Protection Panel  4 Nos	3.7.4.2	Voltage Transformers, 220kV, dual secondary, single-phase, three-	2	Nos		
Main Bus Bar High Speed Earthing Switches, with removable earthing link 220kV, 50kA, Single-phase, Three-phase set (1 set = 3 single phase)  3.7.4.4 Bus Bar Isolating Disconnect Switches, 220kV, 4000A, 50kA, single phase, three-phase set (1 set = 3 single phase)  3.7.5 Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  Sub Total 3.7  3.8 Complete with control & protection up to GIB sealing end for all Feeder and Sa.1 Complete set of Control and Protection panels for 400 kV station as specified in Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel)  3.8.1.2 Line Protection Panel (Note: line protection should include tele protection terminals)  3.8.1.3 Transformer Protection Panel  4 Nos		phase set (1 set = 3 single phase)	ĺ			
earthing link 220kV, 50kA, Single-phase, Three-phase set (1 set = 3 single phase)  3.7.4.4 Bus Bar Isolating Disconnect Switches, 220kV, 4000A, 50kA, single phase, three-phase set (1 set = 3 single phase)  3.7.5 Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  Sub Total 3.7  3.8 Complete with control & protection up to GIB sealing end for all Feeder and  3.8.1 Complete set of Control and Protection panels for 400 kV station as specified in 3.8.1.1 Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel)  3.8.1.2 Line Protection Panel (Note: line protection should include tele protection terminals)  3.8.1.3 Transformer Protection Panel	3.7.4.3		2	Nos		
single phase)  3.7.4.4 Bus Bar Isolating Disconnect Switches, 220kV, 4000A, 50kA, single phase, three-phase set (1 set = 3 single phase)  3.7.5 Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  Sub Total 3.7  3.8 Complete with control & protection up to GIB sealing end for all Feeder and  3.8.1 Complete set of Control and Protection panels for 400 kV station as specified in  3.8.1.1 Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel)  3.8.1.2 Line Protection Panel (Note: line protection should include tele protection terminals)  3.8.1.3 Transformer Protection Panel  4 Nos			-			
3.7.4.4 Bus Bar Isolating Disconnect Switches, 220kV, 4000A, 50kA, single phase, three-phase set (1 set = 3 single phase)  3.7.5 Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  Sub Total 3.7  3.8 Complete with control & protection up to GIB sealing end for all Feeder and  3.8.1 Complete set of Control and Protection panels for 400 kV station as specified in 3.8.1.1 Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel)  3.8.1.2 Line Protection Panel (Note: line protection should include tele protection terminals)  3.8.1.3 Transformer Protection Panel  4 Nos			ĺ			
phase, three-phase set (1 set = 3 single phase)  3.7.5 Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  Sub Total 3.7  3.8 Complete with control & protection up to GIB sealing end for all Feeder and  3.8.1 Complete set of Control and Protection panels for 400 kV station as specified in  3.8.1.1 Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel)  3.8.1.2 Line Protection Panel (Note: line protection should include tele protection terminals)  3.8.1.3 Transformer Protection Panel  4 Nos	2.7.4.		_	**		
3.7.5 Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  3.8 Complete with control & protection up to GIB sealing end for all Feeder and  3.8.1 Complete set of Control and Protection panels for 400 kV station as specified in  3.8.1.1 Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel)  3.8.1.2 Line Protection Panel (Note: line protection should include tele protection terminals)  3.8.1.3 Transformer Protection Panel  4 Nos	3.7.4.4		2	Nos		
Conditions of Contract, if any, not included above (specify)  3.8 Complete with control & protection up to GIB sealing end for all Feeder and 3.8.1 Complete set of Control and Protection panels for 400 kV station as specified in 3.8.1.1 Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel) 3.8.1.2 Line Protection Panel (Note: line protection should include tele protection terminals) 3.8.1.3 Transformer Protection Panel  4 Nos						
Conditions of Contract, if any, not included above (specify)  3.8 Complete with control & protection up to GIB sealing end for all Feeder and 3.8.1 Complete set of Control and Protection panels for 400 kV station as specified in 3.8.1.1 Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel) 3.8.1.2 Line Protection Panel (Note: line protection should include tele protection terminals) 3.8.1.3 Transformer Protection Panel  4 Nos	3.7.5	Other necessary works as per Employer's Requirement and	1	Lot		
3.8. Complete with control & protection up to GIB sealing end for all Feeder and 3.8.1 Complete set of Control and Protection panels for 400 kV station as specified in 3.8.1.1 Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel) 3.8.1.2 Line Protection Panel (Note: line protection should include tele protection terminals) 3.8.1.3 Transformer Protection Panel 4 Nos			ĺ			
3.8   Complete with control & protection up to GIB sealing end for all Feeder and		, , , , , , , , , , , , , , , , , , , ,		·	Sub Total 3.7	
3.8.1     Complete set of Control and Protection panels for 400 kV station as specified in       3.8.1.1     Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel)     12     Nos       3.8.1.2     Line Protection Panel (Note: line protection should include tele protection terminals)     12     Nos       3.8.1.3     Transformer Protection Panel     4     Nos	3.8	Complete with control & protection up to CID scaling and for all	Food	or and	Sab I otal 3.7	
3.8.1.1 Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel)  3.8.1.2 Line Protection Panel (Note: line protection should include tele protection terminals)  3.8.1.3 Transformer Protection Panel  4 Nos						
Relay Panel)  3.8.1.2 Line Protection Panel (Note: line protection should include tele protection terminals)  3.8.1.3 Transformer Protection Panel  4 Nos						
3.8.1.2 Line Protection Panel (Note: line protection should include tele protection terminals)  3.8.1.3 Transformer Protection Panel  4 Nos	3.8.1.1	Circuit Breaker Relay Panel (Note: BCU should be included in the	12	Nos		
protection terminals)  3.8.1.3 Transformer Protection Panel  4 Nos		Relay Panel)				
protection terminals)  3.8.1.3 Transformer Protection Panel  4 Nos	3.8.1.2	Line Protection Panel (Note: line protection should include tele	12	Nos		
3.8.1.3 Transformer Protection Panel 4 Nos		` *				
	3 8 1 2		4	Nos		
(Auto Trans Day 1—1110, Auto Trans Day Z=1110)	5.0.1.5		7	1105		
	<u></u>	(Auto Trans Bay 1-1110, Auto Trans Bay 2=1no)			l	

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations Price Schedule

Item No.	Description	Qty	Unit	Unit Rate (b)	Total Price (c)
Ittili 140.	Description	Qty	Cilit	US\$	US\$
				EXW plus all related	USG
				cost as defined in foot	
				note	
		,	2	3	(1) (2)
2014	4001-1/ (D1.1- D D D+	1		3	(1) x (3)
3.8.1.4	400kV (Double Bus Bar Protection)	2	Set		
3.8.1.5	Miscellaneous Relay and Control Equipment, not included above	1	Lot		
3.8.2	Complete set of Control and Protection panels for 220 kV station	_			
3.8.2.1	Circuit Breaker Relay Panel	6	Nos		
3.8.2.2	Transformer Protection Panel	4	Nos		
	(Auto Trans Bay 1=1no,Auto Trans Bay 2=1no)				
3.8.2.3	220kV (Double Bus Bar Protection)	2	Set		
3.8.2.4	Miscellaneous Relay and Control Equipment, not included above	1	Lot		
3.8.3	Complete set of Control and Protection panels for 33 kV station a	s spe	cified in		
3.8.3.1	Circuit Breaker Relay Panel (Note: BCU should be included in the	2	Nos		
	Relay Panel)				
3.8.3.2	Transformer Protection Panel	2	Nos		
	(Auto Trans Bay 1=1no,Auto Trans Bay 2=1no)				
3.8.3.3	Miscellaneous Relay and Control Equipment, not included above	1	Lot		
3.8.4	Substation Automation & Metering System				
3.8.4.1	SAS Operator Station for control of 400/220/33 kV	1	Set		
3.8.4.2	Substation Automation System (SAS) for 400 kV System	7	Set		
3.8.4.3	Substation Automation System (SAS) for 220kV System	7	Set		
3.8.4.4	Substation Automation System (SAS) for 33kV System	2	Set		
3.8.4.5	Substation Automation System (SAS) for Auxiliary System	1	Set		
3.8.4.6	Integration of all 400/220kV Bays under present scope with the	1	Lot		
	SCADA of SIEMENS (SINAUT Spectrum) at Load Dispatch				
	Centre, Kathmandu including supply of Hardware, Software,				
	accessories etc. complete as per Technical Specification.				
3.8.4.7	Telecommunication system for Ratmate	1	Lot		
3.8.4.8	Fibre Optic SDH System	1	Lot		
3.8.4.9	Phone System	1	Lot		
3.8.4.10	400 kV Metering	1	Lot		
3.8.4.11	220kV Metering	1	Lot		
3.8.4.12	Miscellaneous Relay and Control Equipment, not included above	1	Lot		

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations Price Schedule

	wn of Rates and Prices Schedule No. 3. Plant, Goods and Equipm				
Item No.	Description	Qty	Unit	Unit Rate (b)	Total Price (c)
				US\$	US\$
				EXW plus all related	
				cost as defined in foot	
				note	
		1	2	3	(1) x (3)
				Sub Total 3.8	
3.9	Grounding System				
3.9.1	Stranded Bare Copper 240 Sq. mm*** Grid	1	Lot		
	(Including Fusion and Mechanical Connectors)				
3.9.2	Grounding Rods	1	Lot		
3.9.3	Embedded Grounding System - 400kV GIS	1	Lot		
	(Including Connections to GIS metallic Structures, Supports and				
	Walkways/Platforms)				
3.9.4	Embedded Grounding System - 220kV GIS	1	Lot		
	(Including Connections to GIS metallic Structures, Supports and				
	Walkways/Platforms)				
3.9.5	Embedded Grounding System - Control Room	1	Lot		
3.9.6	Other necessary works as per Employer's Requirement and	1	Lot		
3.7.0	Conditions of Contract, if any, not included above (specify)	1	Lot		
	Conditions of Contract, if any, not included above (specify)			Sub Total 3.9	
3.10	Lightning Protection System			Sub Total 3.9	
3.10.1	Overhead Galvanized Steel Wire, Including Hardware	1	Lat		
3.10.1		1	Lot		
	Lightening Mast as required for total protection of equipment		Lot		
3.10.3	Other necessary works as per Employer's Requirement and	1	Lot		
	Conditions of Contract, if any, not included above (specify)			G 1 T 4 12 10	
2.11	TO 0 1 ( O )			Sub Total 3.10	
3.11 3.11.1	Firefighting System Fire protection/detection for 7 (Seven) auto transformers	1	Lot		
3.11.2			Lot		
	Fire protection/detection for 400kV GIS Building		Lot		
3.11.3	Fire protection/detection for 220kV GIS Building				
3.11.4	Fire protection/detection for Control House		Lot		
3.11.5	Fire protection/detection system for pump house building		Lot		
3.11.6	Fire protection/detection system for generator diesel tank		Lot		
3.11.7	Portable fire extinguishers		Lot		
3.11.8	Clean-agent fire extinguishers	_	Lot		
3.11.9	Other necessary works as per Employer's Requirement and	1	Lot		
	Conditions of Contract, if any, not included above (specify)				
				Sub Total 3.11	
3.12	HVAC And Ventilation Systems	1 .		1	
3.12.1	400kV GIS Building HVAC and Ventilation Systems	1	Lot		
3.12.2	220kV GIS Building HVAC and Ventilation Systems	1	Lot		
3.12.3	Control House HVAC and Ventilation Systems	1	Lot	<u> </u>	
				Sub Total 3.12	
	T				
3.13	Accessories and Ancillary Material				
3.13.1	Junction and marshalling boxes, outdoor	1	Lot		
3.13.1 3.13.2	Junction and marshalling boxes, outdoor Junction and marshalling boxes, indoor	1 1	Lot		
3.13.1 3.13.2 3.13.3	Junction and marshalling boxes, outdoor Junction and marshalling boxes, indoor Outdoor lighting, including lighting fixtures	1	Lot Lot		
3.13.1 3.13.2 3.13.3 3.13.4	Junction and marshalling boxes, outdoor Junction and marshalling boxes, indoor Outdoor lighting, including lighting fixtures Indoor lighting, including lighting fixtures		Lot Lot Lot		
3.13.1 3.13.2 3.13.3 3.13.4 3.13.5	Junction and marshalling boxes, outdoor Junction and marshalling boxes, indoor Outdoor lighting, including lighting fixtures Indoor lighting, including lighting fixtures Control Cabinet for outdoor lighting	1 1 1 1	Lot Lot		
3.13.1 3.13.2 3.13.3 3.13.4	Junction and marshalling boxes, outdoor Junction and marshalling boxes, indoor Outdoor lighting, including lighting fixtures Indoor lighting, including lighting fixtures Control Cabinet for outdoor lighting Rail tracks for movement of power transformers on the reinforced	1 1 1	Lot Lot Lot		
3.13.1 3.13.2 3.13.3 3.13.4 3.13.5 3.13.6	Junction and marshalling boxes, outdoor Junction and marshalling boxes, indoor Outdoor lighting, including lighting fixtures Indoor lighting, including lighting fixtures Control Cabinet for outdoor lighting Rail tracks for movement of power transformers on the reinforced concrete foundations all complete.	1 1 1 1 1	Lot Lot Lot Lot		
3.13.1 3.13.2 3.13.3 3.13.4 3.13.5	Junction and marshalling boxes, outdoor Junction and marshalling boxes, indoor Outdoor lighting, including lighting fixtures Indoor lighting, including lighting fixtures Control Cabinet for outdoor lighting Rail tracks for movement of power transformers on the reinforced	1 1 1 1	Lot Lot Lot Lot		
3.13.1 3.13.2 3.13.3 3.13.4 3.13.5 3.13.6	Junction and marshalling boxes, outdoor Junction and marshalling boxes, indoor Outdoor lighting, including lighting fixtures Indoor lighting, including lighting fixtures Control Cabinet for outdoor lighting Rail tracks for movement of power transformers on the reinforced concrete foundations all complete.	1 1 1 1 1	Lot Lot Lot Lot Lot Lot		
3.13.1 3.13.2 3.13.3 3.13.4 3.13.5 3.13.6	Junction and marshalling boxes, outdoor Junction and marshalling boxes, indoor Outdoor lighting, including lighting fixtures Indoor lighting, including lighting fixtures Control Cabinet for outdoor lighting Rail tracks for movement of power transformers on the reinforced concrete foundations all complete.  Electric Overhead Travelling Crane for installation and removal of GIS Equipment (For 400 and 220 kV each) Visual Monitoring System	1 1 1 1 1	Lot Lot Lot Lot Lot Lot		
3.13.1 3.13.2 3.13.3 3.13.4 3.13.5 3.13.6	Junction and marshalling boxes, outdoor Junction and marshalling boxes, indoor Outdoor lighting, including lighting fixtures Indoor lighting, including lighting fixtures Control Cabinet for outdoor lighting Rail tracks for movement of power transformers on the reinforced concrete foundations all complete. Electric Overhead Travelling Crane for installation and removal of GIS Equipment (For 400 and 220 kV each)	1 1 1 1 1 2	Lot Lot Lot Lot Lot Lot Lot Lot		

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations Price Schedule

Breakdown of Rates and Prices Schedule No. 3. Plant, Goods and Equipment (Including Mandatory Spare Parts) Supplied from

	wn of Rates and Prices Schedule No. 3. Plant, Goods and Equipme				
Item No.	Description	Qty	Unit	Unit Rate (b)	Total Price (c)
				US\$	US\$
				EXW plus all related	
				cost as defined in foot	
				note	(2)
2.14	M 14 M'4 D '4 L LT C' T 4	1	2	3	(1) x (3)
3.14	Mandatory Maintenance, Repair tools and Testing Instruments	1 1			
3.14.1	GIS Equipment		Ŧ.,		
3.14.1.1	400kV GIS SF6 leakage detector, analyzer and processing unit all	1	Lot		
3.14.1.2	complete	1	T -4		
3.14.1.2	220kV GIS SF6 leakage detector, analyzer and processing unit all	1	Lot		
2 1 4 1 2	complete	1	T -4		
3.14.1.3	400kV GIS Wrenches and tools	1	Lot		
3.14.1.4	220kV GIS Wrenches and tools	1	Lot		
3.14.1.5	400kV GIS Pressure gauge	1	Nos		
3.14.1.6	220kV GIS Pressure gauge	1	Nos		
3.14.1.7	400kV GIS Gas sampling and moisture meter	1	Nos		
3.14.1.8	220kV GIS Gas sampling and moisture meter	1	Nos		
3.14.1.9	400kV GIS Micro-Ohmmeter	1	Nos		
3.14.1.10	220kV GIS Micro-Ohmmeter	1	Nos		
3.14.1.11	400kV GIS Circuit-breaker, timing tester	1	Nos		
3.14.1.12	220kV GIS Circuit-breaker, timing tester	1	Nos		
3.14.1.13	400kV GIS Laptop computer with specialized software	1	Nos		
2 1 1 1 1 1	for GIS setting and monitoring				
3.14.1.14	220kV GIS Laptop computer with specialized software	1	Nos		
2 4 4 4 4 5	for GIS setting and monitoring				
3.14.1.15	Complete set of SF6 gas service cart mounted on a trailer for mobile	1	Lot		
	application. SF6 gas refilling cart equipped with 1 SF6 gas cylinder				
	and the necessary instruments and adapters for easy and quick gas				
	refilling in case of losses		_		
3.14.1.16	HV Test Bushing for GIS	1	Lot		
3.14.1.17	Online Partial Discharge Monitoring System	1	Nos		
3.14.2	Auto Transformer & Station Service Transformer				
3.14.2.1	Oil-treatment unit 6000lph along with suitable size and quantity of	1	Nos		
	connection arrangement (MCCB (240-300 Amp),terminal lugs etc.)				
2 1 4 2 2	all complete (autotransformer)	-	3.7		
3.14.2.2	Oil dielectric tester	1	Nos		
3.14.2.3	Dielectric tester based on tan δ and dielectric losses, 10 kV	1	Nos		
3.14.2.4	Megger, electronic, 5 kV	1	Nos		
3.14.2.5	Wrenches and tools	1	Lot		
3.14.3	Complete set of Control and Protection for Sub-Station	-			
3.14.3.1	Relay Test kit	1	Lot		
3.14.3.2	Test Equipment & tools for SAS SYSTEM for measuring,	1	Lot		
	configuration & diagnostics.			C-1 TD 4 12 14	
2.15	Mandataw Cuana Dante			Sub Total 3.14	
3.15	Mandatory Spare Parts	, ,			
3.15.1	HV Equipment		NT		
3.15.1.1	Unit of 400kV surge arrester, complete with grading ring,	2	Nos		
2 15 1 2	terminals and surge counter	1	NT.		
3.15.1.2	Capacitive voltage transformer, 400kV	1	Nos		
3.15.1.3	Current transformer, 400kV	1	Nos		

Nos

3.15.1.4 Current transformer, 72.5kV

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations Price Schedule

	who i Kates and Prices Schedule No. 5. Flant, Goods and Equipme				
Item No.	Description	Qty	Unit	Unit Rate (b)	Total Price (c)
				US\$	US\$
				EXW plus all related	I
				cost as defined in foot	I
				note	<u> </u>
		1	2	3	(1) x (3)
3.15.2	Auto Transformer				<u> </u>
3.15.2.1	Complete set of gaskets with grease, for cover, manholes,	2	Lot		I
	hand holes, and pipping fittings.				<u> </u>
3.15.2.2	Lot of LV control and protective components, minimum one unit of	2	Lot		I
	each type of components used				<u> </u>
3.15.2.3	Pressure relief device, complete with accessories	2	Nos		<u> </u>
3.15.2.4	Bushings, one complete unit of each type used, with accessories	2	Lot		İ
3.15.2.5	Current transformer, one unit of each type	2	Lot		İ
3.15.2.6	Oil-circulating pump with motor, complete with accessories	2	Nos		<u> </u>
3.15.2.7	Cooling fan, complete with motor	2	Nos		<u> </u>
3.15.2.8	Buchholz relay, complete (2 each for main tank and OLTC tank)	4	Nos		İ
3.15.2.9	One instrument of each type used (temperature, oil level, pressure	2	Lot		I
	vent, etc.)				
3.15.2.10	One valve of each type used	2	Lot		İ
3.15.2.11	Insulating oil, 5% of the volume used	1	Lot		ĺ
3.15.2.12	Silica gel, quantity for one load	1	Lot		ĺ
3.15.2.13	Tap changer diverter switch, spare contacts and transition resistance	2	Lot		
3.15.2.14	Tap changer selector switch spare contacts	2	Lot		i
3.15.2.15	Rolls of Kraft insulating paper	2	Lot		i
3.15.2.16	LA for HV,IV and LV side each	2	Lot		İ
3.15.2.17	Additional spare parts as per Chapter 3: Auto Transformer	1	Lot		
	Specification of Part 2: Employer's Requirements, Section V – B1				
	(Technical Specifications).				
3.15.3	630 kVA Transformer				
3.15.3.1	All Bushing with metal parts (each voltage rating) for 630 kVA	1	Lot		i
	Transformer				I
3.15.3.2	Oil Temperature Indicator with sensing device	1	Lot		İ
3.15.3.3	Tap Changer Contacts	1	Lot		i
3.15.3.4	Buchholz Relay	1	Nos		i
3.15.3.5	Explosion vent diaphragm	1	Nos		
3.15.3.6	Set of valve (each type)	1	Lot		İ
3.15.3.7	3-Phase 11 kV Horn Gap Fuse	1	Lot		İ
3.15.4	Other necessary works as per Employer's Requirement and	1	Lot		i
	Conditions of Contract, if any, not included above (specify)				I
				Sub Total 3.15	
3.16	Spare Parts for AC and DC Station Supply				
3.16.1	Spare for LV Switchgear				İ
3.16.1.1	LV circuit breaker, complete, with CT's and protection devices	1	Lot		İ
3.16.1.2	Outgoing thermomagnetic breakers - one unit of each type used	1	Lot		
3.16.1.3	Metering - one instrument of each type used	1	Lot		
3.16.1.4	Protection (other than included in LV breaker)	1	Lot		
	One unit of each type used				Ì
3.16.1.5	Automatic Transfer Switch	1	Nos		
	One complete controller including sensors				Ì
3.16.1.6	One or 5% of loose material	1	Lot		
	Auxiliary relays, contactors, fuses, terminals, etc				Ì
	/ _ / _ /			1	

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations Price Schedule

	who i Kates and Prices Schedule No. 5. Plant, Goods and Equipm				
Item No.	Description	Qty	Unit	Unit Rate (b)	Total Price (c)
				US\$	US\$
				EXW plus all related	
				cost as defined in foot	
				note	
		1	2	3	(1) x (3)
3.16.2	Spare for DC Distribution Panels				
3.16.2.1	Thermomagnetic breakers	1	Lot		
	one unit of each type used				
3.16.2.2	Metering - one metering instrument of each type used	1	Lot		
3.16.2.3	Protection (other than included in LV breaker)	1	Lot		
	One unit of each type used				
3.16.2.4	One or 5% of loose material	1	Lot		
	Auxiliary relays, contactors, fuses, terminals, etc				
3.16.3	Spare for Diesel Generator Set				
3.16.3.1	Replaceable elements for air filter	1	Nos		
3.16.3.2	Replaceable elements for oil filter	1	Nos		
3.16.3.3	Replaceable elements for fuel filter	1	Nos		
3.16.3.4	Complete set of injectors	1	Nos		
3.16.3.5	Fuel injector pump	1	Nos		
3.16.3.6	Oil pump	1	Nos		
3.16.3.7	Intake valves	1	Nos		
3.16.3.8	Seats for intake valves	1	Nos		
3.16.3.9	Exhaust valves	1	Nos		
3.16.3.10	Set for exhaust valves	1	Nos		
3.16.3.11	Disconnect switch, with grounding blades, 220 kV, 3 Ø	1	Nos		
3.16.3.12	Set of pistons	1	Nos		
3.16.3.13	Set of complete bearings of the engine	1	Nos		
3.16.3.14	Set of all gaskets needed for the engine	1	Nos		
3.16.3.15	Set of thermostats	1	Nos		
	Set of bearings for the alternator	1	Nos		
3.16.3.17	Set of control cards, at least one unit of each type used	1	Lot		
3.16.3.18	Diodes and thyristors of each type used	3	Nos		
3.16.3.19	Lamp, one unit of each type used	10	Nos		
3.16.3.20	Auxiliary relay, one unit of each type used	1	Lot		
3.16.3.21	Multifunction metering instrument	1	Nos		
3.16.3.22	Voltage and speed regulator component and actuator	1	Nos		
3.16.3.23	Controller components	1	Nos		
3.16.3.24	Instrument, detectors	1	Nos		
3.16.4	Spare for Batteries				
3.16.4.1	One unit of battery used in 220 V DC system	1	Nos		
3.16.4.2	Loose parts for 220 V DC - connection elements, cables, links, etc	1	Lot		
3.16.4.3	One unit of battery used in 48 Vdc system	1	Nos		
3.16.4.4	Loose parts for 48 V DC - connection elements, cables, links, etc	1	Lot		
3.16.5	Spare for Battery Chargers				
3.16.5.1	Complete bridge of thyristors assembled on a cooling base	1	Nos		
3.16.5.2	Controller, complete including each type of card used	1	Nos		
3.16.5.3	Loose elements - auxiliary relays, breakers, metering instruments,	1	Lot		
	control switches, fuses, etc.				
3.16.6	Other necessary works as per Employer's Requirement and	1	Lot		
	Conditions of Contract, if any, not included above (specify)				
	, , ,		<u> </u>	Sub Total 3.16	
					1

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations

Price Schedule

Item No.	Description	Qty	Unit	Unit Rate (b)	Total Price (c)
Item 110.	Description	Qij	Cint	US\$	US\$
				EXW plus all related	USG
				cost as defined in foot	
				note	
		1	2	3	(1) x (3)
3.17	Mandatory spare parts - Miscellaneous material	1	2	3	(1) x (3)
3.17.1	Junction and marshalling boxed, outdoor, one of each type used	1	Lot		
3.17.2	Junction and marshalling boxed, indoor, one of each type used	1	Lot		
3.17.3	Outdoor lighting fixture, one unit of each type used	1	Lot		
3.17.4	Post-type insulator, one unit of each type used	1	Lot		
3.17.5	Suspension insulator, 5% of the total used	1	Lot		
3.17.6	Bus bar (rigid and strain) hardware, including, connectors, terminals,	1	Lot		
3.17.0	separator, corona rings, 5% of each type used, minimum one unit	1	Lot		
3.17.7	Grounding conductors, 5% of the installed conductors (stranded	1	Lot		
3.17.7		1	Lot		
2.17.0	copper conductor, rectangular-shape copper bar and grounding rod)	1	т.		
3.17.8	Fission connection material, including molds, welding powder and	1	Lot		
	installation tools, quantity required to make 5% of the total executed				
2.15.0	connections				
3.17.9	Mechanical connectors for grounding, 5% of the total executed	1	Lot		
	connections				
3.17.10	Other necessary works as per Employer's Requirement and	1	Lot		
	Conditions of Contract, if any, not included above (specify)				
				Sub Total 3.17	
3.18	Mandatory spare parts for 400kV and 220kV GIS			1	
3.18.1	Spare Gas				
3.18.1.1	SF6 bottles required to fill the two largest volume compartments for	2	Lot		
	400kV and 220kV				
3.18.2	Circuit Breakers, 4000 A, 50kA (For 400kV)				
3.18.2.1	Circuit breaker, complete pole assembly	1	Lot		
3.18.2.2	Complete sets of main contacts	1	Lot		
3.18.2.3	Complete sets of arcing contacts	2	Lot		
3.18.2.4	Operating mechanism, complete	1	Lot		
3.18.2.5	Closing coils	10	Nos		
3.18.2.6	Tripping coils	10	Nos		
3.18.3	Circuit Breakers, 4000 A, 50kA (For 220kV)				
3.18.3.1	Circuit breaker, complete pole assembly	1	Lot		·
3.18.3.2	Complete sets of main contacts	1	Lot		
3.18.3.3	Complete sets of arcing contacts	2	Lot		
3.18.3.4	Operating mechanism, complete	1	Lot		
3.18.3.5	Closing coils	10	Nos		
3.18.3.6	Tripping coils	10	Nos		

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations

Price Schedule

Item No.	Description	Qty	Unit	Unit Rate (b)	Total Price (c)
Item No.	Description	Qıy	Onit	US\$	US\$
				EXW plus all related	USS
				cost as defined in foot	
				note	
		1	2	3	(1) x (3)
3.18.4	Disconnect-Switches, 4000 A (For 400kV)	1		J	(1) x (3)
3.18.4.1	Disconnect-Switch, complete pole	1	Nos		
3.18.4.2	Complete set of contacts	2	Nos		
3.18.4.3	Operating mechanism, complete	1	Nos		
3.18.4.4	Operating mechanism motor	2	Nos		
3.18.5	Disconnect-Switches, 4000 A (For 220kV)		1103		
3.18.5.1	Disconnect-Switch, complete pole	1	Nos		
3.18.5.2	Complete set of contacts	2	Nos		
3.18.5.3	Operating mechanism, complete	1	Nos		
3.18.5.4	Operating mechanism motor	2	Nos		
3.18.6	Maintenance Earthing Switches (For 400kV)		1103		
3.18.6.1	Earthing-Switch, complete pole	1	Lot		
3.18.6.2	Complete set of contacts	2	Nos		
3.18.6.3	Operating mechanism, complete	1	Lot		
3.18.6.4	Operating mechanism motor	2	Nos		
3.18.7	Maintenance Earthing Switches (For 220kV)		1100		
3.18.7.1	Earthing-Switch, complete pole	1	Lot		
3.18.7.2	Complete set of contacts	2	Nos		
3.18.7.3	Operating mechanism, complete	1	Lot		
3.18.7.4	Operating mechanism motor	2	Nos		
3.18.8	High-speed earthing Switches (For 400kV)				
3.18.8.1	High-speed earthing switch, complete pole	1	Lot		
3.18.8.2	Complete set of contacts	2	Nos		
3.18.8.3	Operating mechanism, complete	1	Lot		
3.18.8.4	Operating mechanism motor	2	Nos		
3.18.9	High-speed earthing Switches (For 220kV)				
3.18.9.1	High-speed earthing switch, complete pole	1	Lot		
3.18.9.2	Complete set of contacts	2	Nos		
3.18.9.3	Operating mechanism, complete	1	Lot		
3.18.9.4	Operating mechanism motor	2	Nos		
3.18.10	Other Equipment				
3.18.10.1	Voltage transformer, 400 kV, complete with disconnecting	3	Nos		
	and earthing switch				
3.18.10.2	Voltage transformer, 220 kV, complete with disconnecting	3	Nos		
	and earthing switch				
3.18.10.3	Current transformer, metering core, loose part for 400kV	6	Nos		
3.18.10.4	Current transformer, metering core, loose part for 220kV	6	Nos		
3.18.10.5	Current transformer, protection core, loose part for 400kV	6	Nos		
3.18.10.6	Current transformer, protection core, loose part for 220kV	6	Nos		

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations Price Schedule

	wn of Rates and Prices Schedule No. 3. Plant, Goods and Equipme				
Item No.	Description	Qty	Unit	Unit Rate (b)	Total Price (c)
				US\$	US\$
				EXW plus all related	
				cost as defined in foot	
				note	
		1	2	3	(1) x (3)
3.18.11	400kV GIS and 220kV GIS Bay, Local Control Cabinet				
3.18.11.1	One Bay Local Control Cabinet complete, wired,	2	Lot		
	with all specified devices				
3.18.12	Bus bar Elements (For 400kV)				
	Bus conductor elements	2	Lot		
	Bus connection elements	2	Lot		
	GIS insulators, one of each type used	2	Lot		
	Pressure relief elements	2	Lot		
3.18.13	Bus bar Elements (For 220kV)				
	Bus conductor elements	2	Lot		
	Bus connection elements	2	Lot		
	GIS insulators, one of each type used	2	Lot		
	Pressure relief elements	2	Lot		
3.18.14	SF6-to-Air Bushing Modules				
	SF6-to-air bushing module, 400 kV, single phase	1	Lot		
	SF6-to-air bushing module, 220 kV, single phase	1	Lot		
3.18.15	Loose Spare Parts				
3.18.15.1	5% of auxiliary relays, control devices, fuses, terminal blocks, etc.	2	Lot		
	minimum one unit of each type used				
3.18.16	Other necessary works as per Employer's Requirement and	1	Lot		
	Conditions of Contract, if any, not included above (specify)				
				Sub Total 3.18	
3.19	Spare of LV control and power cables				
3.19.1	LV control cable, 5% of the installed cables	1	Lot		
3.19.2	LV power cable, 5% of the installed cables	1	Lot		
3.19.3	Cable installation accessories - 5% of the installed material	1	Lot		
3.19.4	Other necessary works as per Employer's Requirement and	1	Lot		
	Conditions of Contract, if any, not included above (specify)				
				Sub Total 3.19	
3.20	Spare parts of Mechanical Equipment				
3.20.1	Fire protection				
3.20.1.1	Fire protection/detection for auto transformer - one unit of each type	1	Lot		
	used				
3.20.1.2	Clean-agent fire extinguisher	1	Lot		
3.20.1.3	Control building general fire protection/detection system, one unit of	1	Lot		
	each component used				
3.20.1.4	GIS building general fire protection/detection system, one unit of	1	Lot		
	each component used				
3.20.2	Control building HVAC system				
3.20.2.1	Throwaway air filters per air conditioning unit	1	Lot		
3.20.2.2	Pulley belts per air conditioning unit motor	1	Lot		
3.20.2.3	Thermostat per air conditioning unit	1	Lot		
3.20.3	GIS building ventilation system				
3.20.3.1	Throwaway air filters per ventilation system	1	Lot		
3.20.3.2	Pulley belts per ventilation unit motor	1	Lot		
3.20.3.3	Thermostat per ventilation unit	1	Lot		
3.20.4	Other necessary works as per Employer's Requirement and	1	Lot		
	Conditions of Contract, if any, not included above (specify)				

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations

Price Schedule

Breakdown of Rates and Prices Schedule No. 3. Plant, Goods and Equipment (Including Mandatory Spare Parts) Supplied from

Item No.	Description	Qty	Unit	Unit Rate (b) US\$ EXW plus all related cost as defined in foot note	Total Price (c ) US\$
		1	2	3	(1) x (3)
3.21	Works at New-Hetauda				
3.21.1	Approach cable and hardware for termination of OPGW including joint box of Ratmate – Hetauda D/C Lines at New Hetauda Substation End including necessary AC,DC and Interfacing cable for tele protection application. Addition to the above Telecommunication works should include connection, extension and configuration of the local and network remote fiber optic equipment	1	Lot		
	and all works required for the connection, extension and configuration of the phone system as well as for tele protection				
	configuration of the phone system as wen as for the protection			Sub Total 3.21	
3.22	Works at Lapsiphedi			Sub 10tai 3.21	
3.22.1	Supply and installation of necessary approach cable and hardware for termination of OPGW of Ratmate – Lapsiphedi D/C Lines at Lapsiphedi Substation End, it's interfacing with existing DPC for tele protection application and necessary SDH, MUX/DMUX telecommunication terminal equipment required for the communication of the 400 kV Lines and its integrations with SAS at both end substations and SCADA system of the LDC. Addition to above Telecommunication works should include connection, extension and configuration of the local and network remote fiber optic equipment and all works required for the connection, configuration and extension of the phone system as well as for tele	1	Lot		
				Sub Total 3.22	
		_		ward to Grand SC-5)	
			of Bidder: of Bidder:		
Note:	Signa	tare (	or Diduct:	<u>l</u>	
	alue is indicative, the Contractor will validate as per item 1.1.6 of Des	ign V	Vorks (Elec	etrical)	

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations

Price Schedule

Breakdown of Rates and Prices Schedule No. 4. Installation and Other Services including all related Civil

Item No.	Description	Total
4.1	Breakdown of General Installation and Construction Items ( from Schedule No.	
	4.1)	
4.2	Breakdown of Earthworks (from Schedule No.4.2)	
4.3	Breakdown of Civil Works (from Schedule No.4.3)	
4.4	Other Installation Services (from Schedule No.4.5)	
4.5	Total Excluding Summary of Breakdown of Day works (from Schedule	
4.5	4.4) (Carried forward to Grand SC-5)	
4.6	Summary of Breakdown of Day works (from Schedule 4.4) (Carried	
4.0	forward to Grand SC-5)	
4.7	Total Including Breakdown of Day works.	
	Name of the Bidder:	
	Signature of Bidder:	

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations Price Schedule

	Schedule No. 4.1: Breakdown of General Insta				
Item no.	Description	Qty.	Unit	Unit Rate in	Amount in US\$
				US\$	
		1	2	3	(1)x(3)
4.1.1	Electromechanical Works General				
4.1.1.1	Indoor and outdoor storage facilities for storing equipment	1	Lot		
	and material in substation				
4.1.1.2	Site Office, Accommodation and vehicular arrangement as	1	Lot		
	Specified in PSR				
4.1.1.3	Operation and Maintenance Manuals and Procedures	1	Lot		
4.1.1.4	"As-Built" Drawings for All Works including civil,	1	Lot		
	building, mechanical etc.				
4.1.1.5	Other necessary works as per Employer's Requirement and	1	Lot		
7.1.1.5	Conditions of Contract, if any, not included above	1	Lot		
	Conditions of Contract, if any, not included above		6.	ıb Total 4.1.1	
4.1.2	AIS HV and MV Equipment Installation		St	10 10tal 4.1.1	
4.1.2.1	167 MVA, (400/√3/220/√3/33) kV, Single Phase Auto-	7	Nos	Г	
4.1.2.1		/	NOS		
	Transformer with OLTC, RTCC Facility, Surge protection				
	arrangement (AIS) for HV, IV and LV side and with				
	Bushing CT complete with all accessories as specified				
4.1.2.2	Capacitor Voltage Transformer (CVT) 400kV, Single	18	Nos		
	Phase				
	2 Windings, Secondary Voltage 110V, Accuracy 0.2, Min				
	Burden 50VA, Application Metering				
4.1.2.3	Current Transformer (CT), 400kV, Single Phase, Live	18	Nos		
_	Type,	_			
	3 Core, 2000-1000-500/1A, Class 0.2, Rated Output 15VA				
	5 Core, 2000 1000 500/171, Class 0.2, Rated Output 15 v71				
4.1.2.4	Current Transformer (CT), 72.5kV, Single Phase	6	Nos		
4.1.2.4		O	INUS		
4 1 2 5	2 Windings	1.0	3.7		
4.1.2.5	400kV Surge Arrester (SA), Zinc Oxide	18	Nos		
	366 kV Rated Voltage, 20kA, 12kJ/kV				
4.1.2.6	Substation Service Transformer, 630 kVA, 33/0.400kV	2	Nos		
4.1.2.7	30kV,10kA Lightning arrester for 33kV line bays with	6	Nos		
	support structure, earthing arrangement all complete				
4.1.2.8	30kV,10kA Lightning arrester for 33/0.4kV station service	6	Nos		
	transformers with support structure, earthing arrangement				
	all complete				
4.1.2.9	72.5kV Double Break Isolator, Single Phase	1	Lot		
4.1.2.10	72.5kV Circuit Breaker, Three Phase, 50Hz.	2	Nos		
4.1.2.11	72.5kV Current Transformer	6	Nos.		
4.1.2.12	400kV Bus Support Post Insulator	1	Lot		
4.1.2.13	220kV Bus Support Post Insulator	1	Lot		
4.1.2.14	72.5kV Bus Support Post Insulator	1	Lot		
4.1.2.15	Suspension/Tension Insulator Strings, Including Hardware	1	Lot		
4.1.2.16	Other necessary works as per Employer's Requirement and	1	Lot		
7.11.2.10		1	Lot		
	Conditions of Contract, if any, not included above		S,	ıb Total 4.1.2	
4.1.3	Hot-Dip Galvanized Steel Installation		51	10 10tal 4.1.2	
4.1.3.1	Gantry Column for 400 kV Incoming Line	7	Ea.		
4.1.3.2	Gantry Girder for 400 kV Incoming Line				
		6	Ea.	+	
4.1.3.3	Support Structure for 400 kV Current Transformer	18	Ea.		
4.1.3.4	Support Structure for 400 kV Capacitive Voltage	18	Ea.		
	Transformer				
4.1.3.5	Support Structure for 400 kV Surge Arrester	18	Ea.		
4.1.3.6	Support Structure for 400 kV Bus Support	1	Lot		
4.1.3.7	Support Structure for 220 kV Bus Support	1	Lot		
4.1.3.8	Support Structure for 72.5 kV Current Transformer	6	Ea.		
4.1.3.9	Support Structure for 72.5 kV Bus Support or Pot Head	1	Lot	<u> </u>	
4.1.3.10	Support Structure for 72.5 kV Single Switch Stand	1	Lot		
4.1.3.11	Structures for Lightning Mast and other Lighting	1	Lot		
4.1.3.12	Other necessary works as per Employer's Requirement and	1	Lot		
	Conditions of Contract, if any, not included above				
	. */	•	Su	ib-Total 4.1.3	
4.1.4	Bus Bar and Overhead Connections Installation		•		
4.1.4.1	5" AL. Tubular Bus Bar	1	Lot		
	141.30mm Outer Diameter, 9.53mm Thickness				
4.1.4.2	Bus bar Connectors and Hardware	1	Lot		
	(Tube to NEMA Pads, Bus Supports, etc)	1	200		
	(1 acc to 112.11111 ado, Dub Supports, etc)	l	l	1	

T.	Schedule No. 4.1: Dreakdown of General Insta				
Item no.	Description	Qty.	Unit	Unit Rate in	Amount in US\$
				US\$	
		1	2	3	(1)x(3)
4.1.4.3	Bare Cond. ACSR	1	Lot		
	54 Strand 3.53mm AL 7 Strands 3.53mm Steel	1	200		
4144		1	T .4		
4.1.4.4	Other necessary works as per Employer's Requirement and	1	Lot		
	Conditions of Contract, if any, not included above				
			Su	b-Total 4.1.4	
4.1.5	LV Control and Power Cable Installation				
4.1.5.1	LV Control Cables	1	Lot		
4.1.5.2	LV Power Cables	1	Lot		
4.1.5.3	Cable Installation Accessories	1	Lot		
	(Cable Gland, Labels Terminal Strips, etc)				
4.1.5.4	XLPE Power Cable, 33kV (from LV side of the Auto	1	Lot		
	transformer to 33kV line bay arrangement)				
4.1.5.5	33kV Cable Pothead	1	Lot		
4.1.5.6	Power Cable for Filter Plant (Transformer) 3.5CX240	1	Lot		
7.1.5.0		1	Lot		
	sqmm (Armoured, PVC Insulated) with suitable				
	termination arrangement all complete				
4.1.5.7	Cable carriers (trays, conduits, ducts) for routing the HV &	1	Lot		
	LV power, control, instrumentation and communication				
	interface cables.				
4.1.5.8	Other necessary works as per Employer's Requirement and	1	Lot		
7.1.3.0	Conditions of Contract, if any, not included above		Lot		
	Conditions of Contract, if any, not included above		_		
			Su	ıb-Total 4.1.5	
4.1.6	AC and DC Station Supply Installation				
4.1.6.1	400 V AC Main Switch Board				
4.1.6.1.1	400V Switchgear with Automation Controls,	3	Nos		
	1000A CB and 2 Current Transformers				
4.1.6.1.2	400V Switchgear with Automation Controls,	1	Nos		
4.1.0.1.2		1	1105		
	630A CB and 2 Current Transformers				
4.1.6.1.3	Distribution panel Bus-A,	1	Nos		
	400V, 3 Phase, 1000A, 20kA for 1Sec.				
	(5) 400A Breakers, (1) Potential Transformer				
4.1.6.1.4	Distribution panel Bus-B,	1	Nos		
	400V, 3 Phase, 1000A, 20kA for 1Sec.	-	1,05		
	(6) 400A Breakers, (1) Potential Transformer				
4.1.6.2	400 V AC Main Lighting Board				
4.1.6.2.1	100kVA Lighting Transformer	2	Nos		
4.1.6.2.2	Distribution panel, 400V, 3 Phase, 4 Wire, 20kA, 1Sec.	1	Nos		
	Bus-A (4) 63A, (1) 400A Breakers,				
	Bus-B (4) 63A, (1) 400A Breakers,				
	Bus-C (5) 63A				
	TIE A-B 400A breaker, TIE B-C 400A Breaker				
4.1.6.3	400 V AC Emergency Lighting Distribution Board				
4.1.6.3.1	100kVA Lighting Transformer	1	Nos		
4.1.6.3.2	Distribution panel Bus-A	1	Nos		
	400V, 3 Phase, 4 Wire, 20kA, 1Sec.				
	(5) 63A, (1) 400A 4 Pole Breakers,				
	TIE A-B 100A breaker				
4.1.6.3.3	Distribution panel Bus-B	1	Nos		
	400V, 3 Phase, 4 Wire, 20kA, 1Sec.				
	(3) 63A, (1) 400A 4 Pole Breakers				
4.1.6.4	400 V AC Distribution Board			1	
4.1.6.4.1	400V Switchgear with Automation Controls,	1	Nos		
4.1.0.4.1		1	INOS		
	1000A CB and 2 Current Transformers				
4.1.6.4.2	400/110V, 50VA, Potential Transformer	3	Nos		
4.1.6.4.3	400/1A Current Transformer, Class 5P20	1	Nos		
4.1.6.4.4	400V Switchgear with Automation Controls,	1	Nos		
	630A with 2 Current Transformers			1	
4.1.6.4.5	400v Distribution panel Bus-A	1	Nos		
4.1.0.4.3		1	INOS		
	(1) 400A, (4) 100A, (8) 63A, (2) 32A 4 Pole Breakers,				
	(14) 63A, (8) 32A 2 Pole Breakers				
	TIE A-B 400A Breaker			1	
4.1.6.4.6	400v Distribution panel Bus-B	1	Nos		
	(1) 400A, (3) 100A, (8) 63A 4 Pole Breakers	1	1.00	1	
4465	(14) 63A, (5) 32A 4 Pole Breakers	<b> </b>	-		
4.1.6.5	400 V AC AMF Panel				
4.1.6.5.1	400/1A Current Transformer, Class 1	3	Nos	<u> </u>	
	·				

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations Price Schedule

_	Schedule No. 4.1: Breakdown of General Insta				
Item no.	Description	Qty.	Unit	Unit Rate in	Amount in US\$
				US\$	
		1	2	3	(1)x(3)
4.1.6.5.2	400/1A Current Transformer, Class 5P20	1	Nos		
4.1.6.6	DC Chargers and Batteries				
4.1.6.6.1	220V Battery Charger (Float/Boost)	6	Nos		
4.1.6.6.2	48V Battery charger (Float/Boast)	6	Nos		
	250A Throw over Switch, Interlock	12	Nos		
4.1.6.6.4	Battery, 220Vdc, 108 Minimum Cells	4	Nos		
4.1.6.6.5	Battery, 48Vdc, 24 Minimum Cells	4	Nos		
		-	1105		
4.1.6.7	DC Distribution Boards	-	N.T.		
4.1.6.7.1	Distribution panel, 220V, 400A, 4kA for 1 Sec. 50	6	Nos		
	positions				
4.1.6.7.2	Distribution panel, 48V, 400A, 4kA for 1 Sec. 50 positions	4	Nos		
4.1.6.7.3	DC Fuse Box, 220Vdc	1	Lot		
4.1.6.7.4	DC Fuse Box, 48Vdc	1	Lot		
4.1.6.8	Other Equipment				
4.1.6.8.1	Diesel Generator Set, 250kVA (Including Fuel Tank) and	1	Nos		
	all accessories				
4.1.6.9	Other necessary works as per Employer's Requirement and	1	Lot		
4.1.0.5	Conditions of Contract, if any, not included above	1	Lot		
	Conditions of Contract, if any, not included above		C	L T-4-1 4 1 6	
4.1.5	400 LV C L L L L C L L (1.10 L L			ıb-Total 4.1.6	
4.1.7	400 kV Gas Insulated Switchgear (1-1/2 breaker arrang	ement)	Installati	ion	
	Line/Feeder Bay				
4.1.7.1.1	SF6 Circuit Breaker, 400kV, 4000A, 50kA, Three Pole	10	Nos		
4.1.7.1.2	Current Transformer Modules, three cores, 400kV, single-	20	Nos		
	phase,				
	Three-phase set $(1 \text{ set} = 3 \text{ single phase})$				
4.1.7.1.3	Circuit Breaker Isolating Disconnect Switches, 400kV,	20	Nos		
	4000A, 50kA, Single-phase, Three-phase set (1 set = 3				
	single phase)				
4.1.7.1.4	Circuit Breaker Maintenance Earthing Switches, 400kV,	20	Nos		
7.1.7.1.7	50kA,	20	1103		
	Single-phase, Three-phase set (1 set = 3 single phase)	4.0			
4.1.7.1.5	Line/Feeder High Speed Earthing Switches, with	10	Nos		
	removable earthing link 400kV, 50kA, single-phase, three-				
	phase set (1 set = 3 single phase)				
4.1.7.1.6	Voltage Transformers, 400kV, dual secondary, with	10	Nos		
	earthing link, Single-phase, Three-phase set (1 set = 3				
	single phase)				
4.1.7.1.7	Line/Feeder Disconnect Switches, 400kV, 4000A, 50kA,	10	Nos		
	Single-phase, Three-phase set (1 set = 3 single phase)				
4.1.7.1.8	Line/Feeder Maintenance Earthing Switches, 400kV,	10	Nos		
4.1./.1.0		10	INUS		
11710	50kA,	4.0			
4.1.7.1.9	Bay Local Control Cabinet including (device controls,	10	Nos		
	instrumentation, interlocking, annunciation, gas density				
	monitoring, circuit breaker monitoring)				
4.1.7.1.10	Partial Discharge Monitoring System including monitoring	10	Nos		
	sensors and diagnostic equipment (per bay)				
4.1.7.1.11	LV control and power cable connections from Local	1	Lot		
	Control Cabinet to all GIS equipment/devices				
4.1.7.1.12	All metallic structures and supports required for GIS	1	Lot		
	complete with accessories				
4 1 7 1 13	All walkways, platforms, stairs, ladders and accessories	1	Lot		
4.1.7.11.13	required for access to all GIS devices	1	Lot		
4 1 7 1 14		10	D		
4.1./.1.14	Gas Insulated bus (GIB) with required GIS Termination	10	Bays		
	along with supports for GIB run for whole Line/Feeder				
	Bay (Three phase set)				
4.1.7.2	Transformer Bay				
4.1.7.2.1	SF6 Circuit Breakers, 400kV, 4000A, 50kA, three-pole,	4	Nos		
	with Control Point on Wave Switching Device			<u> </u>	
4.1.7.2.2	Current Transformer Modules, Three cores, 400kV,	8	Nos		
	Single-phase, Three-phase set (1 set = 3 single phase)				
4.1.7.2.3	Circuit Breaker Isolating Disconnect Switches, 400kV,	8	Nos		
	4000A, 50kA, Single-phase, Three-phase set (1 set = 3				
	single phase)				
41724	Circuit Breaker Maintenance Earthing Switches, 400kV,	0	NT	+	
4.1.7.2.4		8	Nos		
	50kA,				
	Single-phase, Three-phase set (1 set = 3 single phase)				

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations Price Schedule

Item no.	Description	Qty.	Unit	Unit Rate in	Amount in US\$
	•			US\$	
		1	2	3	(1)x(3)
4.1.7.2.5	Line/Feeder High Speed Earthing Switches, with	3	Nos		, , , , ,
	removable earthing link 400kV, 50kA, single-phase, three-				
	phase set $(1 \text{ set} = 3 \text{ single phase})$				
4.1.7.2.6	Voltage Transformers, 400kV, dual secondary, with	3	Nos		
	disconnect switch and maintenance earthing switch, single-				
	phase, three-phase set (1 set = 3 single phase)				
4.1.7.2.7	Transformer Disconnect Switches, 400kV, 4000A, 50kA,	6	Nos		
	Single-phase, Three-phase set (1 set = 3 single phase)				
4.1.7.2.8	Transformer Maintenance Earthing Switches, 400kV,	6	Nos		
	50kA, single-phase, three-phase set (1 set = 3 single phase)				
4.1.7.2.9	Bay Local Control Cabinet including (device controls,	4	Nos		
	instrumentation, interlocking, annunciation, gas density				
	monitoring, circuit breaker monitoring)				
4.1.7.2.10	Partial Discharge Monitoring System including monitoring	4	Nos		
	sensors and diagnostic equipment (per bay)				
4.1.7.2.11	LV control and power cable connections from Local	1	Lot		
	Control Cabinet to all GIS equipment/devices				
4.1.7.2.12	All metallic structures and supports required for GIS	1	Lot		
	complete with accessories				
4.1.7.2.13	All walkways, platforms, stairs, ladders and accessories	1	Lot		
	required for access to all GIS devices				
4.1.7.2.14	Isolating & Earthing Switches, 400kV, 4000A, 50kA	3	Nos		
	Single phase, and Auxiliary Gas Insulated Bus (GIB) for				
	Spare Transformer Operation,GIS to AIS Bushing				
	termination, jumpers, required CT, Al. tube, metering,				
	control and protection as required all complete. 33kV				
	isolators, 33kV cables, jumpers as required all complete				
4.1.7.2.15	Three Single Phase Gas Insulated bus (GIB) and required	3	Bays		
	GIS Termination along with supports for GIB run for				
	whole Transformer Bay Lot				
4.1.7.3	Diameter Middle Breaker Bay				
4.1.7.3.1	Proposed SF6 Diameter middle Circuit Breakers associated	4	Nos		
	with Line Feeder, 400kV, 4000A, 50kA, three-pole				
4.1.7.3.2	Proposed SF6 Diameter middle Circuit Breakers associated	2	Nos		
	with Auto Transformer and Line Feeder, 400kV, 4000A,				
	50kA, three-pole, with Control Point on Wave Switching				
	Device				
4.1.7.3.3	Current Transformer Modules, Three cores, 400kV,	12	Nos		
	Single-phase, Three-phase set (1 set = 3 single phase)				
4.1.7.3.4	Circuit Breaker Isolating Disconnect Switches, 400kV,	12	Nos		
	4000A, 50kA, Single-phase, Three-phase set (1 set = 3				
	single phase)				
4.1.7.3.5	Circuit Breaker Maintenance Earthing Switches, 400kV,	12	Nos		
	50kA,				
	Single-phase, Three-phase set (1 set = 3 single phase)				
4.1.7.3.6	Bay Local Control Cabinet including (device controls,	6	Nos		
	instrumentation, interlocking, annunciation, gas density				
	monitoring, circuit breaker monitoring)				
4.1.7.3.7	Partial Discharge Monitoring System including monitoring	6	Nos		
	sensors and diagnostic equipment (per bay)				
4.1.7.3.8	LV control and power cable connections from Local	1	Lot		
	Control Cabinet to all GIS equipment/devices				
4.1.7.3.9	All metallic structures and supports required for GIS	1	Lot		
	complete with accessories				
4.1.7.3.10	All walkways, platforms, stairs, ladders and accessories	1	Lot		
	required for access to all GIS devices				
4.1.7.4	Gas Insulated BUSBAR				
4.1.7.4.1	400kV, Double Bus Bar of 3 single phase (isolated), SF6	7	Diamete		
	gas insulated, metal enclosed 4000A bus bars each		r		
	enclosed in three individual bus enclosures per diameter				
4.1.7.4.2	Voltage Transformers, 400kV, dual secondary, single-	2	Nos		
	phase, three-phase set (1 set = 3 single phase)				
4.1.7.4.3	Main Bus Bar High Speed Earthing Switches, with	2	Nos		
	removable earthing link 400kV, 50kA, Single-phase, Three-		_		
	phase set (1 set = 3 single phase)			[	
-	· · · · · · · · · · · · · · · · · · ·		•		

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations Price Schedule

Item no.	Description	Qty.	Unit	Unit Rate in	Amount in US\$
				US\$	
		1	2	3	(1)x(3)
4.1.7.4.4	Main Bus Bar Earthing Switches, with removable earthing link 400kV, 50kA, Single-phase, Three-phase set (1 set = 3 single phase)	2	Nos		
4.1.7.4.5	Bus Bar Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase, three-phase set (1 set = 3 single phase)	2	Nos		
4.1.7.5	Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above	1	Lot		
	Conditions of Contract, if any, not included above		Su	b-Total 4.1.7	
4.1.8	220kV Gas Insulated Switchgear (1-1/2 breaker arrange	ment) l			
4.1.8.1	Line/Feeder Bay	,			
4.1.8.1.1	SF6 Circuit Breakers, 220kV, 4000A, 50kA, three-pole	8	Nos		
4.1.8.1.2	Current Transformer Modules, three cores, 220kV, single-	16	Nos		
	phase, three-phase set (1 set = 3 single phase)				
4.1.8.1.3	Circuit Breaker Isolating Disconnect Switches, 220kV, 4000A, 50kA, single-phase, three-phase set (1 set = 3	16	Nos		
41014	single phase)	1.6	NT		
4.1.8.1.4	Circuit Breaker Maintenance Earthing Switches, 220kV, 50kA, single-phase, three-phase set (1 set = 3 single phase)	16	Nos		
4.1.8.1.5	Line/Feeder High Speed Earthing Switches, with	8	Nos		
	removable earthing link 220kV, 50kA, single-phase, three-				
4.1.8.1.6	phase set (1 set = 3 single phase) Voltage Transformers, 220kV, dual secondary, with	8	Nos		
4.1.6.1.0	earthing link, single-phase, three-phase set (1 set = 3 single phase)	0	1103		
4.1.8.1.7	Line/Feeder Disconnect Switches, 220kV, 4000A, 50kA, single-phase, three-phase set (1 set = 3 single phase)	8	Nos		
4.1.8.1.8	Line/Feeder Maintenance Earthing Switches, 220kV, 50kA, single-phase, three-phase set (1 set = 3 single phase)	8	Nos		
4.1.8.1.9	Bay Local Control Cabinet including (device controls,	8	Nos		
1.1.0.1.5	instrumentation, interlocking, annunciation, gas density	Ü	1105		
	monitoring, circuit breaker monitoring)				
4.1.8.1.10	Partial Discharge Monitoring System including monitoring	8	Nos		
	sensors and diagnostic equipment (per bay)				
4.1.8.1.11	LV control and power cable connections from Local	1	Lot		
4 1 0 1 12	Control Cabinet to all GIS equipment/devices		Ŧ .		
4.1.8.1.12	All metallic structures and supports required for GIS complete with accessories	1	Lot		
4.1.8.1.13	All walkways, platforms, stairs, ladders and accessories	1	Lot		
4 1 0 1 14	required for access to all GIS devices	8	D		
4.1.8.1.14	Three Single Phase Gas Insulated bus (GIB) and required GIS Termination along with supports for GIB run for the	8	Bays		
	whole Line/Feeder				
4.1.8.2	Transformer Bay			1	
4.1.8.2.1	SF6 Circuit Breakers, 220kV, 4000A, 50kA, three-pole	6	Nos		
4.1.8.2.2	Current Transformer Modules, three cores, 220kV, single-	12	Nos		
41022	phase, three-phase set (1 set = 3 single phase)	12	NT.		
4.1.8.2.3	Circuit Breaker Isolating Disconnect Switches, 220kV, 4000A, 50kA, single-phase, three-phase set (1 set = 3	12	Nos		
	single phase)				
4.1.8.2.4	Circuit Breaker Maintenance Earthing Switches, 220kV,	12	Nos	1	
	50kA, single-phase, three-phase set (1 set = 3 single phase)				
4.1.8.2.5	Transformer High Speed Earthing Switches, with	5	Nos		
	removable earthing link 220kV, 50kA, single-phase, three-				
	phase set (1 set = 3 single phase)				
4.1.8.2.6	Voltage Transformers, 220kV, dual secondary, with	5	Nos		
	earthing link, single-phase, three-phase set (1 set = 3 single				
4.1.8.2.7	phase) Transformer Disconnect Switches,220kV, 4000A, 50kA,	8	Nos		
7.1.0.2./	single-phase, three-phase set (1 set = 3 single phase)	0	INOS		
4.1.8.2.8	Transformer Maintenance Earthing Switches, 220kV,	8	Nos		
	50kA, single-phase, three-phase set (1 set = 3 single phase)				
4.1.8.2.9	Bay Local Control Cabinet including (device controls,	6	Nos		
	instrumentation, interlocking, annunciation, gas density				
4105:	monitoring, circuit breaker monitoring)		7.7		
4.1.8.2.10	Partial Discharge Monitoring System including monitoring	6	Nos		
	sensors and diagnostic equipment (per bay)				

Item no.	Description	Qty.	Unit	Unit Rate in	Amount in US\$
ittiii iio.	Description	Qıy.	Onit	US\$	Amount in OSS
		1	2	3	(1)x(3)
418211	LV control and power cable connections from Local	1	Lot	3	$(1)\lambda(3)$
4.1.6.2.11	Control Cabinet to all GIS equipment/devices	1	Lot		
4 1 8 2 12	All metallic structures and supports required for GIS	1	Lot		
1.1.0.2.12	complete with accessories		Lot		
4.1.8.2.13	All walkways, platforms, stairs, ladders and accessories	1	Lot		
	required for access to all GIS devices	1	201		
4 1 8 2 14	Isolating & Earthing Switches, 220kV, 4000A,	3	Set		
1.1.0.2.11	50kA,Single phase, and Gas Insulated Bus (GIB) for Spare		501		
	Transformer, with auxiliary Bus,GIS to AIS Bushing				
	termination, jumpers, required CT, Al. tube, metering,				
	control and protection as required all complete.				
4.1.8.2.15	Three Single Phase Gas Insulated bus (GIB) and required	6	Nos		
	GIS Termination along with supports for GIB run for the				
	whole Transformer Bay				
4.1.8.3	Diameter Middle Breaker Bay				
4.1.8.3.1	SF6 Circuit Breakers, 220kV, 4000A, 50kA, three-pole	6	Nos		
4.1.8.3.2	Current Transformer Modules, three cores, 220kV, single-	12	Nos		
	phase, three-phase set (1 set = 3 single phase)				
4.1.8.3.3	Circuit Breaker Isolating Disconnect Switches, 220kV,	12	Nos		
	4000A, 50kA, single-phase, three-phase set (1 set = 3				
	single phase)				
4.1.8.3.4	Circuit Breaker Maintenance Earthing Switches, 220kV,	12	Nos		
	50kA, single-phase, three-phase set (1 set = 3 single phase)				
4.1.8.3.5	Bay Local Control Cabinet including (device controls,	6	Nos		
	instrumentation, interlocking, annunciation, gas density				
	monitoring, circuit breaker monitoring)				
4.1.8.3.6	Partial Discharge Monitoring System including monitoring	6	Nos		
	sensors and diagnostic equipment (per bay)				
4.1.8.3.7	LV control and power cable connections from Local	1	Lot		
	Control Cabinet to all GIS equipment/devices				
4.1.8.3.8	All metallic structures and supports required for GIS	1	Lot		
	complete with accessories		_		
4.1.8.3.9	All walkways, platforms, stairs, ladders and accessories	1	Lot		
4104	required for access to all GIS devices				
<b>4.1.8.4</b> 4.1.8.4.1	Gas Insulated Bus Bars 220kV, Double 3 single phase (isolated), SF6 gas	7	Diamete		
4.1.0.4.1	insulated, metal enclosed 4000A bus bars each enclosed in				
	three individual bus enclosures per diameter		r		
4.1.8.4.2	Voltage Transformers, 220kV, dual secondary, single-	2	Nos		
7.1.0.7.2	phase, three-phase set (1 set = 3 single phase)		1103		
4.1.8.4.3	Main Bus Bar High Speed Earthing Switches, with	2	Nos		
	removable earthing link 220kV, 50kA, Single-phase, Three-		1,05		
	phase set (1 set = 3 single phase)				
4.1.8.4.4	Bus Bar Isolating Disconnect Switches, 220kV, 4000A,	2	Nos		
	50kA, single-phase, three-phase set (1 set = 3 single phase)				
4.1.8.5	Other necessary works as per Employer's Requirement and	1	Lot		
	Conditions of Contract, if any, not included above				
	·		Su	b-Total 4.1.8	
4.1.9	Complete with control & protection up to GIB sealing en	nd for a	ıll Feeder	and Transfor	mer Bays.
4.1.9.1	Installation of Control and Protection panels for 400 kV	station	as specif	ied in Scope :	and Employers
4.1.9.1.1	Circuit Breaker Relay Panel (Note: BCU should be	12	Nos		
	included in the Relay				
	Panel)(NHet=2nos,Lap=2nos,NDM=2nos,AutoTrans=2no				
	s,TieCB=4nos)				
4.1.9.1.2	Line Protection Panel (N-Het=2no,NDM=2no,Lap=2no)	12	Nos		
	(Note: line protection should include tele protection				
	terminals)				
4.1.9.1.3	Transformer Protection Panel	4	Nos		
41014	(Auto Trans Bay 1=1no,Auto Trans Bay 2=1no)	2	0 - 1		
4.1.9.1.4	400kV (Duplicate Bus Bar Protection)	2	Set		
4.1.9.1.5	Miscellaneous Relay and Control Equipment, not included above	1	Lot		
4.1.9.2	Installation set of Control and Protection panels for 220	kV ete	tion as er	ecified in Soc	ne and Employers
4.1.9.2.1	Circuit Breaker Relay Panel (Note: BCU should be	6	Nos	Actincu III SCC	pe and Employers
	included in the relay panel) (Auto Trans Bay 1=2nos,Auto		1100		
	Trans Bay 2=2nos, Tie CB=2nos)				
		<u> </u>	L	<u>ı</u>	

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations Price Schedule

Item no.	Description	Qty.	Unit	Unit Rate in	
	•			US\$	
		1	2	3	(1)x(3)
4.1.9.2.2	Transformer Protection Panel	4	Nos		
4.1.9.2.3	(Auto Trans Bay 1=1no,Auto Trans Bay 2=1no) 220kV (Duplicate Bus Bar Protection)	2	Nac		
4.1.9.2.4	Miscellaneous Relay and Control Equipment, not included	1	Nos Lot		
1.1.9.2.1	above		Lot		
4.1.9.3	Installation of Control and Protection panels for 33 kV s	tation	as specific	ed in Scope a	nd Employers
4.1.9.3.1	Circuit Breaker Relay Panel (Note: BCU should be	2	Nos		• •
	included in the Relay Panel)				
4.1.9.3.2	Transformer Protection Panel	2	Nos		
4.1.9.3.3	Miscellaneous Relay and Control Equipment, not included above	1	Lot		
4.1.9.4	Installation of Substation Automation & Metering				
4.1.9.4.1	SAS Operator Station for control of 400/220/33 kV	1	Set		
4.1.9.4.2	Substation Automation System (SAS) for 400 kV System	7	Set		
	per diameter				
4.1.9.4.3	Substation Automation System (SAS) for 220kV System per diameter	7	Set		
4.1.9.4.4	Substation Automation System (SAS) for 33kV System per	2	Set		
7.1.7.4.4	feeder	_	501		
4.1.9.4.5	Substation Automation System (SAS) for Auxiliary Systen	1	Set		
4.1.9.4.6	Integration of all 400/220kV Bays under present scope	1	Lot		
	with the SCADA of SIEMENS (SINAUT Spectrum) at				
	Load Dispatch Centre, Kathmandu including supply of				
	Hardware, Software, accessories etc. complete as per Technical Specification.				
4.1.9.4.7	Telecommunication system for Ratmate	1	Lot		
	Fibre Optic SDH System	1	Lot		
	Phone System	1	Lot		
	400 kV Metering	1	Lot		
	220 kV Metering	1	Lot		
4.1.9.4.12	Miscellaneous Relay and Control Equipment, not included	1	Lot		
	above		Su	b-Total 4.1.9	
4.1.10	Grounding System			D 10ttl 1115	
4.1.10.1	Stranded Bare Copper 240 Sq. mm***Grid	1	Lot		
	(Including Fusion and Mechanical Connectors)				
4.1.10.2	Grounding Rods	1	Lot		
4.1.10.3	Embedded Grounding System - 400kV GIS (Including Connections to GIS metallic Structures,	1	Lot		
	Supports and Walkways/Platforms)				
4.1.10.4	Embedded Grounding System - 220kV GIS	1	Lot		
	(Including Connections to GIS metallic Structures,				
	Supports and Walkways/Platforms)				
4.1.10.5	Embedded Grounding System - Control room	1	Lot		
4.1.10.6	Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above	1	Lot		
	Conditions of Contract, if any, not included above		Sub	-Total 4.1.10	
4.1.11	Lightning Protection System		546	10001111110	
4.1.11.1	Overhead Galvanized Steel Wire, Including Hardware	1	Lot		
4.1.11.2	Lightening Mast for complete protection	1	Lot		
4.1.11.3	Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above	1	Lot		
	Conditions of Contract, if any, not included above		Sub	Total 4.1.11	
4.1.12	Firefighting System		542	7 10441 111111	
4.1.12.1	Fire protection/detection for 7 (Seven) auto transformers	1	Lot		
4.1.12.2	Fire protection/detection for 400kV GIS Building	1	Lot		
4.1.12.3	Fire protection/detection for 220kV GIS Building	1	Lot		
4.1.12.4 4.1.12.5	Fire protection/detection for Control House Fire protection/detection system for pump house building	1	Lot Lot		
4.1.12.5	Fire protection/detection system for generator diesel tank	1	Lot		
4.1.12.7	Portable fire extinguishers	1	Lot		
4.1.12.8	Clean-agent fire extinguishers	1	Lot		
4.1.12.9	Other necessary works as per Employer's Requirement and	1	Lot		
	Conditions of Contract, if any, not included above		6 :	Total 4 1 12	
4.1.13	HVAC And Ventilation Systems		Sub	Total 4.1.12	
1.11.13	printed from tentiation bystems				

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations Price Schedule

Item no.	Description	Qty.	Unit	Unit Rate in US\$	Amount in US\$			
		1	2	3	(1)x(3)			
4.1.13.1	400kV GIS Building HVAC and Ventilation Systems	1	Lot	-	( )::(-)			
4.1.13.2	220kV GIS Building HVAC and Ventilation Systems	1	Lot					
4.1.13.3	Control House HVAC and Ventilation Systems	1	Lot					
	, ,	U	Sul	b Total 4.1.13				
4.1.14	Accessories and Ancillary Material			•				
4.1.14.1	Junction and marshalling boxes, outdoor	1	Lot					
4.1.14.2	Junction and marshalling boxes, indoor	1	Lot					
4.1.14.3	Outdoor lighting, including lighting fixtures	1	Lot					
4.1.14.4	Indoor lighting, including lighting fixtures	1	Lot					
4.1.14.5	Control Cabinet for outdoor lighting	1	Lot					
4.1.14.6	Rail tracks for movement of power transformers on the	1	Lot					
	reinforced concrete foundations all complete.							
4.1.14.7	Electric Overhead Travelling Crane for installation and	2	Lot					
	removal of GIS Equipment (For 400 and 220 kV each)							
4.1.14.8	Visual Monitoring System	1	Lot					
4.1.14.9	Other necessary works as per Employer's Requirement and	1	Lot					
	Conditions of Contract, if any, not included above							
	<u> </u>		Sul	b Total 4.1.14				
4.1.15	Works at New-Hetauda							
4.1.15.1	Approach cable and hardware for termination of OPGW	1	Lot					
	including joint box of Ratmate - Hetauda D/C Lines at							
	New Hetauda Substation End including necessary AC,DC							
	and Interfacing cable for tele protection application.							
	Addition to the above Telecommunication works should							
	include connection, extension and configuration of the							
	local and network remote fiber optic equipment and all							
	works required for the connection, extension and							
	configuration of the phone system as well as for tele							
			Sul	b Total 4.1.15				
4.1.16	Works at Lapsiphedi							
4.1.16.1	Supply and installation of necessary approach cable and	1	Lot					
	hardware for termination of OPGW of Ratmate –							
	Lapsiphedi D/C Lines at Lapsiphedi Substation End, it's							
	interfacing with existing DPC for tele protection							
	application and necessary SDH, MUX/DMUX							
	telecommunication terminal equipment required for the							
	communication of the 400 kV Lines and its integrations							
	with SAS at both end substations and SCADA system of							
	the LDC. Addition to above Telecommunication works							
	should include connection, extension and configuration of							
	the local and network remote fiber optic equipment and all							
	works required for the connection, configuration and							
	·	1	Sul	o-Total 4.1.16				
	Name of the Bidder: Signature of Bidder:							
	Signature of Diagett							

	Schedule No. 4.2: Breakdown of Earthworks							
Item	Description	Qty.	Unit	Unit Rate in US\$	Amount in			
no.					US\$			
4.2.1	Site Clearing, Including Removal of Trees and Stumps	1	Lot					
4.2.2	Top Soil Stripping	1	Lot					
4.2.3	General Excavation	1	Lot					
4.2.4	Compacted Back Fill	1	Lot					
4.2.5	Uncompact Back Fill	1	Lot					
4.2.6	Surplus Disposal	1	Lot					
4.2.7	Surface Works, Including Compaction/Consolidation	1	Lot					
4.2.8	Other necessary works as per Employer's Requirement	1	Lot					
	and Conditions of Contract, if any, not included above							
	(specify)							
	Total (Carried to SC-4)							
	Name of the Bidder:							
	Signature of Bidder:							

	Schedule No. 4.3: Breakdown (	of Civi	il Work	<u> </u>	
T.	Description	Qty.	Unit	Unit Rate in US\$	Amount in
Item no.	-	1	2	3	(1)x(3)
4.3.1	Foundations		NI	I I	
4.3.1.1	Foundations of 400 kV Gantries Foundations of 400 kV Capacitor Voltage Transformers	7	Nos Nos		
4.3.1.2	& Tank Type Current Transformers	30	1103		
4.3.1.3	Foundation of 400 kV Surge Arrestor	18	Nos		
4.3.1.4	Foundations of 400 kV Post Type Insulator Bus Support	1	Lot		
4.3.1.5	Foundation, Oil Containment, and Sump Pit	7	Nos		
	For 400/220kV 167 MVA Single Phase Autotransformer Autotransformer 22kg/m Railway System	7	Nos		
4.3.1.6	(22kg/m Steel Rails, Rail Ties, Elastomeric Pad, Screws,	,	1105		
	Baseplate, and Rail Clamps)				
4.3.1.7	Firewalls Between Auto-Transformers	8	Nos		
4.3.1.8	Foundation for 400kV GIB Bus Runs to AIS Equipment	1	Lot Lot		
	Foundation for 220kV GIB Bus Runs to AIS Equipment Foundation of 220kV Post Type Insulator Bus Support	1	Lot		
	Foundation of 33kV Post Type Insulator Bus Support	1	Lot		
	Foundation of Station Service Transformer	2	Nos		
	Foundation of 72.5kV Circuit Breaker	2	Nos		
	Foundation of 72.5kV Current Transformer	6	Nos		
	Foundation of 33kV Single Phase Switches Foundation of 30kV,10kA Lightning arrester for line bays	6	Lot Nos		
	Foundations of 30kV,10kA Lightning arrester for	6	Nos		
4.3.1.17	33/0.4kV station service transformers				
4.3.1.18	Foundation of Diesel Generator Set & Fuel Tank	1	Nos		
4.3.1.19	Foundation for Lightning Mast as required for total	1	Lot		
	protection of equipment Other necessary works as per Employer's Requirement and	1	Lot		
4.3.1.20	Conditions of Contract, if any, not included above	1	Lot		
	, , , , , , , , , , , , , , , , , , ,			Sub Total 4.3.1	
4.3.2	External Works and Landscaping			I	
4.3.2.1	Improvements of existing earthen access road to asphalted	1	Lot		
4.3.2.2	road up to substation Internal Paving	1	Lot		
4.3.2.3	Landscaping, Including Maintenance up to Taking Over	1	Lot		
	Construction of reinforced concrete trenches/duct banks	1	Lot		
	with manholes for all types of HV/MV power and control				
4.3.2.4	cables between switchgear building, substation control				
	building and Autotransformer and all substation equipment as specified in Scope and Employers				
	Anti-weed treatment & stone spreading along with cement	1	Lot		
4.3.2.5	concrete layer, Internal drainage system, external drainage				
4.3.2.3	system and Sewage handling as as per the Employer's				
	requirements.	1	T .4		
4.3.2.6	Superficial storm drainage system to drain water outside substation during heavy rainfall	1	Lot		
4.3.2.7	Parking Areas	1	Lot		
4.3.2.8	Guard House	1	Lot		
4.3.2.9	Substation Perimeter Fence	1	Lot		
	Rain Water Harvesting as per the Employer's	1	Lat		
	Firefighting Pump House and Water Tank Security Lighting along the Fence and Inside the	1	Lot Lot		
	Retaining wall as per the Employer's requirements	1	Lot		
4.3.2.14	Other necessary works as per Employer's Requirement and	1	Lot		
4.3.2.14	Conditions of Contract, if any, not included above				
4 2 2	Conoval			Sub Total 4.3.2	
4.3.3	General Mobilization & Demobilization, Site Infrastructure,	1	Lot		
4.3.3.1	Temporary Works at site related to site activities.	1	200		
1332	Final Cleanup (Including Removal of Excess Materials	1	Lot		
4.3.3.2	and Temporary Works) Demobilization				
4.3.3.3	Supply and Installation of Water Supply System as per the	1	Lot		
	Employer's requirements  Other necessary works as per Employer's Requirement and	1	Lot		
4.3.3.4	Conditions of Contract, if any, not included above	1	LUI		
	,, ,			Sub Total 4.3.3	
4.3.4	Substation Buildings				
4.3.4.1	Substation Control Building	1	Lot		

	Schedule No. 4.3: Breakdown of Civil Works						
Itam ma	Description		Unit	Unit Rate in US\$	Amount in		
Item no.		1	2	3	(1)x(3)		
4.3.4.2	400kV GIS Building	1	Lot				
4.3.4.3	220kV GIS Building	1	Lot				
4.3.4.4	Other necessary works as per Employer's Requirement and	1	Lot				
4.3.4.4	Conditions of Contract, if any, not included above						
				Sub Total 4.3.4			
	Total Carried to SC-4)						
	Name of the Bidder:						
	Signature of Bidder:						

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations Price Schedule

Schedule 4.4: Summary of Breakdown for Day work

Schedule 4.4. Summary of Dicardown for Day work					
Description	Amount in US\$				
1. Sub-Total for Day work: Labor (4.4.1)					
2. Sub-Total for Day work: Materials (4.4.2)					
3. Sub-Total for Day work: Contractor's Equipment (4.4.3)					
Total (to be carried forward to Schedule 4.0)					
Name of the Bidder:					
Signature of Bidder:					

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations

Price Schedule

### Schedule of 4.4.1: Breakdown for Day work Rates: Labor

Item no.	Description	Qty.	Unit	Unit Rate in US\$	Amount in
4.4.1	Supervision and Labor				
4.4.1.1	Engineer	350	h		
4.4.1.2	Foreman	400	h		
4.4.1.3	Surveyor	150	h		
4.4.1.4	Technician	600	h		
4.4.1.5	Skilled labor	600	h		
4.4.1.6	Semiskilled labor	600	h		
4.4.1.7	Unskilled labor	600	h		
	Other necessary works as per Employer's				
	Requirement and Conditions of Contract, if		specif		
4.4.1.8	any, not included above (specify)		У		
		Fotal (C	Carried to SC-4.4)		
	Name	Bidder:			
	Signatu	idder:			

Note: The labor rate should include all cost needed to provide the Labor at required place including all related cost for **providing** the labour, ensuring that the labor is qualified for his/her job and can perform the required task professionally.

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations Price Schedule

Schedule of 4.4.2: Breakdown for Day work Rates: Materials

Item no.	Description	Qty.	Unit	Unit Rate in	Amount
				US\$	in US\$
4.4.2.1	Concrete Work				
4.4.2.1.1	Lean Concrete	50	m3		
4.4.2.1.2	Concrete to foundation	150	m3		
4.4.2.1.3	Concrete to superstructure	200	m3		
4.4.2.2	Steel Reinforcement				
4.4.2.2.1	Mild Steel reinforcement, including cutting, bending	10	t		
4.4.2.2.2	High tensile steel reinforcement, including cutting, bending	25	t		
4.4.2.3	Structural Steel				
4.4.2.3.1	Commercial sections, including cutting, welding, bolting	10	t		
4.4.2.4	Excavation Work				
4.4.2.4.1	Excavation in rock (type R), including shoring, backfill, haul	200	m3		
	and disposal				
4.4.2.4.2	Ditto, in soil (type MB and LB)	400	m3		
4.4.2.5	Other necessary works as per Employer's Requirement				
	and Conditions of Contract, if any, not included above				
	(specify)				
4.4.2.6	Price for Control Point on Wave Switching Device	1	No		
	(CPWSD) to be installed on 400kV Breaker supplied as per				
	Schedule-2				
4.4.2.7	Price for Pre-Insertion Resistor (PIR) to be installed on	1	No		
	400kV Breaker supplied as per schedule-2				
4.4.2.8	Price for Stub-Bus Differential Protection for 400kV	1	No		
	Future Bay				
4.4.2.9	Price for Stub-Bus Differential Protection for 220kV	1	No		
	Future Bay				
	Total	(carrie	l forwa	rd to SC-4.4)	
	Name of the I	Bidder:			
	Signature of I	Bidder:			
<b>3</b> .7 .4					

Note:

Note: Quoted Unit Price shall include all the cost required to perform task successfully such as loading, transportation, insurance, unloading, cutting (if required), placing as per intended required task, while insuring the quality of the material and health and safety, storing at proper storage place with security and carrying out works as per Employer's requirement and Conditions of Contract.

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations Price Schedule

Schedule No. 4.4.3: Breakdown of Day work Rates: Contractor's Equipment

Item no.	<b>Description</b> Nominal		Uni	Basic hourly	Amount in
	•	quantit	t	rental rate in	US\$
		y		US\$	
4.4.3	Contractors' Equipment				
4.4.3.1	Concrete Mixer, up to 5 m3/h	20	h		
4.4.3.2	Concrete Mixer, above to 5 m3/h	20	h		
4.4.3.3	Concrete Pump (Self-Propelled) up to 20 m3/h	40	h		
4.4.3.4	Concrete Pump (Self-Propelled) above to 20 m3/h	40	h		
4.4.3.5	Concrete batch plant, up to 20 m3/h	20	h		
4.4.3.6	Concrete batch plant, above 20 m3/h	20	h		
4.4.3.7	Transit mixer, up to 5 m3	40	h		
4.4.3.8	Transit mixer, above to 5 m3	40	h		
4.4.3.9	Bulldozer, with ripper, up to CAT D8 class	50	h		
4.4.3.10	Bulldozer, with ripper, above to CAT D8 class	50	h		
4.4.3.11	Track loader, up CAT 953 class	30	h		
4.4.3.12	Track loader, above CAT 953 class	50	h		
4.4.3.13	Wheel loader, up to CAT 930 class	50	h		
4.4.3.14	Wheel loader, above CAT 930 class	50	h		
4.4.3.15	Track excavator	100	h		
4.4.3.16	Air Compressor	100	h		
4.4.3.17	Mobile crane, up to 10 t	50	h		
4.4.3.18	Mobile crane, above 10 t, up to 20 t	50	h		
4.4.3.19	Mobile crane, above 20 t	50	h		
4.4.3.20	Lorry, up to 10 t	100	h		
4.4.3.21	Lorry, above 10 t	100	h		
4.4.3.22	Tipper, up to 10 t	100	h		
4.4.3.23	Tipper, above 10 t	100	h		
4.4.3.24	Pick-up	200	h		
4.4.3.25	Diesel generator, up to 100 kW	100	h		
4.4.3.26	Diesel generator, above 100 kW, up to 250 kW	100	h		
4.4.3.27	Diesel generator, above 250 kW	100	h		
4.4.3.28	Welding Set, Including Welding Rods	300	h		
		al (Carrie	l forv	vard to SC-4.4)	
	Name of th	e Bidder:			
	Signature o	of Bidder:			
Note:					

The Basic Hourly rates includes all cost that require to run and perform the task, such as Equipment rental with operator, maintenance of vehicle, running responsibility, health and safety protection, petrol, diesel, lubricants, driver, assistance etc. required for carrying the task with the equipment.

Schedule No. 4.5: Other Installation Services

Item no.	Description	Unit	Quantit	<b>Unit Rate in US\$</b>	Amount in US\$
4.5.1	Environmental, Social, Health and Safety Management Plan				
4.5.1.1	General Mitigation Measures				
4.5.1.1.1	Develop a detailed Environmental, Social, Health, and Safety	Lot	1		
	(ESHS) Management Plan for Contractor's employees.				
4.5.1.1.2	Develop, provide training and enforce a Worker Code of Conduct	Lot	1		
4.5.1.1.3	Conduct Employee Induction Training on H&S and	Lot	1		
	environmental/social/cultural sensitivity				
4.5.1.1.4	Implement Community Grievance Redress Plan	Lot	1		
4.5.1.1.5	Personal Protection equipment all complete (Safety Boots,	Lot	1		
	Reflection Jackets, Safety Helmet, Safety Goggles, Safety Mask,				
	Safety earplugs, Safety hand gloves etc.)				
	, , , , , ,			Sub Total 4.5.1.1	
4.5.1.2	Physical Environment Mitigation Measures				
4.5.1.2.1	Implement an Erosion and Sediment Control Plan	1	Lot		
4.5.1.2.2	Manage excavated soils	1	Lot		
4.5.1.2.3	Spray disturbed areas with water if substantive off-site fugitive	1	Lot		
	dust impacts occur				
4.5.1.2.4	Provide a pit toilet and bury all organic wastes at tower	1	Lot		
	construction sites				
4.5.1.2.5	Install septic systems/package and proper wastewater disposal	1	Lot		
	system for workers				
4.5.1.2.6	Provide hazardous material training to concerned staff	1	Lot		
4.5.1.2.7	Stockpile materials for use in controlling spills	1	Lot		
4.5.1.2.8	Provide secondary containment for any fuel or hazardous	1	Lot		
4.5.1.2.9	Collect and segregate all waste for reuse, recycle, or disposal	1	Lot		
	Dispose of solid waste at approved waste disposal facilities	1	Lot		
			Sub Total 4.5.1.2		
4.5.1.3	Socio-economic and Cultural Environment Mitigation				
	Measures				
4.5.1.3.1	Implement Workforce Management Plan	1	Lot		
4.5.1.3.2	Implement Worker Access Management Protocol	1	Lot		
4.5.1.3.3	Implement Traffic Management Plan and maintain the damaged	1	Lot		
	roads caused by contractors				
4.5.1.3.4	Develop and Implement Worker Grievance Redress Mechanism	1	Lot		
4.5.1.3.5	Conduct community awareness on EMF risks	1	Lot		
				<b>Sub Total 4.5.1.3</b>	
4.5.1.4	Gender, Social Inclusion and Counter-TIP Measures				
4.5.1.4.1	Develop and implement Anti-Sexual Harassment Policy, provide	Lot	1		
	orientation to the entire workers		_		
4.5.1.4.2	Conduct awareness raising and community meetings to encourage	Lot	1		
	women, socially excluded, historically marginalized, vulnerable		_		
	groups to apply for jobs				
4.5.1.4.3	Develop and Implement TIP Risk Management Plan	Lot	1		
4.5.1.4.4	Training to the Contractor's employees/staff on Gender and Social	Lot	1		
	Inclusion, prevention on sexual harassment, gender-based	200	-		
	violence, child labor and TIP				
4.5.1.4.5	Community TIP risk prevention sensitization and community	Lot	1		
7.3.1.7.3	consultation	Lot	1		
4.5.1.4.6	Community Grievance Redress Plan must have system of	Lot	1		
7.3.1.7.0	Anonymous reporting for TIP suspected cases	LUI	1		
<u> </u>	Anonymous reporting for the suspected cases	l .	l		

Schedule No. 4.5: Other Installation Services

Item no.	Description	Unit	Quantit	Unit Rate in US\$	Amount in US\$
	Sub Total 4.5.1.4				
4.5.2	Testing And Commissioning				
4.5.2.1	Site Testing and Commissioning of HV AIS Equipment	1	Lot		
4.5.2.2	Site Testing and Commissioning of Autotransformers	1	Lot		
4.5.2.3	Site Testing and Commissioning of 400kV GIS Equipment	1	Lot		
4.5.2.4	Site Testing and Commissioning of 220kV GIS Equipment	1	Lot		
4.5.2.5	Site Testing and Commissioning of Electrical Auxiliary Service	1	Lot		
	Equipment and Power MV and LV Cables				
4.5.2.6	Site Testing and Commissioning of Protection/Communication and	1	lot		
	Control (SCADA and SAS) equipment				
4.5.2.7	Site Testing and Commissioning of Mechanical Auxiliary Service	1	Lot		
	Equipment				
4.5.2.8	One Month Commercial Operation after Commissioning	1	Lot		
4.5.2.9	End to End Test for all points as specified, including Control,	1	Lot		
	Protection & Remote End Modification	_			
4.5.2.10	Closed loop test of equipment all complete	1	Lot		
4.5.2.11	PQ (Power Quality), Revenue Energy meter and all remaining	1	Lot		
	equipment of S/S	•	201		
4.5.2.12	Other necessary works as per Employer's Requirement and	1	Lot		
1.3.2.12	Conditions of Contract, if any, not included above (specify)	•	Lot		
	Conditions of Confident, if any, not included above (specify)	l		Sub Total 4.5.2	
4.5.3	Training and O&M Assistance			54b 10tal 4.5.2	
4.5.0	Training at Manufacturers Work				
4.5.3.1	Control & Protection, Substation Automation System and	1	Lot		
7.5.5.1	Communication System.(Refer PSR for more details)	1	Lot		
4.5.3.2	400 kV GIS Equipment and System (Circuit Breaker, Isolator, CT,	1	Lot		
7.3.3.2	PT & LA) and EHV GIS/AIS Substation Design (Refer PSR for	1	Lot		
	more details)				
4.5.3.3	220 kV GIS Equipment and System (Circuit Breaker, Isolator, CT,	1	Lot		
7.5.5.5	PT & LA) and EHV GIS/AIS Substation Design (Refer PSR for	1	Lot		
	more details)				
	Training at Site				
4.5.3.4	Control & Protection (Refer PSR for more details)	1	Lot		
4.5.3.5	Substation Automation System including the integration aspect of	1	Lot		
4.3.3.3	SCADA (Refer PSR for more details)	1	Lot		
4.5.3.6	For 400kV Indoor GIS and Outdoor Switchyard Equipment (CT,	1	Lot		
4.5.5.0	CVT, Isolator and Circuit Breaker) Operation and Maintenance.	1	Lot		
	(Refer PSR for more details)				
4.5.3.7	For 220kV Indoor GIS and Outdoor Switchyard Equipment (CT,	1	Lot		
4.3.3.7	CVT, Isolator and Circuit Breaker) Operation and	1	Lot		
	, 1				
4.5.3.8	Maintenance.(Refer PSR for more details)  Operation and maintenance of Transformers (Refer PSR for more	1	Lot		
4.5.5.8		1	Lot		
4.5.3.9	details) AC/DC auxiliaries and mechanical system (Refer PSR for more	1	Lat		
4.3.3.9		1	Lot		
45210	details)	1	T - 4		
4.5.3.10	Training at site for other systems (provide list)	I	Lot	Ch T-4-1 4 7 2	
		Tr-4 P	(C 1	Sub Total 4.5.3	
	N		Carried	forward to SC-4)	
	Name of the B				
	Signature of B	iaaer:			

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations **Price Schedule** 

Price Schedule No. 5: Grand Summary

Item No	Description	Total Price in US\$
5.1	Total Schedule No. 1. Design Services	
5.2	Total Schedule No. 2. Plant, and Mandatory Spare Parts Supplied from Abroad	
5.3	Total Schedule No. 3. Plant, and Mandatory Spare Parts Supplied from within	
	the Employer's Country	
5.4	Total Schedule No. 4. Installation and Other Services including all related Civil	
	Works (Excluding Summary of Breakdown of Day works) (includes SC-4.1, SC-	
	4.2, SC-4.3 and SC-4.5)	
5.5	TOTAL (to Bid Form - Resulting contract Price after correction if any)	
5.6	Output VAT (if applicable)	
5.7	Total including Output VAT (5.5+5.6)	
5.8	Total of Summary of Breakdown of Day works (to bid form) (from item No.4.6 of	
	SC-4)	
5.9	Grand Total Including Day work for Evaluation and Comparison Purpose	
	(5.5+5.8)	
	Name of Bidder:	
	Signature of Bidder:	
Mate		•

Note:
Quoted Unit Price shall include all the cost required to perform task successfully such as all resources required to carry out the Work, personnel, material, equipment, loading, transportation, insurance, unloading and storing at proper storage place and carrying out works as per Employer's requirement and Conditions of Contract.

The purpose of price schedules is to identify the Bid Price which will be used to determine progress payment and the rates can be used to determine the price of any variation to scope . The Bid Price if accepted and included in the Contract shall become Contract Price and the Contract price shall not be adjusted (except as stated under Conditions of Contract under Sub-Clause 13.8) in case any quantity varies. The Price quoted under Price Schedule is as per provision of Employer's Requirements and Conditions of Contract.

Procurement of Plant Design, Supply, Delivery, Installation, Testing and Commissioning of Lot 1: 400kV Ratmate Substation and works at Lapsiphedi and New Hetauda Substations

Price Schedule

Price Schedule No. 6: Recommended Spare Parts, Repair and Maintenance Tools (Breakdown of Rates)

Item No	Description	Qty.	CIP Price in US\$  Foreign Parts	EXW Price in US\$ Local Parts	Total Price (CIP)	Total Price (EXW)
		1	2	3	(1) x (2)	(1)x(3)
				XW) TOTAL		
			Name of Bidder:			
Notes			Signature of Bidder:			

Note:

The price of recommended spare parts quoted in Price Schedule No. 6 shall not be considered for evaluation. This is because such spare parts would normally be used after long time durations beyond the MCC Compact end date, and could not be financed from the Compact funds. Still the recommended spare parts may be financed directly by the government. Quoted Unit Price shall include all the cost required to perform task successfully such as loading, transportation, insurance, unloading and storing at proper storage place and carrying out works as per Employer's requirement and Conditions of Contract.

EXW-Works site in Nepal: All Plant and Mandatory Spare Parts Supplied within the country shall be quoted as EXW. The Contractor will also be responsible for other associate charge to bring all goods and equipment to site.

CIP-Works site in Nepal: All Plant and Mandatory Spare Parts Supplied from Abroad shall be quoted as CIP-Works site in Nepal basis. The Contractor will be responsible for custom clearance, insurance and other associate charge to bring all goods and equipment to site.

Quoted Unit Price shall include all the cost required to perform task successfully such as cost of goods, resources, loading, transportation, insurance, unloading and storing at proper storage place.

# Lot 2 Price Schedule

Breakdown of Rates and Prices Schedule No. 1. Design Services

Item No	Description Breakdown of Rates and Prices Schedul	Qty	Unit	Unit Rate	Total Price
	-			US\$	US\$
		1		2	(1) x (2)
1.1	Design Works (Electrical)				
	e Electromechanical and Electrical Design of New Substation as Spec			nployers Require	ments including but
1.1.1	Substation Design:	1	Lot		
	(SLD, Layout, Section elevation,				
	P&C, SCADA, 400/220kV Switchgear, Auto Transformers along with				
	connections, Auxiliary System, Control, LV & Fiber Optic Cables along				
	with connections for the same, etc.)				
1.1.2	Thermal Calculations	1	Lot		
	for normal and emergency continuous current ratings of the switchgear and each main current path component				
1.1.3	Insulation Coordination Study	1	Lot		
1.1.4	Lightning Surge Overvoltage Study	1	Lot		
1.1.5	Transient Recovery Voltage (TRV) Study for GIS	1	Lot		
1.1.6	Grounding Analysis for entire station	1	Lot		
1.1.8	All the requested settings for Protection Coordination, Relay Test Plan,	1	Lot		
1.1.0	Configuration and Programming on Intelligent Electronic Device (IEDs	1	Lot		
	such as Relays, RTUs, Automation system, etc. to ensure normal				
	function of integrated system at substation and with other facilities in				
	the entire power system as referred to LOT 2 works.				
1.1.9	GIS System Earthing and Bonding Study	1	Lot		
.1.10	Outdoor Switchyard Lighting Study	1	Lot		
.1.11	Power Cable Ampacity Study	1	Lot		
.1.12	Rigid Bus Study	1	Lot		
1.1.13	Power Cable Pulling Tension Calculation	1	Lot		
1.1.14	Any other design work not specifically mentioned above but deemed	1	Lot		
	necessary or as required by Engineer/Employer for satisfactory				
	completion of design work.				
				Sub Total 1.1	
1.2	Design Works (Civil)				
	e Civil Design of New Substation as Specified in Scope and Employe			iding but not limi	ted to:
1.2.1	Geotechnical investigation data and drawings including on-site support	1	Lot		
1.2.2	during excavation and compaction.		τ.,		
1.2.2	Hydrological, Environmental and Social Assessment of New Butwal Substation area as described in the Technical Specification	1	Lot		
1.2.3	Surveying and benchmarking design and drawings including on-site	1	Lot		
1.2.3	support during site preparation.	1	Lot		
1.2.4	Substation Design in Civil, Structural, Mechanical and Architectural,	1	Lot		
1.2.7	such as foundation works, hot dip galvanised steel supporting structures		Lot		
	for all outdoor electrical equipment structures, other civil works like				
	boundary wall etc., substation buildings, roads, cable trenches, water				
	drainage system, oil containment chamber and sump pit, fire walls,				
	earthing works, etc. of new substation complete in all respect.				
1.2.5	Design of rail tracks for movement of power transformers on the	1	Lot		
1.4.3	reinforced concrete foundations.	1	LUI		
1.2.6	Any Architectural-Related Calculations and Analysis	1	Lot		
1.2.7	Any Mechanical-Related Calculations and Analysis  Any Mechanical-Related Calculations and Analysis	1	Lot		
1.2.8	Any other design work not specifically mentioned above but deemed	1	Lot		
	necessary or as required by employer for satisfactory completion of	•			
	design work.				
	· -			Sub Total 1.2	
	Total	(To Schedu	ıle No. 5. G	Grand Summary)	
		of Bidder			
	Signature	of Bidder	:		

Breakdown of Rates and Prices Schedule No. 2. Plant, Goods and Equipment(Including Mandatory Spare Parts) Supplied from Abroad Unit Rate (b) Item No. Description Code Oty Unit Total Price (c) US\$ US\$ DDP plus all related cost as defined in foot note (1) x (3)3 2.1 Design Works (Electrical) Auto-Transformer, 315 MVA, 400/220/33 kV, Three Phase, OLTC, RTCC Nos facility, surge protection arrangement (AIS) on both sides including tertiary Bushing CT, all fittings & accessories as specified/ required for completion of the scope of works as per technical specification 2.1.2 Capacitive Voltage Transformer (CVT) 400kV, Single Phase Nos 6 2 Windings, Secondary Voltage 110V, Accuracy 0.2, Min Burden 50VA, Application: Metering 2.1.3 Capacitive Voltage Transformer (CVT) 400kV, Single Phase 6 Nos 2 Windings, Secondary Voltage 110V, Accuracy 0.2, Min Burden 50VA, Application: Metering and PLC Coupling 2.1.4 Current Transformer (CT), 400kV, Single Phase, Live tank Type, 12 Nos 3 Core, 2000-1000-500/1A, Class 0.2, Rated Output 15VA 2.1.5 Current Transformer (CT), 220kV Single Phase, Tank Type, 9 Nos Core, 1600A, 120% Extended Current Rating 2.1.6 Current Transformer (CT), 72.5kV, Single Phase 6 Nos Windings 2.1.7 400kV Surge Arrester (SA), Zinc Oxide 12 Nos 366 kV Rated Voltage, 20kA, 12kJ/kV 2.1.8 220kV Surge Arrester (SA), Zinc Oxide 9 Nos 216kV Rated Voltage, 10kA, 12kJ/kV Substation Service Transformer, 630 kVA, 33/0.4kV 2.1.9 2 Nos 2.1.10 30kV,10kA Lightning arrester for 33kV line bays 6 Nos 30kV,10kA Lightning arrester for 33/0.4kV station service transformers 2.1.11 6 Nos 2.1.12 Tandem Isolator without Earthing Switch, 220kV,1600 A, 50kA, Three 9 Nos Phase (Set of 3) 2.1.13 Isolator with One Earthing Switch, 220kV,1600 A, 50kA, Three Phase (Set of 3) 2.1.14 Isolator with Two Earthing Switch, 220kV,1600 A, 50kA, Three Phase (Set 3 Nos 2.1.15 72.5kV Double Break Isolator, Single Phase 1 Lot 2.1.16 220kV Circuit Breaker, Three Phase, 1600A 3 Nos 2.1.17 72.5kV Circuit Breaker, Three Phase, 50Hz. 2 Nos 2.1.18 72.5kV Current Transformer 6 Nos. 400kV Bus Support Post Insulator 2.1.19 1 Lot 2.1.20 220kV Bus Support Post Insulator 1 Lot 2.1.21 72.5kV Bus Support Post Insulator 1 Lot 2 1 22 Suspension/Tension Insulator Strings, Including Hardware 1 Lot 2.1.23 Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify) Sub Total 2.1 2.2 **Hot-Dip Galvanized Steel** 2.2.1 Gantry Column for 400 kV Incoming Line 6 Nos Gantry Column for 220 kV Incoming Line 2.2.2 Nos 5 223 Gantry Girder for 400 kV Incoming Line 4 Nos Nos Gantry Girder for 220 kV Incoming Line Support Structure for 400 kV Current Transformer 2.2.5 12 Nos 2.2.6 Support Structure for 400 kV Capacitor Voltage Transformer 12 Nos Nos Support Structure for 400 kV Surge Arrester 12 2.2.8 Support Structure for 400 kV Bus Support 1 Lot 229 Support Structure for Tandem Isolator without Earthing Switch, 9 Nos 220kV,1600 A, 50kA, Three Phase (Set of 3) 2.2.10 Support Structure for Isolator with One Earthing Switch, 220kV,1600 A, 3 Nos 50kA, Three Phase (Set of 3) 2.2.11 Support Structure for Isolator with Two Earthing Switch, 220kV,1600 A, 3 Nos 50kA, Three Phase (Set of 3) 2.2.12 Support Structure for 72.5 kV Disconnecting Switch 1 Lot Support Structure for 220 kV Current Transformer 2.2.13 9 Nos 2.2.14 Support Structure for 220 kV Surge Arrester 9 Nos 2.2.15 Support Structure for 220 kV Bus Support 1 Lot 2.2.16 Support Structure for 72.5 kV Current Transformer 6 Nos 2.2.17 Support Structure for 72.5 kV Bus Support or Pot Head Lot Support Structure for 72.5 kV Single Switch Stand 2.2.18 1 Lot 2 2 19 Support Structure for 30kV Lightning Arrestor 15 Nos 2.2.20 Structures for Lightning Mast and other Lighting structures Lot 2.2.21 Other necessary works as per Employer's Requirement and Conditions of Lot 1 Contract, if any, not included above (specify) Sub Total 2.2

Breakdown of Rates and Prices Schedule No. 2. Plant, Goods and Equipment(Including Mandatory Spare Parts) Supplied from Abroad Item No. Description Code Qty Unit Unit Rate (b) Total Price (c) US\$ US\$ DDP plus all related cost as defined in foot note (1) x (3)3 2.3 **Bus Bar and Overhead Connections** 5" AL. Tubular Bus Bar Lot 141.30mm Outer Diameter, 9.53mm Thickness 2.3.2 4" AL. Tubular Bus Bar 1 Lot 114.2mm Outer Diameter, 8.51mm Thickness 2.3.3 Bus bar Connectors and Hardware Lot (Tube to NEMA Pads, Bus Supports, etc..) 2.3.4 Bare Cond. ACSR Lot 54 Strand 3.53mm AL 7 Strands 3.53mm Steel 235 Other necessary works as per Employer's Requirement and Conditions of 1 Lot Contract, if any, not included above (specify) Sub Total 2.3 LV Control and Power Cable 2.4 2.4.1 LV Control Cables 1 Lot 2.4.2 LV Power Cables Lot 2.4.3 Cable Installation Accessories 1 Lot (Cable Gland, Labels Terminal Strips, etc..) 2.4.4 XLPE Power Cable, 33kV (from LV side of the Auto transformer to 33kV Lot line bay arrangement) 2.4.5 33 kV Cable Pothead 1 Lot Power Cable for Filter Plant (Transformer) 3.5CX240 sq.mm. (Armoured, Lot PVC Insulated) with suitable termination arrangement all complete 247 Cable carriers (trays, conduits, ducts) for routing the HV & LV power, 1 Lot control, instrumentation and communication interface cables 2.4.8 Other necessary works as per Employer's Requirement and Conditions of Lot Contract, if any, not included above (specify) Sub Total 2.4 AC AND DC STATION SUPPLY 2.5.1 400 V AC Main Switch Board 400V Switchgear with Automation Controls, 1000A CB and 2 Current Transformers 2.5.1.2 400V Switchgear with Automation Controls, Nos 630A CB and 2 Current Transformers 2.5.1.3 Distribution panel Bus-A, 1 Nos 400V, 3 Phase, 1000A, 20kA for 1Sec. (5) 400A Breakers, (1) Potential Transformer 2.5.1.4 Distribution panel Bus-B, 1 Nos 400V, 3 Phase, 1000A, 20kA for 1Sec. (6) 400A Breakers, (1) Potential Transformer 2.5.2 400 V AC Main Lighting Board 2.5.2.1 100 kVA Lighting Transformer 2 Nos 2522 Distribution panel, 400V, 3 Phase, 4 Wire, 20kA, 1Sec. Nos Bus-A (4) 63A, (1) 400A Breakers, Bus-B (4) 63A, (1) 400A Breakers, Bus-C (5) 63A TIE A-B 400A breaker, TIE B-C 400A Breaker 2.5.3 400 V AC Emergency Lighting Distribution Board 2531 100 kVA Lighting Transformer 1 Nos 2.5.3.2 Distribution panel Bus-A 1 Nos 400V, 3 Phase, 4 Wire, 20kA, 1Sec. (5) 63A, (1) 400A 4 Pole Breakers, TIE A-B 100A breaker 2.5.3.3 Distribution panel Bus-B Nos 400V, 3 Phase, 4 Wire, 20kA, 1Sec. (3) 63A, (1) 400A 4 Pole Breakers, 2.5.4 400 V AC Distribution Board 2.5.4.1 400V Switchgear with Automation Controls, Nos 1000A CB and 2 Current Transformers 2.5.4.2 400/110V, 50VA, Potential Transformer Nos 2543 400/1A Current Transformer, Class 5P20 Nos 2.5.4.4 400V Switchgear with Automation Controls, 1 Nos 630A with 2 Current Transformers 2.5.4.5 400v Distribution panel Bus-A 1 Nos (1) 400A, (4) 100A, (8) 63A, (2) 32A 4 Pole Breakers, (14) 63A, (8) 32A 2 Pole Breakers TIE A-B 400A Breaker

Breakdown of Rates and Prices Schedule No. 2. Plant, Goods and Equipment(Including Mandatory Spare Parts) Supplied from Abroad Unit Rate (b) Item No. Description Code Qty Unit Total Price (c) US\$ US\$ DDP plus all related cost as defined in foot note (1) x (3)2 3 2546 400v Distribution panel Bus-B Nos (1) 400A, (3) 100A, (8) 63A 4 Pole Breakers (14) 63A, (5) 32A 4 Pole Breakers 2.5.5 400 V AC AMF Panel 2.5.5.1 400/1A Current Transformer, Class 1 3 Nos 2.5.5.2 400/1A Current Transformer, Class 5P20 Nos 1 2.5.6 DC Chargers and Batteries 2.5.6.1 220V Battery Charger (Float/Boost) 3 Nos 2.5.6.2 48V Battery charger (Float/Boast) 3 Nos 2.5.6.3 250A Throw over Switch, Interlock 6 Nos 2.5.6.4 Battery, 220Vdc, 108 Minimum Cells 2 Nos 2.5.6.5 Battery, 48Vdc, 24 Minimum Cells 2 Nos 2.5.7 DC Distribution Boards 2.5.7.1 Distribution panel, 220V, 400A, 4kA for 1 Sec. 50 positions 2 Nos 2.5.7.2 Distribution panel, 48V, 400A, 4kA for 1 Sec. 50 positions Nos 2573 DC Fuse Box, 220Vdc 1 Lot 2.5.7.4 DC Fuse Box, 48Vdc 1 Lot 2.5.8 Other Equipment Diesel Generator Set, 250kVA (Including Fuel Tank) Nos 2.5.8.1 1 2.5.9 Other necessary works as per Employer's Requirement and Conditions of 1 Lot Contract, if any, not included above (specify) Sub Total 2.5 2.6 400 kV Gas Insulated Switchgear (1-1/2 breaker arrangement) 2.6.1 Line/feeder Bay SF6 Circuit Breaker, 400kV, 4000A, 50kA, Three Pole 2.6.1.1 10 Nos 2612 Current Transformer Modules, three cores, 400kV, single-phase, 20 Nos 2.6.1.3 Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, 20 Nos Single-phase, Three-phase set 2.6.1.4 Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA, 20 Nos Single-phase, Three-phase set 2615 Line/Feeder High Speed Earthing Switches, with removable earthing link 10 Nos 400kV, 50kA, single-phase, three-phase set 2.6.1.6 Voltage Transformers, 400kV, dual secondary, with earthing link, Single-10 Nos phase, Three-phase set 2.6.1.7 Line/Feeder Disconnect Switches, 400kV, 4000A, 50kA, 10 Nos Single-phase, Three-phase set Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, 2618 10 Nos Single-phase, Three-phase set Bay Local Control Cabinet including (device controls, instrumentation, 2.6.1.9 10 Nos interlocking, annunciation, gas density monitoring, circuit breaker Partial Discharge Monitoring System including monitoring sensors and 2.6.1.10 10 Nos diagnostic equipment (per bay) 26111 LV control and power cable connections from Local Control Cabinet to all 1 Lot GIS equipment/devices 2.6.1.12 All metallic structures and supports required for GIS complete with 1 Lot 2.6.1.13 All walkways, platforms, stairs, ladders and accessories required for access Lot o all GIS devices 2.6.1.14 Gas Insulated bus (GIB) and required supports for GIB run whole for 10 Bays Line/Feeder Bay Lot all complete 2.6.2 Transformer Bay 2.6.2.1 SF6 Circuit Breakers, 400kV, 4000A, 50kA, three-pole, with Control Point 4 Nos on Wave Switching Device Current Transformer Modules, Three cores, 400kV, 2622 8 Nos Single-phase, Three-phase set 2.6.2.3 Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single 8 Nos phase, three-phase set 2.6.2.4 Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA, 8 Nos Single-phase, Three-phase set 2.6.2.5 Line/Feeder High Speed Earthing Switches, with removable earthing link 4 Nos 400kV, 50kA, Single-phase, Three-phase set 2.6.2.6 Voltage Transformers, 400kV, dual secondary, with earthing link, single-4 Nos phase, three-phase set 2.6.2.7 Transformer Disconnect Switches, 400kV, 4000A, 50kA, 4 Nos Single-phase, Three-phase set 2.6.2.8 Transformer Maintenance Earthing Switches, 400kV, 50kA, single-phase, 4 Nos

Breakdown of Rates and Prices Schedule No. 2. Plant, Goods and Equipment(Including Mandatory Spare Parts) Supplied from Abroad Code Qty Unit Rate (b) Item No. Description Unit Total Price (c) US\$ US\$ DDP plus all related cost as defined in foot note (1) x (3)3 2629 Bay Local Control Cabinet including (device controls, instrumentation, Nos interlocking, annunciation, gas density monitoring, circuit breaker monitoring) 2.6.2.10 Partial Discharge Monitoring System including monitoring sensors and 4 Nos diagnostic equipment (per bay) LV control and power cable connections from Local Control Cabinet to all Lot GIS equipment/devices 2.6.2.12 All metallic structures and supports required for GIS complete with ccessories All walkways, platforms, stairs, ladders and accessories required for access 2.6.2.13 1 Lot to all GIS devices 2.6.2.14 Gas Insulated bus (GIB) and required supports for GIB run whole for 4 Bays Transformer Bay Lot all complete Diameter Middle Breaker Bay 2.6.3 SF6 Circuit breaker 2.6.3.1 Proposed SF6 Diameter middle Circuit Breakers associated with Line Nos Feeder, 400kV, 4000A, 50kA, three-pole Proposed SF6 Diameter middle Circuit Breakers associated with Auto Nos Transformer and Line Feeder, 400kV, 4000A, 50kA, three-pole, with Control Point on Wave Switching Device Current Transformer Modules, Three cores, 400kV, Nos Single-phase, Three-phase set 2633 Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single 14 Nos phase, three-phase set 2.6.3.4 Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA, 14 Nos Single-phase, Three-phase set 2.6.3.5 Bay Local Control Cabinet including (device controls, instrumentation, Nos interlocking, annunciation, gas density monitoring, circuit breaker monitoring) 2.6.3.6 Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay) 2637 LV control and power cable connections from Local Control Cabinet to all 1 Lot GIS equipment/devices All metallic structures and supports required for GIS complete with 2.6.3.8 1 Lot accessories 2.6.3.9 All walkways, platforms, stairs, ladders and accessories required for access 1 Lot to all GIS devices Gas Insulated BUSBAR 264 2.6.4.1 400kV, 3 single phase (isolated), SF6 gas insulated, metal enclosed 4000A Diamete ous bars each enclosed in three individual bus enclosures Voltage Transformers, 400kV, dual secondary, with earthing link, single-2.6.4.2 2 Nos hase, three-phase set 2.6.4.3 High Speed Earthing Switches, with removable earthing link 400kV, 50kA, Nos Single-phase, Three-phase set 2644 Maintenance Earthing Switches, 400kV, 50kA, single-phase, three-phase se 2 Nos 2.6.4.5 Bus Bar Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase 2 Nos three-phase set 2.6.5 Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify) Sub Total 2.6 Complete with control & protection up to GIB sealing end for all Feeder and Transformer Bays. 2.7.1 Complete set of Control and Protection panels for 400 kV station as specified in Scope and Employers Requirements including but 2711 Circuit Breaker Relay Panel (Note: BCU should be included in the Relay 21 Nos 2.7.1.2 Line Protection Panel (Note: line protection should include tele protection 8 Nos erminals) 2.7.1.3 Transformer Protection Panel 6 Nos 2.7.1.4 400kV (Double Bus Bar Protection) Set 2715 Miscellaneous Relay and Control Equipment, not included above 1 Lot 2.7.2 Complete set of Control and Protection panels for 220 kV station as specified in Scope and Employers Requirements including but 2.7.2.1 Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Nos Panel) 2.7.2.2 Transformer Protection Panel 6 Nos Miscellaneous Relay and Control Equipment, not included above Lot 2.7.3 Complete set of Control and Protection panels for 33 kV station as specified in Scope and Employers Requirements including but 2.7.3.1 Circuit Breaker Relay Panel (Note: BCU should be included in the Relay 2 Nos

Breakdown of Rates and Prices Schedule No. 2. Plant, Goods and Equipment(Including Mandatory Spare Parts) Supplied from Abroad Unit Rate (b) Item No. Description Code Qty Unit Total Price (c) US\$ US\$ DDP plus all related cost as defined in foot note (1) x (3)2 3 2732 Transformer Protection Panel Nos 2.7.3.3 Miscellaneous Relay and Control Equipment, not included above Lot 2.7.4 Substation Automation & Metering SAS Operator Station for control of 400/220/33 kV 2.7.4.1 1 Set 2.7.4.2 Substation Automation System (SAS) for 400 kV System per diameter Set 2.7.4.3 Integration/connection of proposed 3 nos of 220 kV ICT bays with existing Lot 220kV SAS system. 2.7.4.4 Substation Automation System (SAS) for 33kV System per feeder 2 Set 2.7.4.5 Substation Automation System (SAS) for Auxiliary System 1 Set 2,7,4,6 Integration of all 400kV Bays under present scope with the SCADA of 1 Lot SIEMENS (SINAUT Spectrum) at Load Dispatch Centre, Kathmandu including supply of Hardware, Software, accessories etc. complete as per Technical Specification. 2.7.4.7 Telecommunication system for New Butwal 1 Lot 2.7.4.8 Fibre Optic SDH System Lot 2749 Phone System 1 Lot 2.7.4.10 Line traps (4 required), complete with hardware and supporting material, and 1 Lot the power line carrier equipment, complete with necessary coupling equipment and cables for 2 sets of PLCC system complete. 2.7.4.11 400 kV Metering 1 Lot .7.4.12 220kV Metering Lot 2.7.4.13 Miscellaneous Relay and Control Equipment, not included above 1 Lot Sub Total 2.7 2.8 Grounding System Stranded Bare Copper 240 Sq. mm\*\* Grid 2.8.1 Lot (Including Fusion and Mechanical Connectors) 2.8.2 Grounding Rods Lot 2.8.3 Embedded Grounding System - 400kV GIS 1 Lot (Including Connections to GIS metallic Structures, Supports and Walkways/Platforms) Embedded Grounding System - Control Room 2.8.4 1 Lot 2.85 Other necessary works as per Employer's Requirement and Conditions of 1 Lot Contract, if any, not included above (specify) Sub Total 2.8 2.9 **Lightning Protection System** 2.9.1 Overhead Galvanized Steel Wire, Including Hardware Lot 2.9.2 Lightening Mast for equipment Protection Lot 293 Other necessary works as per Employer's Requirement and Conditions of Lot Contract, if any, not included above (specify) Sub Total 2.9 2.10 Firefighting System 2.10.1 Fire protection/detection for 3 (three) auto transformers Lot 2.10.2 Fire protection/detection for 400kV GIS Building Lot Fire protection/detection for Control House 2.10.3 1 Lot 2.10.4 Fire protection/detection system for pump house building Fire protection/detection system for generator diesel tank 2.10.5 Lot 2.10.6 Lot 2 10 7 Lot 2.10.8 Other necessary works as per Employer's Requirement and Conditions of Lot Contract, if any, not included above (specify) Sub Total 2.10 **HVAC And Ventilation Systems** 2.11 2.11.1 400kV GIS Building HVAC and Ventilation Systems Lot 2.11.2 Control House HVAC and Ventilation Systems 1 Lot 2.12 Accessories and Ancillary Material 2 12 1 Junction and marshalling boxes, outdoor Junction and marshalling boxes, indoor Lot Outdoor lighting, including lighting fixtures Lot 2.12.4 Indoor lighting, including lighting fixtures Lot 2.12.5 Control Cabinet for outdoor lighting 1 Lot Rail tracks for movement of power transformers on the reinforced concrete foundations all complete. 2.12.7 Electric Overhead Travelling Crane for installation and removal of GIS 1 Lot Equipment 2.12.8 Visual Monitoring System Lot 2.12.9 Other necessary works as per Employer's Requirement and Conditions of Lot Contract, if any, not included above (specify)

Breakdown of Rates and Prices Schedule No. 2. Plant, Goods and Equipment(Including Mandatory Spare Parts) Supplied from Abroad Unit Rate (b) Item No. Description Code Qty Unit Total Price (c) US\$ US\$ DDP plus all related cost as defined in foot note (1) x (3)Sub Total 2.12 Mandatory Maintenance, Repair tools and Testing Instruments 2.13.1 GIS Equipment 2.13.1.1 400kV GIS SF6 leakage detector, analyzer and processing unit all complete 1 Lot 2.13.1.2 400kV GIS Wrenches and tools Lot 2.13.1.3 400kV GIS Pressure gauge 1 Nos 2.13.1.4 400kV GIS Gas sampling and moisture meter Nos 2.13.1.5 400kV GIS Micro-Ohmmeter Nos 1 2.13.1.6 400kV GIS Circuit-breaker, timing tester 1 Nos 2.13.1.7 400kV GIS Laptop computer with Specialized software 1 Nos for GIS setting and monitoring 2.13.1.8 Complete set of SF6 gas service cart mounted on a trailer for mobile Lot application. SF6 gas refilling cart equipped with 1 SF6 gas cylinder and the

1

Lot

Nos

necessary instruments and adapters for easy and quick gas refilling in case of

2.13.1.9 HV Test Bushing for GIS

2.13.1.10 Online Partial Discharge Monitor System

Breakdown of Rates and Prices Schedule No. 2. Plant, Goods and Equipment(Including Mandatory Spare Parts) Supplied from Abroad Unit Rate (b) Item No. Description Code Qty Unit Total Price (c) US\$ US\$ DDP plus all related cost as defined in foot note 2 (1) x (3)3 2.13.2 Auto Transformer Oil-treatment unit 6000lph along with suitable size and quantity of Nos connection arrangement (MCCB (240-300 Amp),terminal lugs etc.) all complete (autotransformer) 2.13.2.2 Oil dielectric tester Nos 2.13.2.3 Dielectric tester based on  $\tan \delta$  and dielectric losses , 10 kVNos 2 13 2 4 Megger, electronic, 5 kV 1 Nos Wrenches and tools Lot 2.13.3 Complete set of Control and Protection panels for Substation 2.13.3.1 Relay Test Kit 1 Lot 2.13.3.2 Test Equipment & tools for SAS SYSTEM for measuring, configuration & 1 Lot diagnostics. 2.13.3.3 Coupling Device without base plate (For PLCC) Sets Co-axial connector ( For PLCC) 10 Nos 2.13.3.4 2.13.3.5 Co-axial cable (For PLCC) 500 M 2.13.3.6 PLCC tool kit 1 Set 2.13.3.7 Line Trap LA 1 No Sub Total 2.13 2.14 **Mandatory Spare Parts** 2.14.1 **HV** Equipment 2.14.1.1 Unit of 400kV surge arrester, complete with grading ring, Lot terminals and surge counter 2 14 1 2 Capacitive voltage transformer, 400kV 1 Nos Current transformer, 400kV 2.14.1.3 Nos Current transformer, 220kV 2.14.1.4 1 Nos 2 14 1 5 Current transformer, 72.5kV 1 Nos 2.14.2 Auto Transformer Complete set of gaskets with grease, for cover, manholes, 2.14.2.1 1 Lot hand holes, and pipping fittings 2.14.2.2 Lot of LV control and protective components, minimum one unit of each type of components used 2.14.2.3 Pressure relief device, complete with accessories 1 Lot 2.14.2.4 Bushings, one complete unit of each type used, with accessories Lot 2.14.2.5 1 Nos Current transformer, one unit of each type Oil-circulating pump with motor, complete with accessories 2.14.2.6 1 Lot Cooling fan, complete with motor 1 Lot 2.14.2.8 Buchholz relay, complete 1 Nos One instrument of each type used (temperature, oil level, pressure vent, etc. 2 14 2 9 1 Lot 2.14.2.10 One valve of each type used 1 Lot Insulating oil, 5% of the volume used 2.14.2.11 1 Lot 2.14.2.12 Silica gel, quantity for one load Lot 2.14.2.13 Tap changer diverter switch, spare contacts and transition resistance Nos 2.14.2.14 Tap changer selector switch spare contacts Lot 2.14.2.15 Rolls of Kraft insulating paper Nos 1 2.14.2.16 LA with accessories for HV,IV and LV side 1 Lot Additional spare parts as per Chapter 3: Auto Transformer Specification of Lot Part 2: Employer's Requirements, Section V – B1 (Technical 2.14.3 630kVA Transformer 2.14.3.1 All Bushing with metal parts (each voltage rating) for 630 KVA 1 Lot Transformer Oil Temperature Indicator with sensing device Lot 2.14.3.3 Tap Changer Contacts 1 Lot 2.14.3.4 Buchholz Relay 1 Nos Explosion vent diaphragm Nos 2.14.3.6 Set of valve (each type) 1 Lot 2.14.3.7 -Phase 33 kV Horn Gap Fuse 1 Lot 2.14.3.8 LA with accessories for both sides Lot Other necessary works as per Employer's Requirement and Conditions of 2.14.4 1 Lot Contract, if any, not included above (specify) Sub Total 2.14 Spare Parts for AC and DC Station Supply 2.15 Spare for LV Switchgear 2.15.1 LV circuit breaker, complete, with CT's and protection devices Nos Outgoing thermomagnetic breakers - one unit of each type used 2.15.1.2 2 Nos 2 15 1 3 Metering - one instrument of each type used 1 Nos 2.15.1.4 Protection (other than included in LV breaker) Nos One unit of each type used

Breakdown of Rates and Prices Schedule No. 2. Plant, Goods and Equipment(Including Mandatory Spare Parts) Supplied from Abroad Unit Rate (b) Item No. Description Code Qty Unit Total Price (c) US\$ US\$ DDP plus all related cost as defined in foot note (1) x (3)3 2 15 1 5 Automatic Transfer Switch Nos One complete controller including sensors 2.15.1.6 One or 5% of loose material Nos Auxiliary relays, contactors, fuses, terminals, etc. 2.15.2 Spare for DC Distribution Panels 2.15.2.1 Thermomagnetic breakers Nos one unit of each type used 2.15.2.2 Metering - one metering instrument of each type used Nos 2.15.2.3 Protection (other than included in LV breaker) Nos 1 One unit of each type used 2.15.2.4 One or 5% of loose material 1 Nos Auxiliary relays, contactors, fuses, terminals, etc. 2.15.3 Spare for Diesel Generator Set Replaceable elements for air filter 1 Nos 2.15.3.1 Replaceable elements for oil filter Nos 2.15.3.3 Replaceable elements for fuel filter 1 Nos 2.15.3.4 Complete set of injectors 1 Nos Fuel injector pump 2.15.3.5 Nos 2.15.3.6 Oil pump 1 Nos 2.15.3.7 1 Nos Intake valves 2.15.3.8 Seats for intake valves Nos 2.15.3.9 Exhaust valves Nos 1 2.15.3.10 Set for exhaust valves 1 Nos 2.15.3.11 Disconnect switch, with grounding blades, 245 kV, 3 Ø 1 Nos 2.15.3.12 Nos Set of pistons 1 2.15.3.13 Set of complete bearings of the engine 1 Nos 2.15.3.14 Set of all gaskets needed for the engine Nos 2.15.3.15 Set of thermostats Nos 2.15.3.16 Set of bearings for the alternator Nos Set of control cards, at least one unit of each type used 2.15.3.17 1 Nos 2.15.3.18 Diodes and thyristors of each type used 3 Nos 2.15.3.19 Lamp, one unit of each type used 10 Nos 2.15.3.20 Auxiliary relay, one unit of each type used 1 Nos Nos 2.15.3.21 Multifunction metering instrument 1 2.15.3.22 Voltage and speed regulator component and actuator Nos 1 2.15.3.23 Controller components 1 Nos 2.15.3.24 Instrument, detectors Nos 1 2.15.4 Spare for Batteries 2.15.4.1 One unit of battery used in 220 V DC system 1 Nos 2.15.4.2 Loose parts for 220 V DC - connection elements, cables, links, etc. 1 Nos One unit of battery used in 48 Vdc system Nos 2.15.4.4 Loose parts for 48 V DC - connection elements, cables, links, etc 1 Nos 2.15.5 Spare for Battery Chargers Nos 2.15.5.1 Complete bridge of thyristors assembled on a cooling base 2.15.5.2 Controller, complete including each type of card used 1 Nos 2.15.5.3 Loose elements - auxiliary relays, breakers, metering instruments, control 1 Nos Other necessary works as per Employer's Requirement and Conditions of 2.15.6 1 Lot Contract, if any, not included above (specify) Sub Total 2.15 Mandatory spare parts - Miscellaneous material 2.16 Nos 2 16 1 Junction and marshalling boxed, outdoor, one of each type used 1 2.16.2 Junction and marshalling boxed, indoor, one of each type used Nos 2.16.3 Outdoor lighting fixture, one unit of each type used Nos Post-type insulator, one unit of each type used Nos 2.16.4 1 Suspension insulator, 5% of the total used Nos 2.16.5Bus bar (rigid and strain) hardware, including, connectors, terminals, 2.16.6 1 Nos separator, corona rings, 5% of each type used, minimum one unit 2.16.7 Grounding conductors, 5% of the installed conductors (stranded copper 1 Nos conductor, rectangular-shape copper bar and grounding rod) 2.16.8 Fusion connection material, including molds, welding powder and Nos installation tools, quantity required to make 5% of the total executed 2.16.9 Mechanical connectors for grounding, 5% of the total executed connections 1 Nos 2 16 10 Other necessary works as per Employer's Requirement and Conditions of Lot 1 Contract, if any, not included above (specify)

Breakdown of Rates and Prices Schedule No. 2. Plant, Goods and Equipment(Including Mandatory Spare Parts) Supplied from Abroad Unit Rate (b) Item No. Description Code Oty Unit Total Price (c) US\$ US\$ DDP plus all related cost as defined in foot note (1) x (3)Sub Total 2.16 Mandatory spare parts for 400kV GIS 2.17.1 Spare Gas 2.17.1.1 SF6 bottles required to fill the two largest volume compartments 1 Lot 2.17.2 Circuit Breakers, 4000 A, 50kA 2.17.2.1 Circuit breaker, complete pole assembly Lot 2 17 2 2 Complete sets of main contacts 1 Lot 2.17.2.3 Complete sets of arcing contacts 2 Lot Operating mechanism, complete 2.17.2.4 1 Lot 2.17.2.5 Closing coils 4 Lot 2.17.2.6 Tripping coils 4 Lot Disconnect-Switches, 4000 A 2.17.3 2.17.3.1 Nos Disconnect-Switch, complete pole 1 2.17.3.2 Complete set of contacts 2 Nos 2.17.3.3 Operating mechanism, complete Nos 2.17.3.4 Operating mechanism motor 2 Nos 2.17.4 **Maintenance Earthing Switches** 2.17.4.1 Earthing-Switch, complete pole Nos 2 2.17.4.2 Complete set of contacts Nos 2.17.4.3 Operating mechanism, complete 1 Nos 2.17.4.4 Operating mechanism motor Nos 2.17.5 High-speed earthing Switches 2.17.5.1 High-speed earthing switch, complete pole 1 Nos Complete set of contacts Nos 2.17.5.3 1 Nos Operating mechanism, complete 2 17 5 4 Operating mechanism motor 2 Nos 2.17.6 Other Equipment 2.17.6.1 Voltage transformer, 400 kV, complete with disconnecting 3 Nos and earthing switch 2.17.6.2 Current transformer, metering core, loose part Nos 6 2.17.6.3 Current transformer, protection core, loose part 6 Nos 2.17.7 400kV GIS Bay, Local Control Cabinet 2.17.7.1 One Bay Local Control Cabinet complete, wired, with all specified devices 2.17.8 Bus Bar Elements 2.17.8.1 Bus conductor elements 2.17.8.2 1 Lot Bus connection elements GIS insulators, one of each type used 2.17.83 1 Lot Pressure relief elements 2.17.8.4 1 Lot 2.17.9 SF6-to-Air Bushing Modules SF6-to-air bushing module, 400 kV, single phase 2.17.9.1 1 Lot 2.17.10 **Loose Spare Parts** 2.17.10.1 5% of auxiliary relays, control devices, fuses, terminal blocks, etc. minimum Lot one unit of each type used 2.17.11 Other necessary works as per Employer's Requirement and Conditions of 1 Lot Contract, if any, not included above (specify) Sub Total 2.17 Spare of LV control and power cables 2.18 LV control cable, 5% of the installed cables 2.18.1 Lot 2.18.2 LV power cable, 5% of the installed cables Lot 2.183 Cable installation accessories - 5% of the installed material 1 Lot 2.18.4 Other necessary works as per Employer's Requirement and Conditions of Lot Contract, if any, not included above (specify) Sub Total 2.18 2.19 Spare parts of Mechanical Equipment 2.19.1 Fire protection Lot Fire protection/detection for auto transformer - one unit of each type used 2 19 1 1 1 2.19.1.2 Clean-agent fire extinguisher 1 Lot 2.19.1.3 Control Building general fire protection/detection system, one unit of each 1 Lot component used 2.19.1.4 GIS Building general fire protection/detection system, one unit of each 1 Lot component used 2.19.2 Control building HVAC system 2.19.2.1 Throwaway air filters per air conditioning unit 1 Lot 2.19.2.2 Pulley belts per air conditioning unit motor Lot 2.19.2.3 Thermostat per air conditioning unit 1 Lot 2.19.3 GIS building ventilation system Throwaway air filters per ventilation system Lot

Breakdown of Rates and Prices Schedule No. 2. Plant, Goods and Equipment(Including Mandatory Spare Parts) Supplied from Abroad

Item No.	Description	Code	Qty	Unit	Unit Rate (b)	Total Price (c)	
		(a)			US\$	US\$	
					DDP plus all related		
					cost as defined in		
					foot note		
				2	3	(1) x (3)	
2.19.3.2	Pulley belts per ventilation unit motor		1	Lot			
2.19.3.3	Thermostat per ventilation unit		1	Lot			
2.19.4	Other necessary works as per Employer's Requirement and Conditions of		1	Lot			
	Contract, if any, not included above (specify)						
					Sub Total 2.19		
		To	tal(Ca	arried for	ward to Grand SC-5)		
	Name of I	Bidder:			•		
Signature of Bidder:							
Note:	Note:						
***: This	value is indicative, the Contractor will validate as per item 1.1.6 of Design W	orks (E	lectric	al)			

Country of Origin Declaration Form				
Item No.	Description	Code		

Note: Bidders shall enter the full name of the country of origin of all imported plant and equipment. Enter the code as per the Country of Origin

Employer's Country						
Item No.	Description	Qty	Unit	Unit Rate (b) US\$ EXW plus all related cost as defined in foot note	Total Price (c ) US\$	
		1	2	3	(1) x (3)	
3.1 3.1.1	Design Works (Electrical) Auto-Transformer, 315 MVA, 400/220/33 kV, Three Phase, OLTC, RTCC	3	Nos			
3.1.1	Bushing CT, all fittings & accessories as specified/ required for completion of the scope of works as per technical specification	3	NOS			
3.1.2	Capacitive Voltage Transformer (CVT) 400kV, Single Phase 2 Windings, Secondary Voltage 110V, Accuracy 0.2, Min Burden 50VA, Application Metering	6	Nos			
3.1.3	Capacitive Voltage Transformer (CVT) 400kV, Single Phase 2 Windings, Secondary Voltage 110V, Accuracy 0.2, Min Burden 50VA, Application: Metering and PLC Coupling	6	Nos			
3.1.4	Current Transformer (CT), 400kV, Single Phase, Live tank Type, 3 Core, 2000-1000-500/1A, Class 0.2, Rated Output 15VA	12	Nos			
3.1.5	Current Transformer (CT), 220kV Single Phase, Tank Type, 5 Core, 1600A, 120% Extended Current Rating	9	Nos			
3.1.6	Current Transformer (CT), 72.5kV, Single Phase 2 Windings	6	Nos			
3.1.7	400kV Surge Arrester (SA), Zinc Oxide 366 kV Rated Voltage, 20kA, 12kJ/kV	12	Nos			
3.1.8	220kV Surge Arrester (SA), Zinc Oxide 216kV Rated Voltage, 10kA, 12kJ/kV	9	Nos			
3.1.9	Substation Service Transformer, 630 kVA, 33/0.4kV	2	Nos			
3.1.10	30kV,10kA Lightning arrester for 33kV line bays	6	Nos			
3.1.11	30kV,10kA Lightning arrester for 33/0.4kV station service transformers	6	Nos			
3.1.12	Tandem Isolator without Earthing Switch, 220kV,1600 A, 50kA, Three Phase (Set of 3)  Isolator with One Earthing Switch, 220kV,1600 A, 50kA, Three Phase (Set	3	Nos			
3.1.14	of 3) Isolator with Two Earthing Switch, 220kV,1600 A, 50kA, Three Phase (Set	3	Nos			
3.1.15	72.5kV Double Break Isolator, Single Phase	1	Lot			
3.1.16	220kV Circuit Breaker, Three Phase, 1600A	3	Nos			
3.1.17	72.5kV Circuit Breaker, Three Phase, 50Hz.	2	Nos			
3.1.18	72.5kV Current Transformer	6	Nos.			
3.1.19	400kV Bus Support Post Insulator	1	Lot			
3.1.20	220kV Bus Support Post Insulator	1	Lot			
3.1.21	72.5kV Bus Support Post Insulator	1	Lot			
3.1.22 3.1.23	Suspension/Tension Insulator Strings, Including Hardware  Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)	1	Lot			
				Sub Total 3.1		
3.2 3.2.1	Hot-Dip Galvanized Steel Gantry Column for 400 kV Incoming Line	6	Nas	1		
3.2.2	Gantry Column for 220 kV Incoming Line	5	Nos Nos			
3.2.3	Gantry Girder for 400 kV Incoming Line	4	Nos			
3.2.4	Gantry Girder for 220 kV Incoming Line	3	Nos			
3.2.5	Support Structure for 400 kV Current Transformer	12	Nos			
3.2.6	Support Structure for 400 kV Capacitor Voltage Transformer	12	Nos			
3.2.7	Support Structure for 400 kV Surge Arrester	12	Nos			
3.2.8 3.2.9	Support Structure for 400 kV Bus Support Support Structure for Tandem Isolator without Earthing Switch, 220kV,1600 A, 50kA, Three Phase (Set of 3)	9	Lot Nos			
3.2.10	Support Structure for Isolator with One Earthing Switch, 220kV,1600 A, 50kA, Three Phase (Set of 3)	3	Nos			
3.2.11	Support Structure for Isolator with Two Earthing Switch, 220kV,1600 A, 50kA, Three Phase (Set of 3)	3	Nos			
3.2.12	Support Structure for 72.5 kV Disconnecting Switch	1	Lot			
3.2.13	Support Structure for 220 kV Current Transformer	9	Nos		·	
3.2.14	Support Structure for 220 kV Surge Arrester	9	Nos			
3.2.15	Support Structure for 220 kV Bus Support	1	Lot			
3.2.16 3.2.17	Support Structure for 72.5 kV Current Transformer Support Structure for 72.5 kV Bus Support or Pot Head	6	Nos Lot			
3.2.17	Support Structure for 72.5 kV Bus Support or Pot Head Support Structure for 72.5 kV Single Switch Stand	1	Lot			
3.2.19	Support Structure for 30kV Lightning Arrestor	15	Nos.			
	Structures for Lightning Mast and other Lighting structures	1	Lot	1		
3.2.20	Structures for Lightning Mast and other Lighting structures	1	Lot			

3.3.1 5" A 141 3.3.2 4" A 141 3.3.3 Bus (Tu 3.3.4 Bar 54.3 3.3.5 Oth Cor  3.4 LV 3.4.1 LV 3.4.2 LV 3.4.3 Cab (Ca 3.4.4 XLI line 3.4.5 33.4.6 PV 3.4.7 Cab con 3.4.8 Oth Cor  3.5 AC 3.5.1 400 3.5.1.1 400 3.5.1.2 400 (5) 3.5.1.4 Diss 400 (6) 3.5.2 400 3.5.2.1 100 3.5.2.2 Dis Bus Bus Bus Bus Bus Bus Bus Bus Bus Bus	"AL. Tubular Bus Bar 41.30mm Outer Diameter, 9.53mm Thickness "AL. Tubular Bus Bar 14.2mm Outer Diameter, 8.51mm Thickness	1	2	1	Total Price (c) US\$ (1) x (3)
3.3.1 5" A 141 3.3.2 4" A 114 3.3.3 Bus (Tu 3.3.4 Bar 54 3 3.3.5 Oth Cor  3.4 LV 3.4.1 LV 3.4.2 LV 3.4.3 Cab (Ca 3.4.4 XLI line 3.4.5 33 1 3.4.6 Pov PV 3.4.7 Cab con 3.4.8 Oth Cor  3.5.1 400 3.5.1.1 400 3.5.1.2 400 630 3.5.1.3 Dis 400 630 3.5.1.4 Dis 540 60 3.5.2 400 3.5.2.1 100 3.5.2.2 100 3.5.3.3 100	" AL. Tubular Bus Bar 41.30mm Outer Diameter, 9.53mm Thickness " AL. Tubular Bus Bar 14.2mm Outer Diameter, 8.51mm Thickness	1		3	
3.3.1 5" A 141 3.3.2 4" A 114 3.3.3 Bus (Tu 3.3.4 Bar 54 3 3.3.5 Oth Cor  3.4 LV 3.4.1 LV 3.4.2 LV 3.4.3 Cab (Ca 3.4.4 XLI line 3.4.5 33 1 3.4.6 Pov PV 3.4.7 Cab con 3.4.8 Oth Cor  3.5.1 400 3.5.1.1 400 3.5.1.2 400 630 3.5.1.3 Dis 400 630 3.5.1.4 Dis 540 60 3.5.2 400 3.5.2.1 100 3.5.2.2 100 3.5.3.3 100	" AL. Tubular Bus Bar 41.30mm Outer Diameter, 9.53mm Thickness " AL. Tubular Bus Bar 14.2mm Outer Diameter, 8.51mm Thickness	1		Sub Total 3.2	
3.3.2 4" / 114 3.3.3 Bus (Tu 3.3.4 Bar 3.3.5 Oth Cor  3.4 LV 3.4.1 LV 3.4.2 LV 3.4.3 Cab (Ca 3.4.4 XL) line 3.4.5 33.1 3.4.6 Pov Pv 3.4.7 Cab con 3.4.8 Oth Cor  3.5.1 400 3.5.1.1 400 3.5.1.2 400 (6) (6) 3.5.1.3 Dis 3.5.2 400 3.5.2.1 100 3.5.2.1 100 3.5.2.2 Dis Bus Bus Bus Bus Bus Bus Bus Bus Bus Bu	41.30mm Outer Diameter, 9.53mm Thickness  " AL. Tubular Bus Bar  14.2mm Outer Diameter, 8.51mm Thickness	1	Y	1	
3.3.2 4" A 114 3.3.3 Bus (Tu 3.3.4 Bar 3.3.5 Oth Cor  3.4 LV 3.4.1 LV 3.4.2 LV 3.4.3 Cab (Ca 3.4.4 XL) line 3.4.5 33 1 3.4.6 Pov 3.4.7 Cab con 3.4.8 Oth Cor  3.5.1 400 3.5.1.1 400 3.5.1.2 400 (6) (6) 3.5.1.2 bis 3.5.2 400 (6) 3.5.2.1 100 3.5.2.2 Dis 3.5.3.3 400 3.5.3.1 100 3.5.3.1 100 3.5.3.2 Dis 3.5.3.3 400 (5) 3.5.3.3 Dis 3.5.3.4 400	" AL. Tubular Bus Bar 14.2mm Outer Diameter, 8.51mm Thickness		Lot		
3.4.3 Bus (Tu 3.3.4 Bar 54.5 St. 54.5 S	14.2mm Outer Diameter, 8.51mm Thickness	1	Lot		
(Tu 3.3.4 Bar 54.3 3.3.5 Oth Cor  3.4 LV 3.4.1 LV 3.4.2 LV 3.4.3 Cab (Ca 3.4.4 XLI line 3.4.5 33.1 3.4.6 Pov PV( 3.4.7 Cab con 3.4.8 Oth Cor  3.5.1 400 3.5.1.1 400 3.5.1.2 400 63) 3.5.1.3 Dis 3.5.1.4 Dis 400 (6) 3.5.2 400 3.5.2.1 Dis Bus Bus Bus Bus Bus Bus Bus Bus Bus Bu	1 0 1 1 1	-	200		
3.3.4 Bar 54 \$ 3.3.5 Oth Cor 3.4.1 LV 3.4.2 LV 3.4.3 Cab (Ca 3.4.4 XL) Interest of the second	ous bar Connectors and Hardware	1	Lot		
3.4.1 LV 3.4.1 LV 3.4.1 LV 3.4.2 LV 3.4.3 Cab (Ca 3.4.4 XLI line 3.4.5 33 I 3.4.6 Poo PV( 3.4.7 Cab con 3.4.8 Oth Cor  3.5.1 400 3.5.1.1 400 3.5.1.2 400 (6): 3.5.1.4 Dis 400 (6): 3.5.2 400 3.5.2.1 100 3.5.2.1 100 3.5.2.2 Dis Bus Bus Bus Bus Bus Bus Bus Bus Bus TIE  3.5.3 400 (5): 3.5.3.1 100 3.5.3.2 Dis 3.5.3.3 400 (6): 3.5.3.3 400 (6): 3.5.3.3 400 (6): 3.5.3.4 400 (6): 3.5.3.3 400 (6): 3.5.3.4 400 (6): 3.5.3.5 AC	Γube to NEMA Pads, Bus Supports, etc)				
3.4.1 LV 3.4.1 LV 3.4.1 LV 3.4.2 LV 3.4.3 Cab (Ca 3.4.4 XL) line 3.4.5 331 3.4.6 Pow PV 3.4.7 Cab con 3.4.8 Oth Cor  3.5 AC 3.5.1 400 3.5.1.1 400 (5) 3.5.1.2 400 (6) 3.5.1.3 Dis 3.5.2 400 3.5.2 400 3.5.2 400 3.5.2 400 3.5.3.1 100 3.5.3.1 100 3.5.3.2 Dis Bus Bus Bus Bus Bus Bus Bus Bus Bus Bu	are Cond. ACSR	1	Lot		
3.4 LV 3.4.1 LV 3.4.2 LV 3.4.3 Cab (Ca 3.4.4 XL) line 3.4.5 33.1 3.4.6 Pov 3.4.7 Cab con 3.4.8 Oth Cor  3.5.1 400 3.5.1.1 400 3.5.1.2 400 (6) 3.5.1.3 Dis 3.5.1.4 Dis 400 (6) 3.5.2 100 3.5.2 400 3.5.2 100 3.5.2.1 100 3.5.3.5 Bus Bus Bus Bus Bus Bus Bus Bus Bus Bus	4 Strand 3.53mm AL 7 Strands 3.53mm Steel	1	Y . 4		
3.4 LV 3.4.1 LV 3.4.2 LV 3.4.3 Cab (Ca 3.4.4 XL) line 3.4.5 33 l 3.4.6 Pov 3.4.7 Cab con 3.4.8 Oth Cor  3.5.1 400 3.5.1.1 400 3.5.1.2 400 630 3.5.1.3 Dis 3.5.1.4 Dis 400 (6) 3.5.2 400 3.5.2 400 3.5.2 1 100 3.5.2 1 100 3.5.3 1 100	other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)	1	Lot		
3.4.1 LV 3.4.2 LV 3.4.3 (Cab (Ca 3.4.4 XL) line 3.4.5 33 1 3.4.6 Pov PV( 3.4.7 Cab con 3.4.8 Oth Cor  3.5.1 400 3.5.1.1 400 3.5.1.2 400 630 3.5.1.3 Dis 400 (6) 3.5.2 400 3.5.2.1 100 3.5.2.2 Bus Bus Bus Bus Bus Bus Bus Bus Bus Bus	ontract, if any, not included above (specify)			Sub Total 3.3	
3.4.1 LV 3.4.2 LV 3.4.3 (Cab (Ca 3.4.4 XL) line 3.4.5 33 1 3.4.6 Pov PV( 3.4.7 Cab con 3.4.8 Oth Cor  3.5.1 400 3.5.1.1 400 3.5.1.2 400 630 3.5.1.3 Dis 400 (6) 3.5.2 400 3.5.2.1 100 3.5.2.2 Bus Bus Bus Bus Bus Bus Bus Bus Bus Bus	V Control and Power Cable			Sub Total Sis	
3.4.2 LV 3.4.3 Cab (Ca 3.4.4 XL) Iline 3.4.5 33 1 3.4.6 Pov PV 3.4.7 Cab con 3.4.8 Oth Cor  3.5 AC 3.5.1 400 3.5.1.2 400 3.5.1.3 Dis 400 (6) 3.5.1.4 Dis Bus Bus Bus Bus Bus Bus Bus Bus Bus Bu	V Control Cables	1	Lot		
(Ca 3.4.4 XL) line 3.4.5 33 1 3.4.6 Pow Pv 3.4.7 Cab con 3.4.8 Oth Cor  3.5 AC 3.5.1 400 3.5.1.1 400 3.5.1.2 400 (6) 3.5.1.2 400 (6) 3.5.1.2 100 3.5.1.4 Dis 400 (6) 3.5.2 400 (6) 3.5.2 100 3.5.2 100 3.5.3.1 100 3.5.3.1 100 3.5.3.1 100 3.5.3.1 100 3.5.3.1 100 3.5.3.1 100 3.5.3.1 100 3.5.3.1 100 3.5.3.1 100 3.5.3.1 100 3.5.3.1 100 3.5.3.1 100 3.5.3.3 400 (5) TIE 3.5.3.3 Dis 400 (6) (3) 3.5.3.4 400 (3) 3.5.3.4 400	V Power Cables	1	Lot		
3.4.4 XLI line 3.4.5 33 I 3.4.6 Pov PVC 3.4.7 Cab con 3.4.8 Oth Cor  3.5.1 400 3.5.1.1 400 3.5.1.2 400 630 3.5.1.3 Dis 400 (6): 3.5.2 400 3.5.2.1 100 3.5.2.2 Dis Bus Bus Bus Bus Bus Bus Bus Bus Bus Bu	able Installation Accessories	1	Lot		
line	Cable Gland, Labels Terminal Strips, etc)		Υ .		
3.4.5 33 1 3.4.6 Pov PV 3.4.7 Cab con 3.4.8 Oth Cor  3.5 AC 3.5.1 400 3.5.1.1 400 3.5.1.2 400 3.5.1.3 Dis 400 (5) 3.5.1.4 Dis: 400 3.5.2 400 3.5.2.1 100 3.5.2.2 Dis Bus Bus Bus Bus Bus Bus Bus Bus Bus Bu	LPE Power Cable, 33kV (from LV side of the Auto transformer to 33kV ne bay arrangement)	1	Lot		
3.4.6 Pov PV6 3.4.7 Cab con 3.4.8 Oth Cor  3.5 AC 3.5.1 400 3.5.1.1 400 3.5.1.2 400 3.5.1.3 Dis 400 (5) 3.5.1.4 Dis Bus Bus Bus Bus Bus Bus Bus Bus Bus Bu	3 kV Cable Pothead	1	Lot		
3.4.7 Cab con 3.4.8 Oth Cor  3.5 AC 3.5.1 400 3.5.1.1 400 3.5.1.2 400 3.5.1.3 Dis 400 (5) 3.5.1.4 Dis 400 3.5.2 400 3.5.2.1 100 3.5.2.2 Dis Bus Bus Bus Bus Bus Bus Bus Bus Bus Bu	ower Cable for Filter Plant (Transformer) 3.5CX240 sq.mm. (Armoured,	1	Lot		
3.4.7 Cab con 3.4.8 Oth Cor  3.5 AC 3.5.1 400 3.5.1.1 400 3.5.1.2 400 3.5.1.3 Dis 400 (6) 3.5.1.4 Dis 400 (6) 3.5.2 400 3.5.2.1 100 3.5.2.1 Dis 3.5.3 400 3.5.3.1 100 3.5.3.1 Dis 400 (5) 3.5.3.1 100 3.5.3.1 100 3.5.3.1 100 3.5.3.2 Dis 3.5.3.3 Dis 400 (5) TIE 3.5.3.3 Dis 400 (3) 3.5.3.4 400 (3) 3.5.4.4 400	VC Insulated) with suitable termination arrangement all complete	1	Lot		
3.4.8 Oth Cor  3.5 AC  3.5.1 400 3.5.1.1 400 3.5.1.2 400 630 3.5.1.3 Dis 400 (6) 3.5.2 400 3.5.2.1 100 3.5.2.2 Dis Bus Bus Bus Bus Bus Bus Bus Bus Bus Bu	able carriers (trays, conduits, ducts) for routing the HV & LV power,	1	Lot		
3.5 AC 3.5.1 400 3.5.1.1 400 3.5.1.2 400 3.5.1.3 Dis 400 (5): 3.5.1.4 Dis 400 (6): 3.5.2 400 3.5.2.1 100 3.5.2.2 Dis Bus Bus Bus Bus TIE 3.5.3 400 (5): 3.5.3.1 100 (5): TIE 3.5.3.3 Dis 400 (5): TIE 3.5.3.3 Dis 400 (5): TIE 3.5.3.4 400 (3): 3.5.4.4 400	ontrol, instrumentation and communication interface cables.				
3.5 AC 3.5.1 400 3.5.1.1 400 3.5.1.2 400 3.5.1.3 Dis 400 (5) 3.5.1.4 Dis 400 (5) 3.5.1.4 Dis 400 (6) 3.5.2 400 3.5.2.1 100 3.5.2.2 Dis Bus Bus Bus Bus Bus Bus Bus Bus Bus Bu	ther necessary works as per Employer's Requirement and Conditions of	1	Lot		
3.5.1 400 3.5.1.1 400 3.5.1.2 400 3.5.1.2 400 3.5.1.3 Dis 400 (5) 3.5.1.4 Dis 400 (6) 3.5.2 400 3.5.2.1 100 3.5.2.2 Dis Bus Bus Bus Bus Bus 3.5.3 400 (5) 3.5.3.1 100 3.5.3.2 Dis 400 (5) 3.5.3.3 400 3.5.3.4 400 (3) 3.5.3.4 400 (3) 3.5.3.5.4 400	Contract, if any, not included above (specify)				
3.5.1 400 3.5.1.1 400 3.5.1.2 400 3.5.1.2 400 3.5.1.3 Dis 400 (5) 3.5.1.4 Dis 400 (6) 3.5.2 400 3.5.2.1 100 3.5.2.2 Dis Bus Bus Bus Bus Bus 3.5.3 400 (5) 3.5.3.1 100 3.5.3.2 Dis 400 (5) 3.5.3.3 400 3.5.3.4 400 (3) 3.5.3.4 400 (3) 3.5.3.5.4 400				Sub Total 3.4	
3.5.1.1 400 100 3.5.1.2 400 630 3.5.1.3 Dis 400 (5): 3.5.1.4 Dis 400 (6): 3.5.2 400 3.5.2.1 100 3.5.2.2 Dis Bus Bus Bus TIE 3.5.3 400 (5): 3.5.3.1 100 3.5.3.2 Dis 400 (5): TIE 3.5.3.3 Dis 400 (3): 3.5.4 400 (3): 3.5.4 400	.C AND DC STATION SUPPLY 00 V AC Main Switch Board			1	
3.5.1.2 400 (63) 3.5.1.3 Dis 400 (55) 3.5.1.4 Dis 400 (6) 3.5.2 400 3.5.2.1 100 3.5.2.2 Dis Bus Bus Bus 3.5.3.1 400 (5) THE 3.5.3.3 Dis 400 (5) TIE 3.5.3.3 Dis 400 (3) 3.5.4.4 400	00V AC Main Switch Board 00V Switchgear with Automation Controls,	3	Nos		
3.5.1.2 400 630 3.5.1.3 Dis 400 (5) 3.5.1.4 Dis 3.5.1.4 Dis 3.5.2 400 3.5.2.1 100 3.5.2.2 Dis Bus Bus Bus TIE 3.5.3 400 (5) TIE 3.5.3.1 Dis 400 (5) TIE 3.5.3.3 Dis 400 (3) 3.5.4.4 400	000A CB and 2 Current Transformers	3	NOS		
3.5.1.3 Dis 400 (5): 3.5.1.4 Dis 400 (6): 3.5.2 400 3.5.2.1 100 3.5.2.2 Dis Bus Bus TIE 3.5.3 400 (5): 3.5.3.1 100 3.5.3.2 Dis 400 (5): TIE 400 (3): 3.5.3.3 Dis 400 (3): 3.5.3.4 400 (3):	00V Switchgear with Automation Controls,	1	Nos		
3.5.1.4 Diss 400 (6): 3.5.2.1 100 3.5.2.2 Diss Bus Bus TIE 3.5.3.3 400 (5): 3.5.3.1 100 3.5.3.2 Dis 400 (5): TIE 3.5.3.3 Diss 400 (3): 3.5.4.4 400	30A CB and 2 Current Transformers				
(5): 3.5.1.4 Dis 400 (6): 3.5.2 400 3.5.2.1 100 3.5.2.2 Dis Bus Bus TIE 3.5.3 400 3.5.3.1 100 3.5.3.2 Dis 400 (5): TIE 3.5.3.3 Dis 400 (3): 3.5.4 400	Distribution panel Bus-A,	1	Nos		
3.5.1.4 Dis 400 (6). 3.5.2 400 3.5.2.1 100 3.5.2.2 Dis Bus Bus TIE 400 (5). 3.5.3.1 100 3.5.3.1 100 3.5.3.2 Dis 400 (5). TIE 3.5.3.3 Dis 400 (3). 3.5.4 400	00V, 3 Phase, 1000A, 20kA for 1Sec.				
3.5.2 400 3.5.2.1 100 3.5.2.2 Diss Bus Bus Bus 3.5.3 400 3.5.3.1 100 3.5.3.2 Diss 400 (5) THE 3.5.3.3 Diss 400 (3) 3.5.3.4 400 (3)	5) 400A Breakers, (1) Potential Transformer Distribution panel Bus-B,	1	Nos		
(6) 3.5.2 400 3.5.2.1 100 3.5.2.2 Dis Bus Bus TIE 3.5.3 400 3.5.3.1 100 3.5.3.2 Dis 400 (5) TIE 3.5.3.3 Dis 400 (3) 3.5.3.4 400 (3) 3.5.4.4 400	00V, 3 Phase, 1000A, 20kA for 1Sec.	1	NOS		
3.5.2 400 3.5.2.1 100 3.5.2.2 Dis Bus Bus TIE 3.5.3 400 3.5.3.1 100 3.5.3.2 Dis 400 (5) TIE 3.5.3.3 Dis 400 (3) 3.5.3.4 400 (3)	6) 400A Breakers, (1) Potential Transformer				
3.5.2.2 Dis Bus Bus Bus TIE 3.5.3 400 (5) TIE 3.5.3.3 Dis 400 (3) 3.5.3.4 400 (3) 3.5.4 400 (3)	00 V AC Main Lighting Board				
Bus Bus Bus Bus TIE  3.5.3 400 3.5.3.1 100 3.5.3.2 Dis 400 (5) TIE 3.5.3.3 Dis 400 (3) 3.5.4.4 400	00KVA Lighting Transformer	2	Nos		
Bus Bus TIE 400 (5) TIE 3.5.3.3 Dis 400 (3) 3.5.3.4 400 (3) 3.5.4.4 400	Distribution panel, 400V, 3 Phase, 4 Wire, 20kA, 1Sec.	1	Nos		
Bus TIE 3.5.3 400 3.5.3.1 100 3.5.3.2 Dis 400 (5) TIE 3.5.3.3 Dis 400 (3) 3.5.4 400	sus-A (4) 63A, (1) 400A Breakers,				
3.5.3 400 3.5.3.1 100 3.5.3.2 Dis 400 (5) THE 3.5.3.3 Dis 400 (3) 3.5.4 400	sus-B (4) 63A, (1) 400A Breakers,				
3.5.3 400 3.5.3.1 100 3.5.3.2 Dis 400 (5) TIE 3.5.3.3 Dis 400 (3) 3.5.4 400	sus-C (5) 63A TE A-B 400A breaker, TIE B-C 400A Breaker				
3.5.3.1 100 3.5.3.2 Dis 400 (5) TIE 3.5.3.3 Dis 400 (3) 3.5.4 400	00 V AC Emergency Lighting Distribution Board				
3.5.3.2 Dis 400 (5) TIE 3.5.3.3 Dis 400 (3) 3.5.4 400	00KVA Lighting Transformer	1	Nos		
3.5.3.3 Dis 400 (3) 3.5.4 400	Distribution panel Bus-A	1	Nos		
(5) TIE 3.5.3.3 Dis 400 (3) 3.5.4 400	00V, 3 Phase, 4 Wire, 20kA, 1Sec.	1	1103		
3.5.3.3 Dis 400 (3) 3.5.4 <u>400</u>					
400 (3) 3.5.4 400	5) 63A, (1) 400A 4 Pole Breakers,				
(3) 3.5.4 <u>400</u>	15) 63A, (1) 400A 4 Pole Breakers, IE A-B 100A breaker	1	Nos		
3.5.4 <u>400</u>	IE A-B 100A breaker Distribution panel Bus-B				
	IE A-B 100A breaker Distribution panel Bus-B 00V, 3 Phase, 4 Wire, 20kA, 1Sec.				
	IE A-B 100A breaker Distribution panel Bus-B 00V, 3 Phase, 4 Wire, 20kA, 1Sec. B) 63A, (1) 400A 4 Pole Breakers,				
	TE A-B 100A breaker Distribution panel Bus-B 00V, 3 Phase, 4 Wire, 20kA, 1Sec. B) 63A, (1) 400A 4 Pole Breakers, 00 V AC Distribution Board	1	NT		
	Distribution panel Bus-B 00V, 3 Phase, 4 Wire, 20kA, 1Sec. B) 63A, (1) 400A 4 Pole Breakers, 00 V AC Distribution Board 00V Switchgear with Automation Controls,	1	Nos		
	IE A-B 100A breaker Distribution panel Bus-B 00V, 3 Phase, 4 Wire, 20kA, 1Sec. B) 63A, (1) 400A 4 Pole Breakers, 00 V AC Distribution Board 00V Switchgear with Automation Controls, 000A CB and 2 Current Transformers			+	
	TE A-B 100A breaker Distribution panel Bus-B 00V, 3 Phase, 4 Wire, 20kA, 1Sec. 3) 63A, (1) 400A 4 Pole Breakers, 00 V AC Distribution Board 00V Switchgear with Automation Controls, 000A CB and 2 Current Transformers 00/110V, 50VA, Potential Transformer	3	Nos		
	IE A-B 100A breaker Distribution panel Bus-B 00V, 3 Phase, 4 Wire, 20kA, 1Sec. B) 63A, (1) 400A 4 Pole Breakers, 00 V AC Distribution Board 00V Switchgear with Automation Controls, 000A CB and 2 Current Transformers				
	PIE A-B 100A breaker Distribution panel Bus-B 00V, 3 Phase, 4 Wire, 20kA, 1Sec. B) 63A, (1) 400A 4 Pole Breakers, 00 V AC Distribution Board 00V Switchgear with Automation Controls, 000A CB and 2 Current Transformers 00/110V, 50VA, Potential Transformer 00/1A Current Transformer, Class 5P20	3	Nos Nos		
	Distribution panel Bus-B 00V, 3 Phase, 4 Wire, 20kA, 1Sec. 8) 63A, (1) 400A 4 Pole Breakers, 00V XC Distribution Board 00V Switchgear with Automation Controls, 000A CB and 2 Current Transformers 00/110V, 50VA, Potential Transformer 00/1A Current Transformer, Class 5P20 00V Switchgear with Automation Controls, 30A with 2 Current Transformers	3	Nos Nos		
(14) TIE	IE A-B 100A breaker Distribution panel Bus-B 00V, 3 Phase, 4 Wire, 20kA, 1Sec. 8) 63A, (1) 400A 4 Pole Breakers, 00V AC Distribution Board 00V Switchgear with Automation Controls, 000A CB and 2 Current Transformers 00/110V, 50VA, Potential Transformer 00/1A Current Transformer, Class SP20 00V Switchgear with Automation Controls, 30A with 2 Current Transformers	3 1 1	Nos Nos Nos		

Item No.	Description	Qty	Unit	Unit Rate (b)	Total Price (c)
		Ş		US\$ EXW plus all related cost as defined in foot note	US\$
2516	100 Pi - 1 - 1 - 1 P - P	1	2	3	(1) x (3)
3.5.4.6	400v Distribution panel Bus-B (1) 400A, (3) 100A, (8) 63A 4 Pole Breakers (14) 63A, (5) 32A 4 Pole Breakers	1	Nos		
3.5.5	400 V AC AMF Panel				
3.5.5.1	400/1A Current Transformer, Class 1	3	Nos		
3.5.5.2	400/1A Current Transformer, Class 5P20	1	Nos		
<b>3.5.6</b> 3.5.6.1	DC Chargers and Batteries 220V Battery Charger (Float/Boost)	3	Nos		
3.5.6.2	48V Battery charger (Float/Boast)	3	Nos		
3.5.6.3	250A Throw over Switch, Interlock	6	Nos		
3.5.6.4	Battery, 220Vdc, 108 Minimum Cells	2	Nos		
3.5.6.5	Battery, 48Vdc, 24 Minimum Cells	2	Nos		
3.5.7	DC Distribution Boards				
3.5.7.1	Distribution panel, 220V, 400A, 4kA for 1 Sec. 50 positions	2	Nos		
3.5.7.2	Distribution panel, 48V, 400A, 4kA for 1 Sec. 50 positions	2	Nos		
3.5.7.3 3.5.7.4	DC Fuse Box, 220Vdc DC Fuse Box, 48Vdc	1	Lot Lot		
3.5.7.4	Other Equipment	1	LUI		
3.5.8.1	Diesel Generator Set, 250kVA (Including Fuel Tank)	1	Nos		
3.5.9	Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)	1	Lot		
	T			Sub Total 3.5	
3.6.1	400 kV Gas Insulated Switchgear (1-1/2 breaker arrangement)				
3.6.1.1	Line/feeder Bay SF6 Circuit Breaker, 400kV, 4000A, 50kA, Three Pole	10	Nos		
3.6.1.2	Current Transformer Modules, three cores, 400kV, single-phase, Three-phase set	20	Nos		
3.6.1.3	Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set	20	Nos		
3.6.1.4	Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set	20	Nos		
3.6.1.5	Line/Feeder High Speed Earthing Switches, with removable earthing link 400kV, 50kA, single-phase, three-phase set	10	Nos		
3.6.1.6	Voltage Transformers, 400kV, dual secondary, with earthing link, Single- phase, Three-phase set	10	Nos		
3.6.1.7	Line/Feeder Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set	10	Nos		
3.6.1.8	Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set	10	Nos		
3.6.1.9	Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring)	10	Nos		
3.6.1.10	Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay)	10	Nos		
3.6.1.11	LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices	1	Lot		
3.6.1.12	All metallic structures and supports required for GIS complete with accessories	1	Lot		
3.6.1.13	All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices	1	Lot		
3.6.1.14	Gas Insulated bus (GIB) and required supports for GIB run whole for Line/Feeder Bay Lot all complete	10	Bays		
3.6.2.1	Transformer Bay SF6 Circuit Breakers, 400kV, 4000A, 50kA, three-pole, with Control Point	4	Nos		
3.6.2.2	on Wave Switching Device Current Transformer Modules, Three cores, 400kV,	8	Nos		
3.6.2.3	Single-phase, Three-phase set  Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single phase, three-phase set	. 8	Nos		
3.6.2.4	Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set	8	Nos		
3.6.2.5	Line/Feeder High Speed Earthing Switches, with removable earthing link 400kV, 50kA, Single-phase, Three-phase set	4	Nos		
3.6.2.6	Voltage Transformers, 400kV, dual secondary, with earthing link, single- phase, three-phase set	4	Nos		
3.6.2.7	Transformer Disconnect Switches, 400kV, 4000A, 50kA,	4	Nos	1	

Dicar	kdown of Rates and Prices Schedule No. 3. Plant, Goods and Equipment (I Employer's Country		5 manuatoi	y Spare raris) Supplied Irol	within the
Item No.	Description	Qty	Unit	Unit Rate (b) US\$ EXW plus all related cost as defined in foot note	Total Price (c ) US\$
		1	2	3	(1) x (3)
3.6.2.8	Transformer Maintenance Earthing Switches, 400kV, 50kA, single-phase,	4	Nos		
3.6.2.9	three-phase set  Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker	4	Nos		
3.6.2.10	monitoring) Partial Discharge Monitoring System including monitoring sensors and	4	Nos		
3.6.2.11	diagnostic equipment (per bay)  LV control and power cable connections from Local Control Cabinet to all	1	Lot		
3.6.2.12	GIS equipment/devices All metallic structures and supports required for GIS complete with	1	Lot		
3.6.2.13	accessories All walkways, platforms, stairs, ladders and accessories required for access	1	Lot		
3.6.2.14	to all GIS devices Gas Insulated bus (GIB) and required supports for GIB run whole for	4	Bays		
2.62	Transformer Bay Lot all complete				
3.6.3 3.6.3.1	Diameter Middle Breaker Bay SF6 Circuit breaker		-		
a.	Proposed SF6 Diameter middle Circuit Breakers associated with Line Feeder, 400kV, 4000A, 50kA, three-pole	3	Nos		
b.	Proposed SF6 Diameter middle Circuit Breakers associated with Auto Transformer and Line Feeder, 400kV, 4000A, 50kA, three-pole, with Control Point on Wave Switching Device	4	Nos		
3.6.3.2	Current Transformer Modules, Three cores, 400kV,	14	Nos		
3.6.3.3	Single-phase, Three-phase set Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-	14	Nos		
3.6.3.4	phase, three-phase set  Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set	14	Nos		
3.6.3.5	Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring)	7	Nos		
3.6.3.6	Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay)	7	Nos		
3.6.3.7	LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices	1	Lot		
3.6.3.8	All metallic structures and supports required for GIS complete with accessories	1	Lot		
3.6.3.9	All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices	1	Lot		
3.6.4	Gas Insulated BUSBAR				
3.6.4.1	400 kV , 3 single phase (isolated), SF6 gas insulated , metal enclosed $4000 A$ bus bars each enclosed in three individual bus enclosures	7	Diameter		
3.6.4.2	Voltage Transformers, 400kV, dual secondary, with earthing link, single- phase, three-phase set	2	Nos		
3.6.4.3	High Speed Earthing Switches, with removable earthing link 400kV, 50kA, Single-phase, Three-phase set	2	Nos		
3.6.4.4	Maintenance Earthing Switches, 400kV, 50kA, single-phase, three-phase set	2	Nos		
3.6.4.5	Bus Bar Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase, three-phase set	2	Nos		
3.6.4.6	Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)	1	Lot		
			•	Sub Total 3.6	
3.7	Complete with control & protection up to GIB sealing end for all Feeder	and Tr	ansformer	Bays.	
3.7.1	Complete set of Control and Protection panels for 400 kV station as specified in Scope and Employers				
3.7.1.1	Requirements including but not limited to: Circuit Breaker Relay Panel (Note: BCU should be included in the Relay	21	Nos		
3.7.1.2	Panel) Line Protection Panel (Note: line protection should include tele protection	8	Nos		
	terminals) Transformer Protection Panel (Auto	6	Nos		
3.7.1.3	· ·				
3.7.1.3	Trans Bay 1=1no, Auto Trans Bay 2=1no) 400kV (Double Bus Bar Protection)	2	Set		

	Employer's Country		** *	T	
Item No.	Description	Qty	Unit	Unit Rate (b) US\$ EXW plus all related cost as defined in foot note	Total Price (c) US\$
		1	2	3	(1) x (3)
3.7.2	Complete set of Control and Protection panels for				
	220 kV station as specified in Scope and Employers				
3.7.2.1	Requirements including but not limited to:  Circuit Breaker Relay Panel (Note: BCU should be included in the Relay	4	Nos		
5.7.2.1	Panel)	7	1103		
3.7.2.2	Transformer Protection Panel (Auto	6	Nos		
	Trans Bay 1=1no,Auto Trans Bay 2=1no)				
3.7.2.3	Miscellaneous Relay and Control Equipment, not included above	1	Lot		
3.7.3	Complete set of Control and Protection panels for 33 kV station as specified in Scope and Employers Requirements including but not limited to:				
3.7.3.1	Circuit Breaker Relay Panel (Note: BCU should be included in the Relay	2	Nos		
2722	Panel)	_	3.7		
3.7.3.2	Transformer Protection Panel	2	Nos		
3.7.3.3 3.7.3.4	Miscellaneous Relay and Control Equipment, not included above  Substation Automation & Metering	1	Lot	+	
3.7.3.4.1	SAS Operator Station for control of 400/220/33 kV	1	Set		
3.7.3.4.2	Substation Automation System (SAS) for 400 kV System per diameter	7	Set		
3.7.3.4.3	Integration/connection of proposed 3 nos of 220 kV ICT bays with existing	1	Lot		
	220kV SAS system.				
3.7.3.4.4	Substation Automation System (SAS) for 33kV System per feeder	2	Set		
3.7.3.4.5 3.7.3.4.6	Substation Automation System (SAS) for Auxiliary System  Integration of all 400kV Bays under present scope with the SCADA of	1	Set Lot		
5./.5.4.0	SIEMENS (SINAUT Spectrum) at Load Dispatch Centre, Kathmandu	1	Lot		
	including supply of Hardware, Software, accessories etc. complete as per				
	Technical Specification.				
3.7.3.4.7	Telecommunication system for New Butwal	1	Lot		
3.7.3.4.8	Fibre Optic SDH System	1	Lot		
3.7.3.4.9	Phone System	1	Lot		
3.7.3.4.10	Line traps (4 required), complete with hardware and supporting material, and the power line carrier equipment, complete with necessary coupling equipment and cables for 2 sets of PLCC system complete.	1	Lot		
3.7.3.4.11	400 kV Metering	1	Lot		
3.7.3.4.12	220kV Metering	1	Lot		
3.7.3.4.13	Miscellaneous Relay and Control Equipment, not included above	1	Lot		
	C			Sub Total 3.7	
3.8 3.8.1	Grounding System Stranded Bare Copper 240 Sq. mm** Grid	0	0		
3.6.1	(Including Fusion and Mechanical Connectors)	U	U		
3.8.2	Grounding Rods	0	0		
3.8.3	Embedded Grounding System - 400kV GIS (Including Connections to GIS metallic Structures, Supports and Walkways/Platforms)	0	0		
3.8.4	Embedded Grounding System - Control Room	0	0		
3.8.5	Other necessary works as per Employer's Requirement and Conditions of	0	0		
	Contract, if any, not included above (specify)			~	
2.0	I that a Post of a Contain			Sub Total 3.8	
3.9 3.9.1	Lightning Protection System Overhead Galvanized Steel Wire, Including Hardware	1	Lot	1	
3.9.2	Lightening Mast for equipment Protection	1	Lot		
3.9.3	Other necessary works as per Employer's Requirement and Conditions of	1	Lot		
	Contract, if any, not included above (specify)				
				Sub Total 3.9	
2.10	Firefighting System				
3.10.1	Fire protection/detection for 3 (three) auto transformers	1	Lot		
3.10.2 3.10.3	Fire protection/detection for 400kV GIS Building Fire protection/detection for Control House	1	Lot Lot		
3.10.4	Fire protection/detection for Control House Fire protection/detection system for pump house building	1	Lot		
3.10.5	Fire protection/detection system for generator diesel tank	1	Lot		
3.10.6	Portable fire extinguishers	1	Lot		
3.10.7	Clean-agent fire extinguishers	1	Lot		
3.10.8	Other necessary works as per Employer's Requirement and Conditions of	1	Lot		
	Contract, if any, not included above (specify)			~	
11	HVAC And Vontilation Systems			Sub Total 3.10	
5.11 5.11.1	HVAC And Ventilation Systems 400kV GIS Building HVAC and Ventilation Systems	1	Lot	1	
3.11.2	Control House HVAC and Ventilation Systems	1	Lot		
		4	1	i	

Item No.	Description	Qty	Unit	Unit Rate (b)	Total Price (c)
	2.00.1	40	·	US\$ EXW plus all related cost as defined in foot note	US\$
		1	2	3	(1) x (3)
				Sub Total 3.11	
3.12	Accessories and Ancillary Material	1	Υ.		
3.12.1 3.12.2	Junction and marshalling boxes, outdoor Junction and marshalling boxes, indoor	1	Lot Lot		
3.12.2	Outdoor lighting, including lighting fixtures	1	Lot		
3.12.4	Indoor lighting, including lighting fixtures	1	Lot		
3.12.5	Control Cabinet for outdoor lighting	1	Lot		
3.12.6	Rail tracks for movement of power transformers on the reinforced concrete	1	Lot		
	foundations all complete.				
3.12.7	Electric Overhead Travelling Crane for installation and removal of GIS Equipment	1	Lot		
3.12.8	Visual Monitoring System	1	Lot		
3.12.9	Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)	1	Lot		
				Sub Total 3.12	
3.13	Mandatory Maintenance, Repair tools and Testing Instruments	1		<del> </del>	-
<b>3.13.1</b> 3.13.1.1	GIS Equipment 400kV GIS SF6 leakage detector, analyzer and processing unit all complete	1	Lot		
3.13.1.1	400kV GIS SF6 leakage detector, analyzer and processing unit all complete 400kV GIS Wrenches and tools	1	Lot		
3.13.1.2	400kV GIS Pressure gauge	1	Nos		
3.13.1.4	400kV GIS Gas sampling and moisture meter	1	Nos		
3.13.1.5	400kV GIS Micro-Ohmmeter	1	Nos		
3.13.1.6	400kV GIS Circuit-breaker, timing tester	1	Nos		
3.13.1.7	400kV GIS Laptop computer with Specialized software for GIS setting and monitoring	1	Nos		
3.13.1.8	Complete set of SF6 gas service cart mounted on a trailer for mobile application. SF6 gas refilling cart equipped with 1 SF6 gas cylinder and the necessary instruments and adapters for easy and quick gas refilling in case of	. 1	Lot		
2.12.1.0	losses				
3.13.1.9	HV Test Bushing for GIS	1	Lot		
3.13.1.10 3.13.2	Online Partial Discharge Monitor System  Auto Transformer	1	Nos		
3.13.2.1	Oil-treatment unit 6000lph along with suitable size and quantity of connection arrangement (MCCB (240-300 Amp),terminal lugs etc.) all complete (autotransformer)	1	Nos		
3.13.2.2	Oil dielectric tester	1	Nos		
3.13.2.3	Dielectric tester based on tan δ and dielectric losses , 10 kV	1	Nos		
3.13.2.4	Megger, electronic, 5 kV	1	Nos		
3.13.2.5	Wrenches and tools	1	Lot		
3.13.3	Complete set of Control and Protection panels for Substation				
3.13.3.1	Relay Test Kit	1	Lot		
3.13.3.2	Test Equipment & tools for SAS SYSTEM for measuring, configuration & diagnostics.	1	Lot		
3.14	Mandatory Spare Parts			Sub Total 3.13	
3.14.1	HV Equipment				
3.14.1.1	Unit of 400kV surge arrester, complete with grading ring, terminals and surge counter	1	Lot		
3.14.1.2	Capacitive voltage transformer, 400kV	1	Nos		
3.14.1.3	Current transformer, 400kV	1	Nos		
3.14.1.4	Current transformer, 220kV	1	Nos		
3.14.1.5	Current transformer, 72.5kV	1	Nos		
3.14.2	Auto Transformer				<u> </u>
3.14.2.1	Complete set of gaskets with grease, for cover, manholes, hand holes, and pipping fittings.	1	Lot		
3.14.2.2	Lot of LV control and protective components, minimum one unit of each type of components used  Pressure relief device, complete with accessories	1	Lot		
3.14.2.3	Bushings, one complete unit of each type used, with accessories	1	Lot Lot		
3.14.2.4	Current transformer, one unit of each type	1	Nos		
3.14.2.6	Oil-circulating pump with motor, complete with accessories	1	Lot		
3.14.2.7	Cooling fan, complete with motor	1	Lot		
3.14.2.8	Buchholz relay, complete	1	Nos	<u>                                     </u>	
3.14.2.9	One instrument of each type used (temperature, oil level, pressure vent, etc.)	1	Lot		
	<u> </u>	-	T .4	1	
3.14.2.10	One valve of each type used	1	Lot		

Break	down of Rates and Prices Schedule No. 3. Plant, Goods and Equipment (I Employer's Country		g Mandatoi	ry Spare Parts) Supplied from	m Within the
Item No.	Description	Qty	Unit	Unit Rate (b) US\$ EXW plus all related cost as defined in foot note	Total Price (c ) US\$
		1	2	3	(1) x (3)
3.14.2.12	Silica gel, quantity for one load	1	Lot		
3.14.2.13	Tap changer diverter switch, spare contacts and transition resistance Tap changer selector switch spare contacts	1	Nos Lot		
3.14.2.15	Rolls of Kraft insulating paper	1	Nos		
3.14.2.16	LA with accessories for HV,IV and LV side	1	Lot		
3.14.2.17	Additional spare parts as per Chapter 3: Auto Transformer Specification of Part 2: Employer's Requirements, Section V – B1 (Technical Specifications).	1	Lot		
3.14.3 3.14.3.1	630kVA Transformer All Bushing with metal parts (each voltage rating) for 630 KVA Transformer	1	Lot		
3.14.3.2	Oil Temperature Indicator with sensing device	1	Lot		
3.14.3.3	Tap Changer Contacts	1	Lot		
3.14.3.4	Buchholz Relay	1	Nos		
3.14.3.5	Explosion vent diaphragm	1	Nos		
3.14.3.6	Set of valve (each type)	1	Lot		
3.14.3.7	3-Phase 33 kV Horn Gap Fuse	1	Lot		
3.14.3.8 3.14.4	LA with accessories for both sides  Other necessary works as per Employer's Requirement and Conditions of	1	Lot Lot		
3.14.4	Contract, if any, not included above (specify)	1	Lot	Sub Total 3.14	
3.15	Spare Parts for AC and DC Station Supply			Jub 10tai 3.14	
3.15.1	Spare for LV Switchgear				
3.15.1.1	LV circuit breaker, complete, with CT's and protection devices	1	Nos		
3.15.1.2	Outgoing thermomagnetic breakers - one unit of each type used	2	Nos		
3.15.1.3	Metering - one instrument of each type used	1	Nos		
3.15.1.4	Protection (other than included in LV breaker)	1	Nos		
3.15.1.5	One unit of each type used Automatic Transfer Switch	1	Nos		
3.13.1.3	One complete controller including sensors	1	Nos		
3.15.1.6	One or 5% of loose material	1	Nos		
3.13.1.0	Auxiliary relays, contactors, fuses, terminals, etc.		1105		
3.15.2	Spare for DC Distribution Panels				
3.15.2.1	Thermomagnetic breakers one unit of each type used	1	Nos		
3.15.2.2	Metering - one metering instrument of each type used	1	Nos		
3.15.2.3	Protection (other than included in LV breaker) One unit of each type used	1	Nos		
3.15.2.4	One or 5% of loose material Auxiliary relays, contactors, fuses, terminals, etc.	1	Nos		
3.15.3 3.15.3.1	Spare for Diesel Generator Set Replaceable elements for air filter	1	Nos		
3.15.3.2	Replaceable elements for air inter  Replaceable elements for oil filter	1	Nos		
3.15.3.3	Replaceable elements for fuel filter	1	Nos		
3.15.3.4	Complete set of injectors	1	Nos		
3.15.3.5	Fuel injector pump	1	Nos		
3.15.3.6	Oil pump	1	Nos		
3.15.3.7	Intake valves	1	Nos		
3.15.3.8	Seats for intake valves	1	Nos		
3.15.3.9 3.15.3.10	Exhaust valves Set for exhaust valves	1	Nos Nos		
3.15.3.10	Disconnect switch, with grounding blades, 245 kV, 3 Ø	1	Nos		
3.15.3.11	Set of pistons	1	Nos		
3.15.3.13	Set of complete bearings of the engine	1	Nos		
3.15.3.14	Set of all gaskets needed for the engine	1	Nos		
3.15.3.15	Set of thermostats	1	Nos		
3.15.3.16	Set of bearings for the alternator	1	Nos		
3.15.3.17	Set of control cards, at least one unit of each type used	1	Nos		
3.15.3.18	Diodes and thyristors of each type used	3	Nos		
3.15.3.19	Lamp, one unit of each type used	10	Nos Nos		
3.15.3.20	Auxiliary relay, one unit of each type used  Multifunction metering instrument	1	Nos Nos		
3.15.3.22	Voltage and speed regulator component and actuator	1	Nos		
3.15.3.23	Controller components	1	Nos		
3.15.3.24	Instrument, detectors	1	Nos		
3.15.4	Spare for Batteries				
3.15.4.1	One unit of battery used in 220 V DC system	1	Nos		

	down of Rates and Prices Schedule No. 3. Plant, Goods and Equipment (I Employer's Country	-			
Item No.	Description	Qty	Unit	Unit Rate (b) US\$ EXW plus all related cost as defined in foot note	Total Price (c ) US\$
2.15.4.2	Y	1	2	3	(1) x (3)
3.15.4.2	Loose parts for 220 V DC - connection elements, cables, links, etc.	1	Nos Nos		
3.15.4.3 3.15.4.4	One unit of battery used in 48 Vdc system  Loose parts for 48 V DC - connection elements, cables, links, etc.	1	Nos		
3.15.5	Spare for Battery Chargers	1	INUS		
3.15.5.1	Complete bridge of thyristors assembled on a cooling base	1	Nos		
3.15.5.2	Controller, complete including each type of card used	1	Nos		
3.15.5.3	Loose elements - auxiliary relays, breakers, metering instruments, control switches, fuses, etc.	1	Nos		
3.15.6	Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)	1	Lot	6.1.77.4.12.15	
3.16	Mandatory spare parts - Miscellaneous material			Sub Total 3.15	
3.16.1	Junction and marshalling boxed, outdoor, one of each type used	1	Nos		
3.16.2	Junction and marshalling boxed, outdoor, one of each type used	1	Nos		
3.16.3	Outdoor lighting fixture, one unit of each type used	1	Nos		
3.16.4	Post-type insulator, one unit of each type used	1	Nos		
3.16.5	Suspension insulator, 5% of the total used	1	Nos		
3.16.6	Bus bar (rigid and strain) hardware, including, connectors, terminals, separator, corona rings, 5% of each type used, minimum one unit	1	Nos		
3.16.7	Grounding conductors, 5% of the installed conductors (stranded copper conductor, rectangular-shape copper bar and grounding rod)	1	Nos		
3.16.8	Fusion connection material, including molds, welding powder and installation tools, quantity required to make 5% of the total executed connections	1	Nos		
3.16.9	Mechanical connectors for grounding, 5% of the total executed connections	1	Nos		
3.16.10	Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)	1	Lot	6.1.77.4.12.16	
3.17	Mandatory spare parts for 400kV GIS			Sub Total 3.16	
3.17.1	Spare Gas				
3.17.1.1 <b>3.17.2</b>	SF6 bottles required to fill the two largest volume compartments  Circuit Breakers, 4000 A, 50kA	1	Lot		
3.17.2.1	Circuit breaker, complete pole assembly	1	Lot		
3.17.2.2	Complete sets of main contacts	1	Lot		
3.17.2.3	Complete sets of arcing contacts	2	Lot		
3.17.2.4	Operating mechanism, complete	1	Lot		
3.17.2.5	Closing coils	4	Lot		
3.17.2.6	Tripping coils	4	Lot		
3.17.3 3.17.3.1	Disconnect-Switches, 4000 A Disconnect-Switch, complete pole	1	Nos		
3.17.3.2	Complete set of contacts	2	Nos		
3.17.3.3	Operating mechanism, complete	1	Nos		
3.17.3.4	Operating mechanism motor	2	Nos		
3.17.4	Maintenance Earthing Switches				
3.17.4.1	Earthing-Switch, complete pole	1	Nos		
3.17.4.2	Complete set of contacts	2	Nos		
3.17.4.3	Operating mechanism, complete	1	Nos		
3.17.4.4	Operating mechanism motor	2	Nos		
3.17.5	High-speed earthing Switches		N		
3.17.5.1 3.17.5.2	High-speed earthing switch, complete pole  Complete set of contacts	2	Nos Nos	+	
3.17.5.2	Operating mechanism, complete	1	Nos		
ل.ل.ال.ا	Operating mechanism motor	2	Nos		
3.17.5.4	Other Equipment				
3.17.5.4 3.17.6	Other Equipment	2	NI		
<b>3.17.6</b> 3.17.6.1	Voltage transformer, 400 kV, complete with disconnecting and earthing switch	3	Nos		
<b>3.17.6</b> 3.17.6.1 3.17.6.2	Voltage transformer, 400 kV, complete with disconnecting and earthing switch  Current transformer, metering core, loose part	6	Nos		
3.17.6.1 3.17.6.2 3.17.6.3	Voltage transformer, 400 kV, complete with disconnecting and earthing switch  Current transformer, metering core, loose part  Current transformer, protection core, loose part				
3.17.6 3.17.6.1 3.17.6.2 3.17.6.3 3.17.7	Voltage transformer, 400 kV, complete with disconnecting and earthing switch  Current transformer, metering core, loose part  Current transformer, protection core, loose part  400kV GIS Bay, Local Control Cabinet	6	Nos Nos		
3.17.6.1 3.17.6.2 3.17.6.3 3.17.7 3.17.7.1	Voltage transformer, 400 kV, complete with disconnecting and earthing switch  Current transformer, metering core, loose part  Current transformer, protection core, loose part  400kV GIS Bay, Local Control Cabinet  One Bay Local Control Cabinet complete, wired, with all specified devices	6	Nos		
3.17.6 3.17.6.2 3.17.6.3 3.17.7 3.17.7 3.17.7.1	Voltage transformer, 400 kV, complete with disconnecting and earthing switch  Current transformer, metering core, loose part  Current transformer, protection core, loose part  400kV GIS Bay, Local Control Cabinet  One Bay Local Control Cabinet complete, wired, with all specified devices  Bus Bar Elements	6 6	Nos Nos Lot		
3.17.6 3.17.6.2 3.17.6.3 3.17.6.3 3.17.7 3.17.7.1 3.17.8 3.17.8	Voltage transformer, 400 kV, complete with disconnecting and earthing switch  Current transformer, metering core, loose part  Current transformer, protection core, loose part  400kV GIS Bay, Local Control Cabinet  One Bay Local Control Cabinet complete, wired, with all specified devices  Bus Bar Elements  Bus conductor elements	6 6 1	Nos Nos Lot		
3.17.6 3.17.6.2 3.17.6.3 3.17.7 3.17.7 3.17.7.1	Voltage transformer, 400 kV, complete with disconnecting and earthing switch  Current transformer, metering core, loose part  Current transformer, protection core, loose part  400kV GIS Bay, Local Control Cabinet  One Bay Local Control Cabinet complete, wired, with all specified devices  Bus Bar Elements	6 6	Nos Nos Lot		

	Employer's Country				
Item No.	Description	Qty	Unit	Unit Rate (b) US\$ EXW plus all related cost as defined in foot note	Total Price (c) US\$
		1	2	3	(1) x (3)
3.17.9	SF6-to-Air Bushing Modules				
3.17.9.1	SF6-to-air bushing module, 400 kV, single phase	1	Lot		
3.17.10	Loose Spare Parts				
3.17.10.1	5% of auxiliary relays, control devices, fuses, terminal blocks, etc. minimum one unit of each type used	1	Lot		
3.17.11	Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)	1	Lot		
	(1 )			Sub Total 3.17	
3.18	Spare of LV control and power cables				
3.18.1	LV control cable, 5% of the installed cables	1	Lot		
3.18.2	LV power cable, 5% of the installed cables	1	Lot		
3.18.3	Cable installation accessories - 5% of the installed material	1	Lot		
3.18.4	Other necessary works as per Employer's Requirement and Conditions of	1	Lot		
	Contract, if any, not included above (specify)				
				Sub Total 3.18	
3.19	Spare parts of Mechanical Equipment				
3.19.1	Fire protection				
3.19.1.1	Fire protection/detection for auto transformer - one unit of each type used	1	Lot		
3.19.1.2	Clean-agent fire extinguisher	1	Lot		
3.19.1.3	Control Building general fire protection/detection system, one unit of each component used	1	Lot		
3.19.1.4	GIS Building general fire protection/detection system, one unit of each component used	1	Lot		
3.19.2	Control building HVAC system				
3.19.2.1	Throwaway air filters per air conditioning unit	1	Lot		
3.19.2.2	Pulley belts per air conditioning unit motor	1	Lot		
3.19.2.3	Thermostat per air conditioning unit	1	Lot		
3.19.3	GIS building ventilation system				
3.19.3.1	Throwaway air filters per ventilation system	1	Lot		
3.19.3.2	Pulley belts per ventilation unit motor	1	Lot		
3.19.3.3	Thermostat per ventilation unit	1	Lot		
3.19.4	Other necessary works as per Employer's Requirement and Conditions of	1	Lot		
	Contract, if any, not included above (specify)				
				Sub Total 3.19	
		1	Total (Car	ried forward to Grand SC-5)	
	Name of Bidder:				
Note:	Signature of Bidder:				

### Breakdown of Rates and Prices Schedule No. 4. Installation and Other Services including all related Civil Works

Item No.	Description	Total						
	Option A (No Future)							
4.1	Design Works (Electrical)							
4.2	Breakdown of Earthworks (from Schedule No.4.2)							
4.3	Breakdown of Civil Works (from Schedule No.4.3)							
4.4	Other Installation Services ( from Schedule No.4.5)							
4.5	Total Excluding Summary of Breakdown of Day works (from Schedule 4.4) (Carried							
	forward to Grand SC-5)							
4.6	Summary of Breakdown of Day works (from Schedule 4.4) (Carried forward to Grand							
	SC-5)							
4.7	Total Including Breakdown of Day works.							
	Name of the Bidder:							
	Signature of Bidder:							

Item no.	Description	Qty	Unit	Unit Rate in US\$	Amount in US\$
	D. I. W. I. Cl. J. I.	1	2	3	(1)x(3)
<b>4.1.1</b> 4.1.1.1	Design Works (Electrical) Indoor and outdoor storage facilities for storing equipment	1	Lot	1	
4.1.1.1	and material in substation	1	Lot		
4.1.1.2	Site Office, Accommodation and vehicular arrangement as	1	Lot		
	Specified in PSR				
4.1.1.3	Operation and Maintenance Manuals and Procedures	1	Lot		
4.1.1.4	"As-Built" Drawings for All Works including civil, building	1	Lot		
	mechanical etc.				
4.1.1.5	Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)	1	Lot		
412	ANCHRY LAWYER . AT A B .C.			Sub Total 4.1.1	
<b>4.1.2</b> 4.1.2.1	AIS HV and MV Equipment Installation Auto-Transformer, 315 MVA, 400/220/33 kV, Three	3	Nos	1	
4.1.2.1	Phase, OLTC, RTCC facility, necessary arrangement for	3	INUS		
	surge protection on both sides including tertiary, all fittings				
	& accessories as specified/ required for completion of the				
	scope of works as per technical specification				
4.1.2.2	Capacitive Voltage Transformer (CVT) 400kV, Single	6	Nos		
	Phase				
	2 Windings, Secondary Voltage 110V, Accuracy 0.2, Min				
4122	Burden 50VA, Application Metering	10	M		
4.1.2.3	Current Transformer (CT), 400kV, Single Phase, Tank Type,	12	Nos		
	3 Core, 2000-1000-500/1A, Class 0.2, Rated Output 15VA				
4.1.2.4	Current Transformer (CT), 220kV Single Phase, Tank	9	Nos		
	Type,		1105		
	5 Core, 1600A, 120% Extended Current Rating				
4.1.2.5	Current Transformer (CT), 72.5kV, Single Phase	6	Nos		
	2 Windings				
4.1.2.6	400kV Surge Arrester (SA), Zinc Oxide	12	Nos		
	366 kV Rated Voltage, 20kA, 12kJ/kV				
4.1.2.7	220kV Surge Arrester (SA), Zinc Oxide	9	Nos		
4.1.2.8	216kV Rated Voltage, 10kA, 12kJ/kV Substation Service Transformer, 630 kVA, 33/0.4kV	2	Nos		
4.1.2.9	30kV,10kA Lightning arrester for 33kV line bays with	6	Nos		
1.11.2.7	support structure, earthing arrangement all complete	O	1105		
4.1.2.10	30kV,10kA Lightning arrester for 33/0.4kV station service	6	Nos		
	transformers with support structure, earthing arrangement all complete				
4.1.2.11	Tandom Isolator without Earthing Switch, 220kV,1600 A,	9	Nos		
	50kA, Three Phase (Set of 3)				
4.1.2.12	Isolator with One Earthing Switch, 220kV,1600 A, 50kA,	3	Nos		
	Three Phase (Set of 3)				
4.1.2.13	Isolator with Two Earthing Switch, 220kV,1600 A, 50kA,	3	Nos		
4.1.2.14	Three Phase (Set of 3) 72.5kV Double Break Isolator, Single Phase	1	Nas		
4.1.2.14	220kV Circuit Breaker, Three Phase, 1600A	3	Nos Nos		
4.1.2.16	72.5kV Circuit Breaker, Three Phase, 50Hz.	2	Nos		
4.1.2.17	72.5kV Current Transformer	6	Nos.		
4.1.2.18	400kV Bus Support Post Insulator	1	Lot		
4.1.2.19	220kV Bus Support Post Insulator	1	Lot		
4.1.2.20	72.5kV Bus Support Post Insulator	1	Lot		
4.1.2.21	Suspension/Tension Insulator Strings, Including Hardware	1	Lot		
4.1.2.22	Other necessary works as per Employer's Requirement and	1	Lot		
	Conditions of Contract, if any, not included above (specify)				
				Sub Total 4.1.2	
4.1.3	Hot Dip Galvanized Steel				
4.1.3.1	Gantry Column for 400 kV Incoming Line	6	Nos	-	
4.1.3.2	Gantry Column for 220 kV Incoming Line	5	Nos	<del>                                     </del>	
4.1.3.4	Gantry Girder for 400 kV Incoming Line Gantry Girder for 220 kV Incoming Line	3	Nos Nos	+	
4.1.3.4	Support Structure for 400 kV Current Transformer	12	Nos	<del> </del>	
4.1.3.6	Support Structure for 400 kV Current Transformer  Support Structure for 400 kV Capacitive Voltage	12	Nos	<del> </del>	
	Transformer	1	1.55		
4.1.3.7	Support Structure for 400 kV Surge Arrester	12	Nos		
4.1.3.8	Support Structure for 400 kV Bus Support	1	Lot		
4.1.3.9	Support Structure for 220 kV Current Transformer	9	Nos		
4.1.3.10	Support Structure for 220 kV Surge Arrester	9	Nos	1	

Item no.	Description	Qty	Unit	Unit Rate in US\$	Amount in US\$
		1	2	3	(1)x(3)
4.1.3.11	Support Structure for 220 kV Bus Support	1	Lot		(-)(-)
4.1.3.12	Tandom Isolator without Earthing Switch, 220kV,1600 A, 50kA, Three Phase (Set of 3)	1	Lot		
4.1.3.13	Isolator with One Earthing Switch, 220kV,1600 A, 50kA, Three Phase (Set of 3)	9	Nos		
4.1.3.14	Isolator with Two Earthing Switch, 220kV,1600 A, 50kA, Three Phase (Set of 3)	9	Nos		
4.1.3.15	Support Structure for 72.5 kV Disconnecting Switch	1	Lot		
4.1.3.16	Support Structure for 72.5 kV Current Transformer	6	Nos		
4.1.3.17	Support Structure for 72.5 kV Bus Support or Pot Head	1	Lot		
4.1.3.18	Support Structure for 72.5 kV Single Switch Stand	1	Lot		
4.1.3.19	Support Structure for 30kV Lightning Arrestor	15	Nos.		
4.1.3.20	Structures for Lightning Mast and other Lighting structures	1	Lot		
4.1.3.21	Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)	1	Lot		
				Sub Total 4.1.3	
4.1.4	Bus Bar and Overhead Connections Installation		-		T
4.1.4.1	5" AL. Tubular Bus Bar 141.30mm Outer Diameter, 9.53mm Thickness	1	Lot		
4.1.4.2	4" AL. Tubular Bus Bar 114.2mm Outer Diameter, 8.51mm Thickness	1	Lot		
4.1.4.3	Bus bar Connectors and Hardware (Tube to NEMA Pads, Bus Supports, etc)	1	Lot		
4.1.4.4	Bare Cond. ACSR 54 Strand 3.53mm AL 7 Strands 3.53mm Steel	1	Lot		
4.1.4.5	Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)	1	Lot		
	conditions of contract, if any, not included above (specify)			Sub Total 4.1.4	
4.1.5	LV Control and Power Cable Installation				•
4.1.5.1	LV Control Cables	1	Lot		
4.1.5.2	LV Power Cables	1	Lot		
4.1.5.3	Cable Installation Accessories (Cable Gland, Labels Terminal Strips, etc)	1	Lot		
4.1.5.4	XLPE Power Cable, 33kV (from LV side of the Auto transformer to 33kV line bay arrangement)	1	Lot		
4.1.5.5	33 kV Cable Pothead	1	Lot		
4.1.5.6	Power Cable for Filter Plant (Transformer) 3.5CX240 sqmm (Armoured, PVC Insulated) with suitable termination arrangement all complete	1	Lot		
4.1.5.7	Cable carriers (trays, conduits, ducts) for routing the HV & LV power, control, instrumentation and communication interface cables.	1	Lot		
4.1.5.8	Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)	1	Lot		
			ı	Sub Total 4.1.5	
4.1.6	AC and DC Station Supply Installation				
4.1.6.1	400 V AC Main Switch Board				
4.1.6.1.1	400V Switchgear with Automation Controls, 1000A CB and 2 Current Transformers	3	Nos		
4.1.6.1.2	400V Switchgear with Automation Controls, 630A CB and 2 Current Transformers	1	Nos		
4.1.6.1.3	Distribution panel Bus-A, 400V, 3 Phase, 1000A, 20kA for 1Sec. (5) 400A Breakers, (1) Potential Transformer	1	Nos		
4.1.6.1.4	Distribution panel Bus-B, 400V, 3 Phase, 1000A, 20kA for 1Sec.	1	Nos		
4162	(6) 400A Breakers, (1) Potential Transformer			<del>                                     </del>	
<b>4.1.6.2</b> 4.1.6.2.1	400 V AC Main Lighting Board 100KVA Lighting Transformer	2	Nos	-	
4.1.6.2.1	Distribution panel, 400V, 3 Phase, 4 Wire, 20kA, 1Sec.	1	Nos		
	Bus-A (4) 63A, (1) 400A Breakers, Bus-B (4) 63A, (1) 400A Breakers,				
	Bus-C (5) 63A TIE A-B 400A breaker, TIE B-C 400A Breaker				
4.1.6.3	400 V AC Emergency Lighting Distribution Board			ļ	
4.1.6.3.1	100KVA Lighting Transformer	1	Nos	1	

Item no.	Description	Qty	Unit	Unit Rate in US\$	Amount in US\$
		1	2	3	(1)x(3)
4.1.6.3.2	Distribution panel Bus-A	1	Nos		
	400V, 3 Phase, 4 Wire, 20kA, 1Sec.				
	(5) 63A, (1) 400A 4 Pole Breakers,				
	TIE A-B 100A breaker				
4.1.6.3.3	Distribution panel Bus-B	1	Nos		
	400V, 3 Phase, 4 Wire, 20kA, 1Sec.				
	(3) 63A, (1) 400A 4 Pole Breakers				
4.1.6.4	400 V AC Distribution Board		2.7		
4.1.6.4.1	400V Switchgear with Automation Controls,	1	Nos		
41642	1000A CB and 2 Current Transformers	2	Nac		
4.1.6.4.2	400/110V, 50VA, Potential Transformer 400/1A Current Transformer, Class 5P20	3	Nos		
4.1.6.4.4	400v Distribution panel Bus-A	1	Nos		
7.1.0.7.7	(1) 400A, (4) 100A, (8) 63A, (2) 32A 4 Pole Breakers,	1	1103		
	(14) 63A, (8) 32A 2 Pole Breakers				
	TIE A-B 400A Breaker				
4.1.6.4.5	400v Distribution panel Bus-B	1	Nos		
	(1) 400A, (3) 100A, (8) 63A 4 Pole Breakers				
	(14) 63A, (5) 32A 4 Pole Breakers				
4.1.6.5	400 V AC AMF Panel				
4.1.6.5.1	400/1A Current Transformer, Class 1	3	Nos		
4.1.6.5.2	400/1A Current Transformer, Class 5P20	1	Nos		
4.1.6.6	DC Chargers and Batteries				
4.1.6.6.1	220V Battery Charger (Float/Boost)	3	Nos		
4.1.6.6.2	48V Battery charger (Float/Boast)	3	Nos		
4.1.6.6.3	250A Throw over Switch, Interlock	6	Nos		
4.1.6.6.4	Battery, 220Vdc, 108 Minimum Cells	2	Nos		
4.1.6.6.5	Battery, 48Vdc, 24 Minimum Cells	2	Nos		
4.1.6.7	DC Distribution Boards				
4.1.6.7.1	Distribution panel, 220V, 400A, 4kA for 1 Sec. 50 positions	2	Nos		
4.1.6.7.2	Distribution panel, 48V, 400A, 4kA for 1 Sec. 50 positions	2	Nos		
4.1.6.7.3	DC Fuse Box, 220Vdc	1	Lot		
4.1.6.7.4	DC Fuse Box, 48Vdc	1	Lot		
4.1.6.8	Other Equipment				
4.1.6.8.1	Diesel Generator Set, 250kVA (Including Full Tank)	1	Nos		
		1 1	Nos Lot		
4.1.6.8.1	Diesel Generator Set, 250kVA (Including Full Tank) Other necessary works as per Employer's Requirement and			Sub Total 4 1 6	
4.1.6.8.1 <b>4.1.6.9</b>	Diesel Generator Set, 250kVA (Including Full Tank) Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)			Sub Total 4.1.6	
4.1.6.8.1 4.1.6.9 4.1.7	Diesel Generator Set, 250kVA (Including Full Tank) Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  AC and DC Station Supply Installation			Sub Total 4.1.6	
4.1.6.9 4.1.7 4.1.7	Diesel Generator Set, 250kVA (Including Full Tank) Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  AC and DC Station Supply Installation Line/feeder Bay	1	Lot	Sub Total 4.1.6	
4.1.6.9 4.1.7 4.1.7.1 4.1.7.1	Diesel Generator Set, 250kVA (Including Full Tank) Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  AC and DC Station Supply Installation Line/feeder Bay SF6 Circuit Breaker, 400kV, 4000A, 50kA, Three Pole	10	Lot	Sub Total 4.1.6	
4.1.6.9 4.1.7 4.1.7	Diesel Generator Set, 250kVA (Including Full Tank) Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  AC and DC Station Supply Installation Line/feeder Bay	1	Lot	Sub Total 4.1.6	
4.1.6.9 4.1.7 4.1.7.1 4.1.7.1	Diesel Generator Set, 250kVA (Including Full Tank)  Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  AC and DC Station Supply Installation  Line/feeder Bay  SF6 Circuit Breaker, 400kV, 4000A, 50kA, Three Pole  Current Transformer Modules, three cores, 400kV, single-	10	Lot	Sub Total 4.1.6	
4.1.6.8.1 4.1.6.9 4.1.7 4.1.7.1 4.1.7.1.1 4.1.7.1.2	Diesel Generator Set, 250kVA (Including Full Tank)  Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  AC and DC Station Supply Installation  Line/feeder Bay  SF6 Circuit Breaker, 400kV, 4000A, 50kA, Three Pole  Current Transformer Modules, three cores, 400kV, single-phase, Three-phase set  Circuit Breaker Isolating Disconnect Switches, 400kV,	10 20	Nos Nos	Sub Total 4.1.6	
4.1.6.8.1 4.1.6.9 4.1.7 4.1.7.1 4.1.7.1.1 4.1.7.1.2	Diesel Generator Set, 250kVA (Including Full Tank)  Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  AC and DC Station Supply Installation  Line/feeder Bay  SF6 Circuit Breaker, 400kV, 4000A, 50kA, Three Pole  Current Transformer Modules, three cores, 400kV, single-phase, Three-phase set	10 20	Nos Nos	Sub Total 4.1.6	
4.1.6.8.1 4.1.6.9 4.1.7 4.1.7.1 4.1.7.1.1 4.1.7.1.2 4.1.7.1.3	Diesel Generator Set, 250kVA (Including Full Tank)  Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  AC and DC Station Supply Installation  Line/feeder Bay  SF6 Circuit Breaker, 400kV, 4000A, 50kA, Three Pole  Current Transformer Modules, three cores, 400kV, single-phase, Three-phase set  Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set	1 10 20 20	Nos Nos Nos	Sub Total 4.1.6	
4.1.6.8.1 4.1.6.9 4.1.7 4.1.7.1 4.1.7.1.1 4.1.7.1.2 4.1.7.1.3	Diesel Generator Set, 250kVA (Including Full Tank) Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  AC and DC Station Supply Installation Line/feeder Bay SF6 Circuit Breaker, 400kV, 4000A, 50kA, Three Pole Current Transformer Modules, three cores, 400kV, single-phase, Three-phase set Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set Circuit Breaker Maintenance Earthing Switches, 400kV,	1 10 20 20	Nos Nos Nos	Sub Total 4.1.6	
4.1.6.8.1 4.1.6.9 4.1.7 4.1.7.1 4.1.7.1.1 4.1.7.1.2 4.1.7.1.3	Diesel Generator Set, 250kVA (Including Full Tank) Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  AC and DC Station Supply Installation Line/feeder Bay  SF6 Circuit Breaker, 400kV, 4000A, 50kA, Three Pole Current Transformer Modules, three cores, 400kV, single-phase, Three-phase set Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set Line/Feeder High Speed Earthing Switches, with removable	1 10 20 20 20	Nos Nos Nos Nos	Sub Total 4.1.6	
4.1.6.8.1 4.1.6.9 4.1.7 4.1.7.1 4.1.7.1.1 4.1.7.1.2 4.1.7.1.3	Diesel Generator Set, 250kVA (Including Full Tank) Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  AC and DC Station Supply Installation Line/feeder Bay  SF6 Circuit Breaker, 400kV, 4000A, 50kA, Three Pole Current Transformer Modules, three cores, 400kV, single-phase, Three-phase set Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set Line/Feeder High Speed Earthing Switches, with removable	1 10 20 20 20	Nos Nos Nos Nos	Sub Total 4.1.6	
4.1.6.8.1 4.1.6.9 4.1.7 4.1.7.1 4.1.7.1.1 4.1.7.1.2 4.1.7.1.3 4.1.7.1.4 4.1.7.1.6	Diesel Generator Set, 250kVA (Including Full Tank)  Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  AC and DC Station Supply Installation  Line/feeder Bay  SF6 Circuit Breaker, 400kV, 4000A, 50kA, Three Pole  Current Transformer Modules, three cores, 400kV, single-phase, Three-phase set  Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set  Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set  Line/Feeder High Speed Earthing Switches, with removable earthing link 400kV, 50kA, single-phase, three-phase set  Voltage Transformers, 400kV, dual secondary, with earthing link, Single-phase, Three-phase set	1 10 20 20 20 10	Nos Nos Nos Nos Nos Nos	Sub Total 4.1.6	
4.1.6.8.1 4.1.6.9 4.1.7 4.1.7.1 4.1.7.1.1 4.1.7.1.2 4.1.7.1.3 4.1.7.1.4 4.1.7.1.5	Diesel Generator Set, 250kVA (Including Full Tank) Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  AC and DC Station Supply Installation Line/feeder Bay SF6 Circuit Breaker, 400kV, 4000A, 50kA, Three Pole Current Transformer Modules, three cores, 400kV, single-phase, Three-phase set Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set Line/Feeder High Speed Earthing Switches, with removable earthing link 400kV, 50kA, single-phase, three-phase set Voltage Transformers, 400kV, dual secondary, with earthing link, Single-phase, Three-phase set Line/Feeder Disconnect Switches, 400kV, 4000A, 50kA,	10 20 20 20 20	Nos Nos Nos Nos Nos	Sub Total 4.1.6	
4.1.6.8.1 4.1.6.9 4.1.7 4.1.7.1 4.1.7.1.1 4.1.7.1.2 4.1.7.1.3 4.1.7.1.4 4.1.7.1.5 4.1.7.1.6	Diesel Generator Set, 250kVA (Including Full Tank) Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  AC and DC Station Supply Installation Line/feeder Bay SF6 Circuit Breaker, 400kV, 4000A, 50kA, Three Pole Current Transformer Modules, three cores, 400kV, single-phase, Three-phase set Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set Line/Feeder High Speed Earthing Switches, with removable earthing link 400kV, 50kA, single-phase, three-phase set Voltage Transformers, 400kV, dual secondary, with earthing link, Single-phase, Three-phase set Line/Feeder Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set	10 20 20 20 20 10	Nos Nos Nos Nos Nos Nos Nos	Sub Total 4.1.6	
4.1.6.8.1 4.1.6.9 4.1.7 4.1.7.1 4.1.7.1.1 4.1.7.1.2 4.1.7.1.3 4.1.7.1.4 4.1.7.1.6	Diesel Generator Set, 250kVA (Including Full Tank) Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  AC and DC Station Supply Installation Line/feeder Bay SF6 Circuit Breaker, 400kV, 4000A, 50kA, Three Pole Current Transformer Modules, three cores, 400kV, single-phase, Three-phase set Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set Line/Feeder High Speed Earthing Switches, with removable earthing link 400kV, 50kA, single-phase, three-phase set Voltage Transformers, 400kV, dual secondary, with earthing link, Single-phase, Three-phase set Line/Feeder Disconnect Switches, 400kV, 4000A, 50kA,	1 10 20 20 20 10	Nos Nos Nos Nos Nos Nos	Sub Total 4.1.6	
4.1.6.8.1 4.1.6.9 4.1.7 4.1.7.1.1 4.1.7.1.2 4.1.7.1.3 4.1.7.1.4 4.1.7.1.5 4.1.7.1.6 4.1.7.1.7	Diesel Generator Set, 250kVA (Including Full Tank)  Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  AC and DC Station Supply Installation  Line/feeder Bay  SF6 Circuit Breaker, 400kV, 4000A, 50kA, Three Pole  Current Transformer Modules, three cores, 400kV, single-phase, Three-phase set  Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set  Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set  Line/Feeder High Speed Earthing Switches, with removable earthing link 400kV, 50kA, single-phase, three-phase set  Voltage Transformers, 400kV, dual secondary, with earthing link, Single-phase, Three-phase set  Line/Feeder Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set  Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set	10 20 20 20 10 10	Nos Nos Nos Nos Nos Nos Nos Nos Nos	Sub Total 4.1.6	
4.1.6.8.1 4.1.6.9 4.1.7 4.1.7.1 4.1.7.1.1 4.1.7.1.2 4.1.7.1.3 4.1.7.1.4 4.1.7.1.5 4.1.7.1.6	Diesel Generator Set, 250kVA (Including Full Tank)  Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  AC and DC Station Supply Installation  Line/feeder Bay  SF6 Circuit Breaker, 400kV, 4000A, 50kA, Three Pole  Current Transformer Modules, three cores, 400kV, single-phase, Three-phase set  Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set  Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set  Line/Feeder High Speed Earthing Switches, with removable earthing link 400kV, 50kA, single-phase, three-phase set  Voltage Transformers, 400kV, dual secondary, with earthing link, Single-phase, Three-phase set  Line/Feeder Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set  Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set  Bay Local Control Cabinet including (device controls,	10 20 20 20 20 10	Nos Nos Nos Nos Nos Nos Nos	Sub Total 4.1.6	
4.1.6.8.1 4.1.6.9 4.1.7 4.1.7.1.1 4.1.7.1.2 4.1.7.1.3 4.1.7.1.4 4.1.7.1.5 4.1.7.1.6 4.1.7.1.7	Diesel Generator Set, 250kVA (Including Full Tank)  Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  AC and DC Station Supply Installation  Line/feeder Bay  SF6 Circuit Breaker, 400kV, 4000A, 50kA, Three Pole  Current Transformer Modules, three cores, 400kV, single-phase, Three-phase set  Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set  Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set  Line/Feeder High Speed Earthing Switches, with removable earthing link 400kV, 50kA, single-phase, three-phase set  Voltage Transformers, 400kV, dual secondary, with earthing link, Single-phase, Three-phase set  Line/Feeder Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set  Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set  Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set  Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density	10 20 20 20 10 10	Nos Nos Nos Nos Nos Nos Nos Nos Nos	Sub Total 4.1.6	
4.1.6.8.1 4.1.6.9 4.1.7 4.1.7.1 4.1.7.1.1 4.1.7.1.2 4.1.7.1.3 4.1.7.1.4 4.1.7.1.5 4.1.7.1.6 4.1.7.1.7 4.1.7.1.7	Diesel Generator Set, 250kVA (Including Full Tank) Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  AC and DC Station Supply Installation Line/feeder Bay  SF6 Circuit Breaker, 400kV, 4000A, 50kA, Three Pole Current Transformer Modules, three cores, 400kV, single-phase, Three-phase set Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set Line/Feeder High Speed Earthing Switches, with removable earthing link 400kV, 50kA, single-phase, three-phase set Voltage Transformers, 400kV, dual secondary, with earthing link, Single-phase, Three-phase set Line/Feeder Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring)	10 20 20 20 20 10 10 10	Nos Nos Nos Nos Nos Nos Nos Nos Nos Nos	Sub Total 4.1.6	
4.1.6.8.1 4.1.6.9 4.1.7 4.1.7.1.1 4.1.7.1.2 4.1.7.1.3 4.1.7.1.4 4.1.7.1.5 4.1.7.1.6 4.1.7.1.7	Diesel Generator Set, 250kVA (Including Full Tank) Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  AC and DC Station Supply Installation Line/feeder Bay SF6 Circuit Breaker, 400kV, 4000A, 50kA, Three Pole Current Transformer Modules, three cores, 400kV, single-phase, Three-phase set Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set Line/Feeder High Speed Earthing Switches, with removable earthing link 400kV, 50kA, single-phase, three-phase set Voltage Transformers, 400kV, dual secondary, with earthing link, Single-phase, Three-phase set Line/Feeder Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set	10 20 20 20 10 10	Nos Nos Nos Nos Nos Nos Nos Nos Nos	Sub Total 4.1.6	
4.1.6.8.1 4.1.6.9 4.1.7 4.1.7.1 4.1.7.1.1 4.1.7.1.2 4.1.7.1.3 4.1.7.1.4 4.1.7.1.5 4.1.7.1.6 4.1.7.1.7 4.1.7.1.8	Diesel Generator Set, 250kVA (Including Full Tank) Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  AC and DC Station Supply Installation Line/feeder Bay  SF6 Circuit Breaker, 400kV, 4000A, 50kA, Three Pole Current Transformer Modules, three cores, 400kV, single-phase, Three-phase set Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set Line/Feeder High Speed Earthing Switches, with removable earthing link 400kV, 50kA, single-phase, three-phase set Voltage Transformers, 400kV, dual secondary, with earthing link, Single-phase, Three-phase set Line/Feeder Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set	10 20 20 20 10 10 10	Nos Nos Nos Nos Nos Nos Nos Nos Nos Nos	Sub Total 4.1.6	
4.1.6.8.1 4.1.6.9 4.1.7 4.1.7.1 4.1.7.1.1 4.1.7.1.2 4.1.7.1.3 4.1.7.1.4 4.1.7.1.5 4.1.7.1.6 4.1.7.1.7 4.1.7.1.7	Diesel Generator Set, 250kVA (Including Full Tank)  Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  AC and DC Station Supply Installation  Line/feeder Bay  SF6 Circuit Breaker, 400kV, 4000A, 50kA, Three Pole  Current Transformer Modules, three cores, 400kV, single-phase, Three-phase set  Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set  Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set  Line/Feeder High Speed Earthing Switches, with removable earthing link 400kV, 50kA, single-phase, three-phase set  Voltage Transformers, 400kV, dual secondary, with earthing link, Single-phase, Three-phase set  Line/Feeder Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set  Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set  Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set  Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set  Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set  Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set  Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set  Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set  Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set  Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set  Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set  Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set  Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set  Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, 400kV, 50kA, Single-phase, 400kV, 50kA, Single-phase, 400kV, 50kA, Single-phase, 400kV, 5	10 20 20 20 20 10 10 10	Nos Nos Nos Nos Nos Nos Nos Nos Nos Nos	Sub Total 4.1.6	
4.1.6.8.1 4.1.6.9 4.1.7 4.1.7.1.1 4.1.7.1.2 4.1.7.1.3 4.1.7.1.4 4.1.7.1.5 4.1.7.1.6 4.1.7.1.7 4.1.7.1.9 4.1.7.1.10	Diesel Generator Set, 250kVA (Including Full Tank)  Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  AC and DC Station Supply Installation  Line/feeder Bay  SF6 Circuit Breaker, 400kV, 4000A, 50kA, Three Pole  Current Transformer Modules, three cores, 400kV, single-phase, Three-phase set  Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set  Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set  Line/Feeder High Speed Earthing Switches, with removable earthing link 400kV, 50kA, single-phase, three-phase set  Voltage Transformers, 400kV, dual secondary, with earthing link, Single-phase, Three-phase set  Line/Feeder Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set  Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set  Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set  Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring)  Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay)  LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices	10 20 20 20 10 10 10 10	Nos Nos Nos Nos Nos Nos Nos Nos Lot	Sub Total 4.1.6	
4.1.6.8.1 4.1.6.9 4.1.7 4.1.7.1 4.1.7.1.1 4.1.7.1.2 4.1.7.1.3 4.1.7.1.4 4.1.7.1.5 4.1.7.1.6 4.1.7.1.7 4.1.7.1.8	Diesel Generator Set, 250kVA (Including Full Tank)  Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  AC and DC Station Supply Installation  Line/feeder Bay  SF6 Circuit Breaker, 400kV, 4000A, 50kA, Three Pole  Current Transformer Modules, three cores, 400kV, single-phase, Three-phase set  Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set  Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set  Line/Feeder High Speed Earthing Switches, with removable earthing link 400kV, 50kA, single-phase, three-phase set  Voltage Transformers, 400kV, dual secondary, with earthing link, Single-phase, Three-phase set  Line/Feeder Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set  Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set  Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set  Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring)  Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay)  LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices  All metallic structures and supports required for GIS	10 20 20 20 10 10 10	Nos Nos Nos Nos Nos Nos Nos Nos Nos Nos	Sub Total 4.1.6	
4.1.6.8.1 4.1.6.9 4.1.7 4.1.7.1 4.1.7.1.1 4.1.7.1.2 4.1.7.1.3 4.1.7.1.4 4.1.7.1.5 4.1.7.1.6 4.1.7.1.7 4.1.7.1.8 4.1.7.1.9 4.1.7.1.10 4.1.7.1.11	Diesel Generator Set, 250kVA (Including Full Tank) Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  AC and DC Station Supply Installation Line/feeder Bay  SF6 Circuit Breaker, 400kV, 4000A, 50kA, Three Pole Current Transformer Modules, three cores, 400kV, single-phase, Three-phase set Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set Line/Feeder High Speed Earthing Switches, with removable earthing link 400kV, 50kA, single-phase, three-phase set Voltage Transformers, 400kV, dual secondary, with earthing link, Single-phase, Three-phase set Line/Feeder Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, 400kV, 50kA, Single-phas	10 20 20 20 10 10 10 10 10	Nos Nos Nos Nos Nos Nos Nos Lot Lot	Sub Total 4.1.6	
4.1.6.8.1 4.1.6.9 4.1.7 4.1.7.1.1 4.1.7.1.2 4.1.7.1.3 4.1.7.1.4 4.1.7.1.5 4.1.7.1.6 4.1.7.1.7 4.1.7.1.9 4.1.7.1.10	Diesel Generator Set, 250kVA (Including Full Tank)  Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  AC and DC Station Supply Installation  Line/feeder Bay  SF6 Circuit Breaker, 400kV, 4000A, 50kA, Three Pole  Current Transformer Modules, three cores, 400kV, single-phase, Three-phase set  Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set  Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set  Line/Feeder High Speed Earthing Switches, with removable earthing link 400kV, 50kA, single-phase, three-phase set  Voltage Transformers, 400kV, dual secondary, with earthing link, Single-phase, Three-phase set  Line/Feeder Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set  Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set  Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set  Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring)  Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay)  LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices  All metallic structures and supports required for GIS	10 20 20 20 10 10 10 10	Nos Nos Nos Nos Nos Nos Nos Nos Lot	Sub Total 4.1.6	

Item no.	Description	Qty	Unit	Unit Rate in US\$	Amount in US\$
4.1.7.1.14	Gas Insulated bus (GIB) and required supports for GIB run	10	2 Bays	3	(1)x(3)
	whole for Line/Feeder Bay Lot				
<b>4.1.7.2</b> 4.1.7.2.1	Transformer Bay SF6 Circuit Breakers, 400kV, 4000A, 50kA, three-pole,	4	Nos		
4.1./.2.1	with Control Point on Wave Switching Device	4	NOS		
4.1.7.2.4	Current Transformer Modules, Three cores, 400kV,	8	Nos		
	Single-phase, Three-phase set				
4.1.7.2.5	Circuit Breaker Isolating Disconnect Switches, 400kV,	8	Nos		
4.1.7.2.6	4000A, 50kA, single-phase, three-phase set  Circuit Breaker Maintenance Earthing Switches, 400kV,	8	Nos		
4.1.7.2.0	50kA,Single-phase, Three-phase set	0	1105		
4.1.7.2.7	Line/Feeder High Speed Earthing Switches, with removable	4	Nos		
	earthing link 400kV, 50kA, Single-phase, Three-phase set				
41720	V. 14 T	4	Mar		
4.1.7.2.8	Voltage Transformers, 400kV, dual secondary, with earthing link, single-phase, three-phase set	4	Nos		
4.1.7.2.9	Transformer Disconnect Switches, 400kV, 4000A, 50kA,	4	Nos		
	Single-phase, Three-phase set				
4.1.7.2.10	Transformer Maintenance Earthing Switches, 400kV, 50kA,	4	Nos		
4.1.7.2.11	single-phase, three-phase set  Bay Local Control Cabinet including (device controls,	4	Nos		
4.1./.2.11	instrumentation, interlocking, annunciation, gas density	4	NOS		
	monitoring, circuit breaker monitoring)				
4.1.7.2.12	Partial Discharge Monitoring System including monitoring	4	Nos		
	sensors and diagnostic equipment (per bay)				
4.1.7.2.13	LV control and power cable connections from Local	1	Lot		
4.1.7.2.14	Control Cabinet to all GIS equipment/devices All metallic structures and supports required for GIS	1	Lot		
1.11.7.2.11	complete with accessories	•	Lot		
4.1.7.2.15	All walkways, platforms, stairs, ladders and accessories	1	Lot		
	required for access to all GIS devices				
4.1.7.2.17	Gas Insulated bus (GIB) and required supports for GIB run whole for Transformer Bay Lot	4	Bays		
4.1.7.3	Diameter Middle Breaker Bay				
4.1.7.3.1	SF6 Circuit breaker				
a.	Proposed SF6 Diameter middle Circuit Breakers associated with Line Feeder, 400kV, 4000A, 50kA, three-pole	3	Nos		
b.	Proposed SF6 Diameter middle Circuit Breakers associated	4	Nos		
	with Auto Transformer and Line Feeder, 400kV, 4000A,				
	50kA, three-pole, with Control Point on Wave Switching				
4.1.7.3.2	Device Apply 4001V	1.4	Nos		
4.1./.3.2					
1	Current Transformer Modules, Three cores, 400kV, Single-phase. Three-phase set	14	1103		
4.1.7.3.3	Single-phase, Three-phase set	14	Nos		
	Single-phase, Three-phase set  Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase, three-phase set				
4.1.7.3.3	Single-phase, Three-phase set  Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase, three-phase set  Circuit Breaker Maintenance Earthing Switches, 400kV,				
4.1.7.3.4	Single-phase, Three-phase set  Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase, three-phase set  Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA,Single-phase, Three-phase set	14	Nos Nos		
	Single-phase, Three-phase set  Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase, three-phase set  Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA,Single-phase, Three-phase set  Bay Local Control Cabinet including (device controls,	14	Nos		
4.1.7.3.4	Single-phase, Three-phase set  Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase, three-phase set  Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA,Single-phase, Three-phase set	14	Nos Nos		
4.1.7.3.4	Single-phase, Three-phase set  Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase, three-phase set  Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA,Single-phase, Three-phase set  Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring)  Partial Discharge Monitoring System including monitoring	14	Nos Nos		
4.1.7.3.4 4.1.7.3.5 4.1.7.3.6	Single-phase, Three-phase set  Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase, three-phase set  Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA,Single-phase, Three-phase set  Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring)  Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay)	14 14 7	Nos Nos Nos		
4.1.7.3.4	Single-phase, Three-phase set  Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase, three-phase set  Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA,Single-phase, Three-phase set  Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring)  Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay)  LV control and power cable connections from Local	14 14 7	Nos Nos		
4.1.7.3.4 4.1.7.3.5 4.1.7.3.6 4.1.7.3.7	Single-phase, Three-phase set  Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase, three-phase set  Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA,Single-phase, Three-phase set  Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring)  Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay)  LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices	14 14 7 7	Nos Nos Nos Lot		
4.1.7.3.4 4.1.7.3.5 4.1.7.3.6	Single-phase, Three-phase set  Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase, three-phase set  Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA,Single-phase, Three-phase set  Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring)  Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay)  LV control and power cable connections from Local	14 14 7	Nos Nos Nos		
4.1.7.3.4 4.1.7.3.5 4.1.7.3.6 4.1.7.3.7	Single-phase, Three-phase set Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase, three-phase set Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA,Single-phase, Three-phase set Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring) Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay) LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices All metallic structures and supports required for GIS complete with accessories All walkways, platforms, stairs, ladders and accessories	14 14 7 7	Nos Nos Nos Lot		
4.1.7.3.4 4.1.7.3.5 4.1.7.3.6 4.1.7.3.7 4.1.7.3.8 4.1.7.3.9	Single-phase, Three-phase set  Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase, three-phase set  Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA,Single-phase, Three-phase set  Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring)  Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay)  LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices  All metallic structures and supports required for GIS complete with accessories  All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices	14 14 7 7 1	Nos Nos Nos Lot Lot		
4.1.7.3.4 4.1.7.3.5 4.1.7.3.6 4.1.7.3.7 4.1.7.3.8 4.1.7.3.9 4.1.7.4	Single-phase, Three-phase set Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase, three-phase set Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA,Single-phase, Three-phase set Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring) Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay) LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices All metallic structures and supports required for GIS complete with accessories All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices Gas Insulated BUSBAR	14 14 7 7 1 1	Nos Nos Nos Lot Lot Lot		
4.1.7.3.4 4.1.7.3.5 4.1.7.3.6 4.1.7.3.7 4.1.7.3.8 4.1.7.3.9	Single-phase, Three-phase set Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase, three-phase set Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA,Single-phase, Three-phase set Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring) Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay) LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices All metallic structures and supports required for GIS complete with accessories All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices  Gas Insulated BUSBAR  400kV, 3 single phase (isolated), SF6 gas insulated, metal	14 14 7 7 1	Nos Nos Nos Lot Lot		
4.1.7.3.4 4.1.7.3.5 4.1.7.3.6 4.1.7.3.7 4.1.7.3.8 4.1.7.3.9 4.1.7.4	Single-phase, Three-phase set Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase, three-phase set Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA,Single-phase, Three-phase set Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring) Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay) LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices All metallic structures and supports required for GIS complete with accessories All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices Gas Insulated BUSBAR	14 14 7 7 1 1	Nos Nos Nos Lot Lot Lot		
4.1.7.3.4 4.1.7.3.5 4.1.7.3.6 4.1.7.3.7 4.1.7.3.8 4.1.7.3.9 4.1.7.4	Single-phase, Three-phase set Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase, three-phase set Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA,Single-phase, Three-phase set Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring) Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay) LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices All metallic structures and supports required for GIS complete with accessories All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices  Gas Insulated BUSBAR 400kV, 3 single phase (isolated), SF6 gas insulated, metal enclosed 4000A bus bars each enclosed in three individual bus enclosures Voltage Transformers, 400kV, dual secondary, with	14 14 7 7 1 1	Nos Nos Nos Lot Lot Lot		
4.1.7.3.4 4.1.7.3.5 4.1.7.3.6 4.1.7.3.7 4.1.7.3.8 4.1.7.3.9 4.1.7.4 4.1.7.4.1	Single-phase, Three-phase set Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase, three-phase set Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA,Single-phase, Three-phase set Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring) Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay) LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices All metallic structures and supports required for GIS complete with accessories All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices Gas Insulated BUSBAR 400kV, 3 single phase (isolated), SF6 gas insulated, metal enclosed 4000A bus bars each enclosed in three individual bus enclosures Voltage Transformers, 400kV, dual secondary, with earthing link, single-phase, three-phase set	14 14 7 7 1 1 1 2	Nos Nos Nos Lot Lot Lot Lot Nos		
4.1.7.3.4 4.1.7.3.5 4.1.7.3.6 4.1.7.3.7 4.1.7.3.8 4.1.7.3.9 4.1.7.4 4.1.7.4.1	Single-phase, Three-phase set Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase, three-phase set Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA,Single-phase, Three-phase set Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring) Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay) LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices All metallic structures and supports required for GIS complete with accessories All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices Gas Insulated BUSBAR 400kV, 3 single phase (isolated), SF6 gas insulated, metal enclosed 4000A bus bars each enclosed in three individual bus enclosures Voltage Transformers, 400kV, dual secondary, with earthing link, single-phase, three-phase set High Speed Earthing Switches, with removable earthing link	14 7 7 1 1 1 7	Nos Nos Nos Lot Lot Lot Lot		
4.1.7.3.4 4.1.7.3.5 4.1.7.3.6 4.1.7.3.7 4.1.7.3.8 4.1.7.3.9 4.1.7.4 4.1.7.4.1	Single-phase, Three-phase set Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase, three-phase set Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA,Single-phase, Three-phase set Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring) Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay) LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices All metallic structures and supports required for GIS complete with accessories All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices Gas Insulated BUSBAR 400kV, 3 single phase (isolated), SF6 gas insulated, metal enclosed 4000A bus bars each enclosed in three individual bus enclosures Voltage Transformers, 400kV, dual secondary, with earthing link, single-phase, three-phase set	14 14 7 7 1 1 1 2	Nos Nos Nos Lot Lot Lot Lot Nos		

Item no.	Description	Qty	Unit	Unit Rate in US\$	Amount in US\$
4.1.7.4.5	Bus Bar Isolating Disconnect Switches, 400kV, 4000A,	2	2 Nos	3	(1)x(3)
4.1.7.5	50kA, single-phase, three-phase set  Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)	1	Lot		
			•	Sub Total 4.1.7	
4.1.8.1	Complete with control & protection up to GIB sealing en	d for all	Feeder and	d Transformer E	Bays.
4.1.8.1	Installation of Control and Protection panels for 400 kV station as specified in Scope and Employers Requirements including but not limited to:				
4.1.8.1.1	Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel)	21	Nos		
4.1.8.1.2	Line Protection Panel (Note: line protection should include tele protection terminals)	8	Nos		
4.1.8.1.3	Transformer Protection Panel (Auto Trans Bay 1=1no,Auto Trans Bay 2=1no)	6	Nos		
4.1.8.1.4	400kV (Double Bus Bar Protection)	2	Set		
4.1.8.1.5	Stub Bus Differential Protection for Future Bay	6	Bays		
4.1.8.1.6	Miscellaneous Relay and Control Equipment, not included above	1	Lot		
4.1.8.2	Complete set of Control and Protection panels for 220 kV station as specified in Scope and Employers				
4.1.8.2.1	Requirements including but not limited to: Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel)	4	Nos		
4.1.8.2.2	Transformer Protection Panel (Auto Trans Bay 1=1no,Auto Trans Bay 2=1no)	6	Nos		
4.1.8.2.3	Miscellaneous Relay and Control Equipment, not included above	1	Lot		
4.1.8.3	Installation of Control and Protection panels for 33 kV station as specified in Scope and Employers Requirements including but not limited to:				
4.1.8.3.1	Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel)	2	Nos		
4.1.8.3.2	Transformer Protection Panel	2	Nos		
4.1.8.3.3	Miscellaneous Relay and Control Equipment, not included above	1	Lot		
4.1.8.4	Installation of Substation Automation & Metering				
4.1.8.4.1	SAS Operator Station for control of 400/220/33 kV	1	Set		
4.1.8.4.2	Substation Automation System (SAS) for 400 kV System per diameter	7	Set		
4.1.8.4.3	Integration/connection of proposed 3 nos of 220 kV ICT bays with existing 220kV SAS system.	1	Lot		
4.1.8.4.4	Substation Automation System (SAS) for 33kV System per feeder	2	Set		
4.1.8.4.5	Substation Automation System (SAS) for Auxiliary System	1	Set		
4.1.8.4.6	Integration of all 400kV Bays under present scope with the SCADA of SIEMENS (SINAUT Spectrum) at Load Dispatch Centre, Kathmandu including supply of Hardware, Software, accessories etc. complete as per Technical Specification.	1	Lot		
4.1.8.4.7	Telecommunication system for New Butwal	1	Lot		
4.1.8.4.8	Fibre Optic SDH System	1	Lot		
4.1.8.4.9	Phone System	1	Lot		
4.1.8.4.10	Line traps (4 required), complete with hardware and supporting material, and the power line carrier equipment, complete with necessary coupling equipment and cables for 2 sets of PLCC system complete.	1	Lot		
4.1.8.4.11	400 kV Metering	1	Lot		
4.1.8.4.12 4.1.8.4.13	220kV Metering Miscellaneous Relay and Control Equipment, not included	1	Lot Lot		
	above		<u> </u>	Sub Total 4.1.8	
4.1.9	Grounding System				
4.1.9.1	Stranded Bare Copper 240 Sq. mm Grid (Including Fusion and Mechanical Connectors)	1	Lot		
4.1.9.2	Grounding Rods	1	Lot		

Item no.	Description	Qty	Unit	Unit Rate in US\$	Amount in US\$
		1	2	3	(1)x(3)
4.1.9.3	Embedded Grounding System - 400kV GIS (Including Connections to GIS metallic Structures, Supports and Walkways/Platforms)	1	Lot		
4.1.9.4	Embedded Grounding System - Control room	1	Lot		
4.1.9.5	Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)	1	Lot		
				Sub-Total 4.1.9	
4.1.10	Lightning Protection System				•
4.1.10.1	Overhead Galvanized Steel Wire, Including Hardware	1	Lot		
4.1.10.2	Lightening Mast for Protection	1	Lot		
4.1.10.3	Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)	1	Lot		
				Sub-Total 4.1.10	
4.1.11	Firefighting System		_	•	
4.1.11.1	Fire protection/detection for 3 (three) auto transformers	1	Lot		
4.1.11.2	Fire protection/detection for 400kV GIS Building	1	Lot		
4.1.11.3	Fire protection/detection for Control House	1	Lot		
4.1.11.4	Fire protection/detection system for pump house building	1	Lot		
4.1.11.5	Fire protection/detection system for generator diesel tank	1	Lot		
4.1.11.6	Portable fire extinguishers	1	Lot		
4.1.11.7	Clean-agent fire extinguishers		Lot		
4.1.11.8	Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)	1	Lot		
			S	Sub-Total 4.1.11	
4.1.12	HVAC and Ventilation Systems				
4.12.1	400kV GIS Building HVAC and Ventilation Systems	1	Lot		
4.12.2	Control House HVAC and Ventilation Systems	1	Lot		
				Sub-Total 4.1.12	
4.1.13	Accessories and Ancillary Material		1		
4.1.13.1	Junction and marshalling boxes, outdoor	1	Lot		
4.1.13.2	Junction and marshalling boxes, indoor	1	Lot		
4.1.13.3	Outdoor lighting, including lighting fixtures	1	Lot		
4.1.13.4	Indoor lighting, including lighting fixtures	1	Lot		
4.1.13.5	Control Cabinet for outdoor lighting	1	Lot		
4.1.13.6	Rail tracks for movement of power transformers on the reinforced concrete foundations all complete.	1	Lot		
4.1.13.7	Electric Overhead Travelling Crane for installation and removal of GIS Equipment	1	Lot		
4.1.13.8	Visual Monitoring System	1	Lot		
4.1.13.9	Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)	1	Lot		
				Sub-Total 4.1.13	
		Total(	Carried fo	orward to SC-4)	
	Name of Bidder:				
	Signature of Bidder:			<u> </u>	

### Schedule No. 4.2: Breakdown of Earthworks

Item	Description	Qty	Unit	Unit Rate in US\$	Amount in US\$
no.					
4.2.1	Site Clearing, Including Removal of Trees and Stumps	1	Lot		
4.2.2	Design Works (Electrical)	1	Lot		
4.2.3	General Excavation	1	Lot		
4.2.4	Compacted Back Fill	1	Lot		
4.2.5	Uncompact Back Fill	1	Lot		
4.2.6	Surplus Disposal	1	Lot		
4.2.7	Surface Works, Including Compaction/Consolidation	1	Lot		
4.2.8	Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)	1	Lot		
		Total (	Carrie	d forward to SC-4)	
	Name of I	Bidder:			
	Signature of I	Bidder:			

Schedule No. 4.3: Breakdown of Civil Works

Item no.	Schedule No. 4.3 : Breakdown of Description			Unit Rate in US\$	Amount in USS
item no.	Description	Qıy	2	3	Amount in US\$
4.3.1	Design Works (Electrical)			3	(1)2(3)
4.3.1.1	Foundations of 400 kV Gantries	6	Nos		
4.3.1.2	Foundations of 220 kV Gantries	5	Nos		
4.3.1.3	Foundations of 400 kV Capacitor Voltage Transformers	12	Nos		
	& Tank Type Current Transformers				
4.3.1.4	Foundation of 400 kV Surge Arrestor	12	Nos		
4.3.1.5	Foundations of 400 kV Post Type Insulator Bus Support	1	Lot		
4.3.1.6	Foundation, Oil Containment, and Sump Pit	3	Nos		
	For 400/220kV 315 MVA Three Phase Autotransformer				
4.3.1.7	Autotransformer 22kg/m Railway System	3	Nos		
	(22kg/m Steel Rails, Rail Ties, Elastomeric Pad, Screws,				
	Baseplate, and Rail Clamps)				
4.3.1.8	Firewalls Between Auto Transformers	4	Nos		
4.3.1.9	Foundation for 400kV GIB Bus Runs to AIS Equipment	1	Lot		
4.3.1.10	Foundation of 220kV Current Transformer (CT)	9	Nos		
4.3.1.11	Foundation of 220kV Circuit Breaker	3	Nos		
4.3.1.12	Foundation of 220kV Surge Arrestor	9	Nos		
4.3.1.13	Foundation of 220kV Post Type Insulator Bus Support	1	Lot		
4.3.1.14	Foundation of 220kV Disconnecting Switch	1	Lot		
4.3.1.15	Foundation of 220kV Isolator with Earthing Switch	1	Lot		
4.3.1.16	Foundation of 72.5kV Post Type Insulator Bus Support	1	Lot		
4.3.1.17	Foundation of Station Service Transformer	2	Nos		
4.3.1.18	Foundation of 72.5kV Circuit Breaker	2	Nos		
4.3.1.19	Foundation of 72.5kV Current Transformer	6	Nos		
4.3.1.20	Foundation of 72.5kV Disconnecting Switch	1	Lot		
4.3.1.21	Foundation of 33kV Single Phase Switches	1	Lot		
4.3.1.22	Foundation of Diesel Generator Set & Fuel Tank	1	Nos		
4.3.1.23	Foundation of 30kV,10kA Lightning arrester for line bays	6	Nos		
4.3.1.24	Foundations of 30kV,10kA Lightning arrester for 33/0.4kV	6	Nos		
	station service transformers	<u></u>	<u></u>		
4.3.1.25	Foundation for Lightning Mast as required for total protection of	1	Lat		
	equipment	1	Lot		
4.3.1.26	Other necessary works as per Employer's Requirement and	1	Lot		
	Conditions of Contract, if any, not included above (specify)				
				Sub Total 4.3.1	
4.3.2	External Works and Landscaping				
4.3.2.1	Internal Paving	1	Lot		
4.3.2.2	Landscaping, Including Maintenance up to Taking Over	1	Lot		
4.3.2.3	Construction of reinforced concrete trenches/duct banks with	1	Lot		
	manholes for all types of HV/MV power and control cables				
	between switchgear building, substation control building and				
	Autotransformer and all substation equipment as specified in				
	Scope and Employers Requirements.				
4.3.2.4	Anti-weed treatment & stone spreading along with cement	1	Lot		
	concrete layer, Internal drainage system, external drainage system				
	and Sewage handling as defined in the technical specifications.				
4.3.2.5	Superficial storm drainage system to drain water outside	1	Lot		
	substation during heavy rainfall				
4.3.2.6	Parking Areas	1	Lot		
4.3.2.7	Guard House	1	Lot		
4.3.2.8	Substation Perimeter Fence	1	Lot		
4.3.2.9	Rain Water Harvesting as per the Employer's requirements.	1	Lot		
4.3.2.10	Firefighting Pump House and Water Tank	1	Lot		
4.3.2.11	Security Lighting along the Fence and Inside the Perimeter	1	Lot		
4.3.2.12	Retaining wall and River Protection work	1	Lot		
4.3.2.13	Other necessary works as per Employer's Requirement and	1	Lot		
	Conditions of Contract, if any, not included above (specify)	1	1		
	, ,,			Sub Total 4.3.2	
4.3.3	General			222 1000 4002	
4.3.3.1	Mobilization & Demobilization, Site Infrastructure, Temporary	1	Lot		
	Works at site related to site activities.	1			
4222		١.	т -		
4.3.3.2	Final Cleanup (Including Removal of Excess Materials and	1	Lot		
4222	Temporary Works) Demobilization	<del>                                     </del>	-		
4.3.3.3	Supply and Installation of Water Supply System as per the		Ì		
4224	Employer's requirements.	L.			
4.3.3.4	Other necessary works as per Employer's Requirement and	1	Lot		
	Conditions of Contract, if any, not included above (specify)	<u> </u>	<u> </u>		
10:	la company				
4.3.4	Substation Buildings			1	
4.3.4.1	Substation Control Building	1	Lot		
4.3.4.2	400kV GIS Building	1	Lot		
4.3.4.3	Switchyard Panel Room (SPR) of 30 Sq.m for 220 kV bays as per	1	Lot		
	the Employer's requirements.				
4.3.4.4	Other necessary works as per Employer's Requirement and	1	Lot		
	Conditions of Contract, if any, not included above (specify)	1			
				Sub Total 4.3.4	
	т	otal (C	Carrie	d forward to SC-4)	
	I I				
				,	
	Name of Bidder: Signature of Bidder:			,	

Summary of Breakdown for Schedule 4.4 Da	y works
Description	Amount in US\$
1. Sub-Total for Day work: Labor (4.4.1)	
2. Sub-Total for Day work: Materials (4.4.2)	Design Works (Electrical)
3. Sub-Total for Day work: Contractor's Equipment (4.4.3)	
TOTAL (to be carried forward to Schedule 4.0)	
Name of Bidder:	
Signature of Bidder:	

Item no.	Description	Qty	Unit	Unit Rate in US\$	Amount in USS
4.4.1	Supervision and Labor				
4.4.1.1	Design Works (Electrical)	350	h		
4.4.1.2	Foreman	400	h		
4.4.1.3	Surveyor	150	h		
4.4.1.4	Technician	600	h		
4.4.1.5	Skilled laborer	600	h		
4.4.1.6	Semiskilled laborer	600	h		
4.4.1.7	Unskilled laborer	600	h		
4.4.1.8	Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)		specify		
	Total(C	Carrie	d forwa	rd to SC-4.4)	
	Nar	ne of l	Bidder:		
	Signatu	re of	Bidder:		
Note:					

Note: The labor rate should include all cost needed to provide the Labor at required place including all related cost for poviding the labour, ensuring that the labor is qualified for his/her job and can perform the required task professionally.

¥.	Schedule No. 4.4.2 : Breakdown of Day work				
Item no.	Description	Qty	Unit		Amount in US\$
				US\$	
4.4.2.1	Concrete Work	-	<u> </u>		
4.4.2.1.1	Design Works (Electrical)	50	m3		
4.4.2.1.2	Concrete to foundation	150	m3		
4.4.2.1.3	Concrete to superstructure	200	m3		
4.4.2.2	Steel Reinforcement				
4.4.2.2.1	Mild Steel reinforcement, including cutting, bending	10	t		
4.4.2.2.2	High tensile steel reinforcement, including cutting, bending	25	t		
4.4.2.3	Structural Steel				
4.4.2.3.1	Commercial sections, including cutting, welding, bolting	10	t		
4.4.2.4	Excavation Work				
4.4.2.4.1	Excavation in rock (type R), including shoring, backfill, haul	200	m3		
	and disposal				
4.4.2.4.2	Ditto, in soil (type MB and LB)	400	m3		
4.4.2.4.5	Other necessary works as per Employer's Requirement				
	and Conditions of Contract, if any, not included above				
	(specify)				
4.4.2.4.6	Price for Control Point on Wave Switching Device	1	Nos		
	(CPWSD) to be installed on 400kV Breaker supplied as				
	per Schedule-2				
4.4.2.4.7	Price for Pre-Insertion Resistor (PIR) to be installed on	1	Nos		
	400kV Breaker supplied as per schedule-2				
4.4.2.4.8	Price for Stub-Bus Differential Protection for 400kV	1	Nos		
	Future Bay				
	Total(Ca	arried	forwa	rd to SC-4.4)	
	Name of B	idder:			
	Signature of B	idder:		·	·

Note: Quoted Unit Price shall include all the cost required to perform task successfully such as loading, transportation, insurance, unloading, cutting (if required), placing as per intended required task, while insuring the quality of the material and health and safety, storing at proper storage place with security and carrying out works as per Employer's requirement and Conditions of Contract.

Item no.	Description	Nominal	Unit	Basic hourly	Amount
		quantity		rental rate	
		(hours)			
4.4.3	Contractors' Equipment				
4.4.3.1	Design Works (Electrical)	20	h		
4.4.3.2	Concrete Mixer, above to 5 m3/h	20	h		
4.4.3.3	Concrete Pump (Self-Propelled) up to 20 m3/h	40	h		
4.4.3.4	Concrete Pump (Self-Propelled) above to 20 m3/h	40	h		
4.4.3.5	Concrete batch plant, up to 20 m3/h	20	h		
4.4.3.6	Concrete batch plant, above 20 m3/h	20	h		
4.4.3.7	Transit mixer, up to 5 m3	40	h		
4.4.3.8	Transit mixer, above to 5 m3	40	h		
4.4.3.9	Bulldozer, with ripper, up to CAT D8 class	50	h		
4.4.3.10	Bulldozer, with ripper, above to CAT D8 class	50	h		
4.4.3.11	Track loader, up CAT 953 class	30	h		
4.4.3.12	Track loader, above CAT 953 class	50	h		
4.4.3.13	Wheel loader, up to CAT 930 class	50	h		
4.4.3.14	Wheel loader, above CAT 930 class	50	h		
4.4.3.15	Track excavator	100	h		
4.4.3.16	Air Compressor	100	h		
4.4.3.17	Mobile crane, up to 10 t	50	h		
4.4.3.18	Mobile crane, above 10 t, up to 20 t	50	h		
4.4.3.19	Mobile crane, above 20 t	50	h		
4.4.3.20	Lorry, up to 10 t	100	h		
4.4.3.21	Lorry, above 10 t	100	h		
4.4.3.22	Tipper, up to 10 t	100	h		
4.4.3.23	Tipper, above 10 t	100	h		
4.4.3.24	Pick-up	200	h		
4.4.3.25	Diesel generator, up to 100 kW	100	h		
4.4.3.26	Diesel generator, above 100 kW, up to 250 kW	100	h		
4.4.3.27	Diesel generator, above 250 kW	100	h		
4.4.3.28	Welding Set, Including Welding Rods	300	h		
		Total	(Carried	forward to SC-4.4)	
	Nam	e of Bidder:			
	Signatur	re of Bidder:			

The Basic Hourly rates includes all cost that require to run and perform the task, such as Equipment rental with operator, maintenance of vehicle, running responsibility, health and safety protection, petrol, diesel, lubricants, driver, assistance etc. required for carrying the task with the equipment.

	Schedule No. 4.5 : Other Installat	tion S	ervices		
Item no.	Description		Quantity	Unit Rate in US\$	Amount in US\$
				Sub Total 4.5.1	
4.5.1	Design Works (Electrical)				
4.5.1.1	General Mitigation Measures				
4.5.1.1.1	Develop a detailed Environmental, Social, Health, and Safety (ESHS) Management Plan for Contractor's employees.	1	Lot		
4.5.1.1.2	Develop, provide training and enforce a Worker Code of	1	Lot		
45112	Conduct that includes an anti-sexual harassment policy				
4.5.1.1.3	Conduct Employee Induction Training on H&S and environmental/social/cultural sensitivity	1	Lot		
4.5.1.1.4	Implement Community Grievance Redress Plan	1	Lot		
4.5.1.1.5	Personal Protection equipment all complete (Safety Boots, Reflection Jackets, Safety Helmet, Safety Goggles, Safety	1	Lot		
	Mask, Safety earplugs, Safety hand gloves etc.)			Sub Total 4.5.1.1	
4.5.1.2	Physical Environment Mitigation Measures	l		Sub 10tal 4.5.1.1	
4.5.1.2.1	Implement an Erosion and Sediment Control Plan	1	Lot		
4.5.1.2.2	Manage excavated soils	1	Lot		
4.5.1.2.3	Spray disturbed areas with water if substantive off-site fugitive dust impacts occur	1	Lot		
4.5.1.2.4	Provide a pit toilet and bury all organic wastes at tower	1	Lot		
45125	construction sites  Install septic systems/package and proper wastewater disposal	1	T4	1	
4.5.1.2.5	system for workers	1	Lot		
4.5.1.2.6	Provide hazardous material training to concerned staff	1	Lot		
4.5.1.2.7	Stockpile materials for use in controlling spills	1	Lot		
4.5.1.2.8	Provide secondary containment for any fuel or hazardous materials	1	Lot		
4.5.1.2.9	Collect and segregate all waste for reuse, recycle, or disposal	1	Lot		
4.5.1.2.10	Dispose of solid waste at approved waste disposal facilities	1	Lot		
				Sub Total 4.5.1.2	
4.5.1.3	Socio-economic and Cultural Environment Mitigation Measures				
4.5.1.3.1	Implement Workforce Management Plan	1	Lot		
4.5.1.3.2	Implement Worker Access Management Protocol	1	Lot		
4.5.1.3.3	Implement Traffic Management Plan and maintain the damaged roads caused by contractors	1	Lot		
4.5.1.3.4	Develop and Implement Worker Grievance Redress Mechanism	1	Lot		
4.5.1.3.5	Conduct community training on EMF risks	1	Lot		
				Sub Total 4.5.1.3	
4.5.1.4	Gender, Social Inclusion and Counter-TIP Measures				
4.5.1.4.1	Develop and implement Anti-Sexual Harassment Policy,	Lot	1		
4.5.1.4.2	provide orientation to the entire workers  Conduct awareness raising and community meetings to	Lot	1		
4.3.1.4.2	encourage women, socially excluded, historically marginalized, vulnerable groups to apply for jobs	Lot	1		
4.5.1.4.3	Develop and Implement TIP Risk Management Plan	Lot	1		
4.5.1.4.4	Training to the Contractor's employees/staff on Gender and Social Inclusion, prevention on sexual harassment, gender-based violence, child labor and TIP	Lot	1		
4.5.1.4.5	Community TIP risk prevention sensitization and community consultation	Lot	1		
4.5.1.4.6	Community Grievance Redress Plan must have system of	Lot	1		
	Anonymous reporting for TIP suspected cases	<u> </u>		Sub Total 4 5 1 4	
4.5.2	Testing And Commissioning			Sub Total 4.5.1.4	<u> </u>
4.5.2 4.5.2.1	Site Testing and Commissioning of HV AIS Equipment	1	Lot		
4.5.2.2	Site Testing and Commissioning of Try Al3 Equipment Site Testing and Commissioning of Power Autotransformers	1	Lot		
4.5.2.3	Site Testing and Commissioning of 400kV GIS Equipment	1	Lot	1	
4.5.2.4	Site Testing and Commissioning of Protection/Communication and Control (SCADA and SAS) Equipment	1	Lot		
4.5.2.5	Site Testing and Commissioning of Electrical Auxiliary Service	1	Lot		
4.5.2.6	Equipment and Power MV and LV Cables Site Testing and Commissioning of Mechanical Auxiliary	1	Lot		
4.5.2.7	Service Equipment One Month Commercial Operation after Commissioning	1	Lot		
4.5.2.8	End to End Test for all points as specified, including Control,	1	Lot		
4.5.5.0	Protection & Remote End Modification				
4.5.2.9 4.5.2.10	Closed loop test of equipment all complete P.Q (Power Quality), Revenue Energy meter and all remaining	1	Lot Lot		
4.5.2.11	equipment of S/S  Other necessary works as per Employer's Requirement and	1	Lot		
	Conditions of Contract, if any, not included above (specify)				

Item no.	Description	Unit	Quantity	Unit Rate in US\$	Amount in USS
	•			Sub Total 4.5.2	
4.5.3	Training and O&M Assistance				
	Training at Manufacturers Work				
4.5.3.1	Control & Protection, Substation Automation System and Comr	1	Lot		
4.5.3.2	400 kV GIS Equipment and System (Circuit Breaker, Isolator, C	1	Lot		
	Training at Site				
4.5.3.3	Control & Protection (Refer PSR Section 3.18.1 for more details)	1	Lot		
4.5.3.4	Substation Automation System including the integration aspect of SCADA (Refer PSR Section 3.18.1 for more details)	1	Lot		
4.5.3.5	For 400kV Indoor GIS and Outdoor Switchyard Equipment (CT, CVT, Isolator and Circuit Breaker) Operation and Maintenance. (Refer PSR Section 3.18.1 for more details)	1	Lot		
4.5.3.6	Operation and maintenance of Transformers (Refer PSR Section 3.18.1 for more details)	1	Lot		
4.5.3.7	AC/DC auxiliaries and mechanical system (Refer PSR Section 3.18.1 for more details)	1	Lot		
4.5.3.8	Training at site for other systems (provide list)	1	Lot		
		•		Sub Total 4.5.3	
		To	tal(Carried	l forward to SC-4)	
	Name of Bio	dder:			
	Signature of Bio	dder:		·	

	Price Schedule No. 5 : Grand Summary	
Item	Description	Total Price in US\$
No		
5.1	Total Schedule No. 1. Design Services	
5.2	Design Works (Electrical)	
5.3	Total Schedule No. 3. Plant, and Mandatory Spare Parts Supplied from within the Employer's Country	
5.4	Total Schedule No. 4. Installation and Other Services including all related Civil Works (Excluding Summary of Breakdown of Day works) (includes SC-4.1, SC-4.2, SC-4.3 and SC-4.5)	
5.5	TOTAL (to Bid Form - Resulting contract Price after correction if any)	
5.6	Output VAT (if applicable)	
5.7	Total including Output VAT (5.5+5.6)	
5.8	Total of Summary of Breakdown of Day works (to bid form) (from item No.4.6 of SC-4)	
5.9	Grand Total Including Day work for Evaluation and Comparison Purpose (5.5+5.8)	
	Name of Bidder:	
_	Signature of Bidder:	
NT /		

Quoted Unit Price shall include all the cost required to perform task successfully such as all resources required to carry out the Work, personnel, material, equipemnt, loading, transportation, insurance, unloading and storing at proper storage place and carrying out works as per Employer's requirement and Conditions of Contract.

The purpose of price schedules is to identify the Bid Price which will be used to determine progress payment and the rates can be used to determine the price of any variation to scope. The Bid Price if accepted and included in the Contract shall become Contract Price and the Contract price shall not be adjusted (except as stated under Conditions of Contract under Sub-Clause 13.8) in case any quantity varies. The Price quoted under Price Schedule is as per provision of Employer's Requirements and Conditions of Contract.

No		1	US\$		Total Price
		foreign parts	(Local Parts	(CIP)	(EXW)
	1	<u>101 eigh parts</u>		(1) × (2)	(1)~((2)
	- 1	<u> </u>	<u>3</u>	(1) x (2)	(1)x((3)
	me of Bidder:		EXW) TOTAL		

#### Note:

The price of recommended spare parts quoted in Price Schedule No. 6 shall not be considered for evaluation. This is because such spare parts would normally be used after long time durations beyond the MCC Compact end date, and could not be financed from the Compact funds. Still the recommended spare parts may be financed directly by the government. Quoted Unit Price shall include all the cost required to perform task successfully such as loading, transportation, insurance, unloading and storing at proper storage place and carrying out works as per Employer's requirement and Conditions of Contract.

EXW-Works site in Nepal: All Plant and Mandatory Spare Parts Supplied within the country shall be quoted as EXW. The Contractor will also be responsible for other associate charge to bring all goods and equipment to site.

CIP-Works site in Nepal: All Plant and Mandatory Spare Parts Supplied from Abroad shall be quoted as CIP- Works site in Nepal basis. The Contractor will be responsible for custom clearance, insurance and other associate charge to bring all goods and equipment to site.

Quoted Unit Price shall include all the cost required to perform task successfully such as cost of goods, resouces, loading, transportation, insurance, unloading and storing at proper storage place.

# Lot 3 Price Schedule

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Itam Na	Breakdown of Rates and Prices Schedule		ř	Unit Data	Total Duis -
Item No	Description	Qty	Unit	Unit Rate US\$	Total Price US\$
		1		2	(1) x (2)
1.1	Design Works (Electrical)				
	Electromechanical and Electrical Design of New Substation as Speci	fied in Sc	ope and Emp	oloyers Requirem	ents including bu
not limite		1	T - 4	-	
1.1.1	Substation Design (SLD, Layout, Section elevation,	1	Lot		
	P&C, SCADA, 400/220kV Switchgear, Auto Transformers along with connections, Auxiliary System, Control, LV & Fiber Optic Cables				
	along with connections for the same, etc.)				
1.1.2	Thermal Calculations	1	Lot		
1.1.2	(Normal and emergency continuous current ratings of the switchgear	1	Lot		
	and each main current path component)				
1.1.3	Insulation Coordination Study	1	Lot		
1.1.4	Lightning Surge Overvoltage Study	1	Lot		
1.1.5	Transient Recovery Voltage (TRV) Study for GIS	1	Lot		
1.1.6	Grounding Analysis for entire station	1	Lot		
1.1.7	All the requested settings, Protection Coordination, Relay Test Plan,	1	Lot		
	Configuration and Programming on Intelligent Electronic Device				
	(IEDs) such as Relays, RTUs, Automation system, etc. to ensure				
	normal function of integrated system at substation and with other				
	facilities in the entire power system.				
1.1.8	GIS System Earthing and Bonding Study	1	Lot		
1.1.9	Outdoor Switchyard Lighting Study	1	Lot		
1.1.10	Power Cable Ampacity Study	1	Lot		
1.1.11	Rigid Bus Study	1	Lot		
1.1.12	Power Cable Pulling Tension Calculation	1	Lot		
1.1.13	Any other design work not specifically mentioned above but deemed	1	Lot		
	necessary or as required by employer for satisfactory completion of				
	design work.				
				Cub Total 1 1	
1.2	Design Works (Civil)			Sub Total 1.1	
1.2 Complete	Design Works (Civil)  Civil Design of New Substation as Specified in Scope and Employer	s Requirer	nents includi		d to:
	Design Works (Civil) Civil Design of New Substation as Specified in Scope and Employer	s Requirer	nents includ		d to:
Complete		s Requirer	nents includ		l to:
Complete 1.2.1	Civil Design of New Substation as Specified in Scope and Employer  Geotechnical investigation data and drawings including on-site support during excavation and compaction.				l to:
Complete	Civil Design of New Substation as Specified in Scope and Employer  Geotechnical investigation data and drawings including on-site support during excavation and compaction.  Hydrological, Environmental and Social Assessment of New Damauli				l to:
Complete 1.2.1	Civil Design of New Substation as Specified in Scope and Employer  Geotechnical investigation data and drawings including on-site support during excavation and compaction.	1	Lot		1 to:
1.2.1 1.2.2	Civil Design of New Substation as Specified in Scope and Employer  Geotechnical investigation data and drawings including on-site support during excavation and compaction.  Hydrological, Environmental and Social Assessment of New Damauli Substation area as described in the Technical Specification	1	Lot		l to:
Complete 1.2.1	Civil Design of New Substation as Specified in Scope and Employer  Geotechnical investigation data and drawings including on-site support during excavation and compaction.  Hydrological, Environmental and Social Assessment of New Damauli	1	Lot Lot		1 to:
1.2.1 1.2.2	Civil Design of New Substation as Specified in Scope and Employer  Geotechnical investigation data and drawings including on-site support during excavation and compaction.  Hydrological, Environmental and Social Assessment of New Damauli Substation area as described in the Technical Specification  Surveying and benchmarking design and drawings including on-site	1	Lot Lot		l to:
1.2.1 1.2.2 1.2.3	Geotechnical investigation data and drawings including on-site support during excavation and compaction.  Hydrological, Environmental and Social Assessment of New Damauli Substation area as described in the Technical Specification  Surveying and benchmarking design and drawings including on-site support during site preparation.	1 1 1	Lot  Lot  Lot		l to:
1.2.1 1.2.2 1.2.3	Geotechnical investigation data and drawings including on-site support during excavation and compaction.  Hydrological, Environmental and Social Assessment of New Damauli Substation area as described in the Technical Specification  Surveying and benchmarking design and drawings including on-site support during site preparation.  Substation Design in Civil, Structural, Mechanical and Architectural,	1 1 1	Lot  Lot  Lot		l to:
1.2.1 1.2.2 1.2.3	Geotechnical investigation data and drawings including on-site support during excavation and compaction.  Hydrological, Environmental and Social Assessment of New Damauli Substation area as described in the Technical Specification  Surveying and benchmarking design and drawings including on-site support during site preparation.  Substation Design in Civil, Structural, Mechanical and Architectural, such as foundation works, hot dip galvanised steel supporting structures for all outdoor electrical equipment structures, other civil works like boundary wall etc., substation buildings, roads, cable	1 1 1	Lot  Lot  Lot		l to:
1.2.1 1.2.2 1.2.3	Geotechnical investigation data and drawings including on-site support during excavation and compaction.  Hydrological, Environmental and Social Assessment of New Damauli Substation area as described in the Technical Specification  Surveying and benchmarking design and drawings including on-site support during site preparation.  Substation Design in Civil, Structural, Mechanical and Architectural, such as foundation works, hot dip galvanised steel supporting structures for all outdoor electrical equipment structures, other civil works like boundary wall etc., substation buildings, roads, cable trenches, water drainage system, oil containment chamber and sump	1 1 1	Lot  Lot  Lot		l to:
1.2.1 1.2.2 1.2.3	Geotechnical investigation data and drawings including on-site support during excavation and compaction.  Hydrological, Environmental and Social Assessment of New Damauli Substation area as described in the Technical Specification  Surveying and benchmarking design and drawings including on-site support during site preparation.  Substation Design in Civil, Structural, Mechanical and Architectural, such as foundation works, hot dip galvanised steel supporting structures for all outdoor electrical equipment structures, other civil works like boundary wall etc., substation buildings, roads, cable trenches, water drainage system, oil containment chamber and sump pit, fire walls, earthing works, etc. of new substation complete in all	1 1 1	Lot  Lot  Lot		l to:
1.2.1 1.2.2 1.2.3 1.2.4	Geotechnical investigation data and drawings including on-site support during excavation and compaction.  Hydrological, Environmental and Social Assessment of New Damauli Substation area as described in the Technical Specification  Surveying and benchmarking design and drawings including on-site support during site preparation.  Substation Design in Civil, Structural, Mechanical and Architectural, such as foundation works, hot dip galvanised steel supporting structures for all outdoor electrical equipment structures, other civil works like boundary wall etc., substation buildings, roads, cable trenches, water drainage system, oil containment chamber and sump pit, fire walls, earthing works, etc. of new substation complete in all respect.	1 1 1 1	Lot  Lot  Lot		l to:
1.2.1 1.2.2 1.2.3	Geotechnical investigation data and drawings including on-site support during excavation and compaction.  Hydrological, Environmental and Social Assessment of New Damauli Substation area as described in the Technical Specification  Surveying and benchmarking design and drawings including on-site support during site preparation.  Substation Design in Civil, Structural, Mechanical and Architectural, such as foundation works, hot dip galvanised steel supporting structures for all outdoor electrical equipment structures, other civil works like boundary wall etc., substation buildings, roads, cable trenches, water drainage system, oil containment chamber and sump pit, fire walls, earthing works, etc. of new substation complete in all respect.  Design of rail tracks for movement of power transformers on the	1 1 1	Lot  Lot  Lot		l to:
1.2.1 1.2.2 1.2.3 1.2.4	Geotechnical investigation data and drawings including on-site support during excavation and compaction.  Hydrological, Environmental and Social Assessment of New Damauli Substation area as described in the Technical Specification  Surveying and benchmarking design and drawings including on-site support during site preparation.  Substation Design in Civil, Structural, Mechanical and Architectural, such as foundation works, hot dip galvanised steel supporting structures for all outdoor electrical equipment structures, other civil works like boundary wall etc., substation buildings, roads, cable trenches, water drainage system, oil containment chamber and sump pit, fire walls, earthing works, etc. of new substation complete in all respect.  Design of rail tracks for movement of power transformers on the reinforced concrete foundations.	1 1 1 1	Lot Lot Lot Lot Lot		l to:
1.2.1 1.2.2 1.2.3 1.2.4	Geotechnical investigation data and drawings including on-site support during excavation and compaction.  Hydrological, Environmental and Social Assessment of New Damauli Substation area as described in the Technical Specification  Surveying and benchmarking design and drawings including on-site support during site preparation.  Substation Design in Civil, Structural, Mechanical and Architectural, such as foundation works, hot dip galvanised steel supporting structures for all outdoor electrical equipment structures, other civil works like boundary wall etc., substation buildings, roads, cable trenches, water drainage system, oil containment chamber and sump pit, fire walls, earthing works, etc. of new substation complete in all respect.  Design of rail tracks for movement of power transformers on the reinforced concrete foundations.  Any Architectural-Related Calculations and Analysis	1 1 1 1	Lot Lot Lot Lot Lot Lot		l to:
1.2.1 1.2.2 1.2.3 1.2.4 1.2.5 1.2.6 1.2.7	Geotechnical investigation data and drawings including on-site support during excavation and compaction.  Hydrological, Environmental and Social Assessment of New Damauli Substation area as described in the Technical Specification  Surveying and benchmarking design and drawings including on-site support during site preparation.  Substation Design in Civil, Structural, Mechanical and Architectural, such as foundation works, hot dip galvanised steel supporting structures for all outdoor electrical equipment structures, other civil works like boundary wall etc., substation buildings, roads, cable trenches, water drainage system, oil containment chamber and sump pit, fire walls, earthing works, etc. of new substation complete in all respect.  Design of rail tracks for movement of power transformers on the reinforced concrete foundations.  Any Architectural-Related Calculations and Analysis  Any Mechanical-Related Calculations and Analysis	1 1 1 1	Lot Lot Lot Lot Lot Lot Lot Lot		l to:
1.2.1 1.2.2 1.2.3 1.2.4	Geotechnical investigation data and drawings including on-site support during excavation and compaction.  Hydrological, Environmental and Social Assessment of New Damauli Substation area as described in the Technical Specification  Surveying and benchmarking design and drawings including on-site support during site preparation.  Substation Design in Civil, Structural, Mechanical and Architectural, such as foundation works, hot dip galvanised steel supporting structures for all outdoor electrical equipment structures, other civil works like boundary wall etc., substation buildings, roads, cable trenches, water drainage system, oil containment chamber and sump pit, fire walls, earthing works, etc. of new substation complete in all respect.  Design of rail tracks for movement of power transformers on the reinforced concrete foundations.  Any Architectural-Related Calculations and Analysis  Any Mechanical-Related Calculations and Analysis  Any other design work not specifically mentioned above but deemed	1 1 1 1	Lot Lot Lot Lot Lot Lot		l to:
1.2.1 1.2.2 1.2.3 1.2.4 1.2.5 1.2.6 1.2.7	Geotechnical investigation data and drawings including on-site support during excavation and compaction.  Hydrological, Environmental and Social Assessment of New Damauli Substation area as described in the Technical Specification  Surveying and benchmarking design and drawings including on-site support during site preparation.  Substation Design in Civil, Structural, Mechanical and Architectural, such as foundation works, hot dip galvanised steel supporting structures for all outdoor electrical equipment structures, other civil works like boundary wall etc., substation buildings, roads, cable trenches, water drainage system, oil containment chamber and sump pit, fire walls, earthing works, etc. of new substation complete in all respect.  Design of rail tracks for movement of power transformers on the reinforced concrete foundations.  Any Architectural-Related Calculations and Analysis  Any Mechanical-Related Calculations and Analysis  Any other design work not specifically mentioned above but deemed necessary or as required by employer for satisfactory completion of	1 1 1 1	Lot Lot Lot Lot Lot Lot Lot Lot		l to:
1.2.1 1.2.2 1.2.3 1.2.4 1.2.5 1.2.6 1.2.7	Geotechnical investigation data and drawings including on-site support during excavation and compaction.  Hydrological, Environmental and Social Assessment of New Damauli Substation area as described in the Technical Specification  Surveying and benchmarking design and drawings including on-site support during site preparation.  Substation Design in Civil, Structural, Mechanical and Architectural, such as foundation works, hot dip galvanised steel supporting structures for all outdoor electrical equipment structures, other civil works like boundary wall etc., substation buildings, roads, cable trenches, water drainage system, oil containment chamber and sump pit, fire walls, earthing works, etc. of new substation complete in all respect.  Design of rail tracks for movement of power transformers on the reinforced concrete foundations.  Any Architectural-Related Calculations and Analysis  Any Mechanical-Related Calculations and Analysis  Any other design work not specifically mentioned above but deemed	1 1 1 1	Lot Lot Lot Lot Lot Lot Lot Lot	ng but not limited	l to:
1.2.1 1.2.2 1.2.3 1.2.4 1.2.5 1.2.6 1.2.7	Geotechnical investigation data and drawings including on-site support during excavation and compaction.  Hydrological, Environmental and Social Assessment of New Damauli Substation area as described in the Technical Specification  Surveying and benchmarking design and drawings including on-site support during site preparation.  Substation Design in Civil, Structural, Mechanical and Architectural, such as foundation works, hot dip galvanised steel supporting structures for all outdoor electrical equipment structures, other civil works like boundary wall etc., substation buildings, roads, cable trenches, water drainage system, oil containment chamber and sump pit, fire walls, earthing works, etc. of new substation complete in all respect.  Design of rail tracks for movement of power transformers on the reinforced concrete foundations.  Any Architectural-Related Calculations and Analysis  Any Mechanical-Related Calculations and Analysis  Any other design work not specifically mentioned above but deemed necessary or as required by employer for satisfactory completion of design work.	1 1 1 1 1	Lot Lot Lot Lot Lot Lot Lot Lot Lot Lot	ng but not limited	l to:
1.2.1 1.2.2 1.2.3 1.2.4 1.2.5 1.2.6 1.2.7	Geotechnical investigation data and drawings including on-site support during excavation and compaction.  Hydrological, Environmental and Social Assessment of New Damauli Substation area as described in the Technical Specification  Surveying and benchmarking design and drawings including on-site support during site preparation.  Substation Design in Civil, Structural, Mechanical and Architectural, such as foundation works, hot dip galvanised steel supporting structures for all outdoor electrical equipment structures, other civil works like boundary wall etc., substation buildings, roads, cable trenches, water drainage system, oil containment chamber and sump pit, fire walls, earthing works, etc. of new substation complete in all respect.  Design of rail tracks for movement of power transformers on the reinforced concrete foundations.  Any Architectural-Related Calculations and Analysis  Any Mechanical-Related Calculations and Analysis  Any other design work not specifically mentioned above but deemed necessary or as required by employer for satisfactory completion of design work.	1 1 1 1 1	Lot Lot Lot Lot Lot Lot Lot Lot Lot Lot	ng but not limited	l to:

Item No.	Description	Code (a)	Qty.	Unit	Unit Rate (b) US\$ DDP plus all related cost as defined in foot note	Total Price (c) US\$	
			1	2	3	(1) x (3)	
2.1	AIS HV and MV Equipment						
2.1.1	167 MVA, $(400/\sqrt{3}/220/\sqrt{3}/33)$ kV, Single Phase Auto-		7				
	Transformer with OLTC, RTCC Facility, Surge protection			Nos			
	arrangement (AIS) for HV, IV and LV side and with Bushing						
2.1.2	CT complete with all accessories as specified		10				
2.1.2	Capacitive Voltage Transformer (CVT) 400kV, Single Phase 2 Windings, Secondary Voltage 110V, Accuracy 0.2, Min Burden	ı	12	Nos			
2.1.2	50VA, Application Metering		10				
2.1.3	Current Transformer (CT), 400kV, Single Phase, Live Tank Type, 3 Core, 2000-1000-500/1A, Class 0.2, Rated Output 15VA		12	Nos			
2.1.4	Current Transformer (CT), 72.5kV, Single Phase 2 Windings		6	Nos			
2.1.5	400kV Surge Arrester (SA), Zinc Oxide 366 kV Rated Voltage, 20kA, 12kJ/kV		12	Nos			
2.1.6	Station Service Transformer, 630 kVA, 33/0.4kV		2	Nos			
2.1.7	30kV,10kA Lightning arrester for 33kV line bays		6	Nos			
2.1.8	30kV,10kA Lightning arrester for 33/0.4kV station service transformers		6	Nos			
2.1.9	72.5kV Double Break Isolator, Single Phase		1	Lot			
2.1.10	72.5kV Circuit Breaker, Three Phase, 50Hz.		2	Nos			
2.1.11	400kV Bus Support Post Insulator		1	Lot			
2.1.12	72.5kV Bus Support Post Insulator		1	Lot			
2.1.13	Suspension/Tension Insulator Strings, Including Hardware		1	Lot			
2.1.14	Other necessary works as per Employer's Requirement and		1	Lot			
	Conditions of Contract, if any, not included above (specify)				Sub Total 2.1		
2.2	Hot Dip Galvanized Steel				Sub Total 2.1		
2.2.1	Gantry Column for 400 kV Incoming Line		5	Nos			
2.2.2	Gantry Girder for 400 kV Incoming Line		4	Nos			
2.2.3	Support Structure for 400 kV Current Transformer		12	Nos			
2.2.4	Support Structure for 400 kV Capacitive Voltage Transformer		12	Nos			
2.2.5	Support Structure for 400 kV Surge Arrester		12	Nos			
2.2.6	Support Structure for 400 kV Bus Support		1	Lot			
2.2.7	Support Structure for 72.5 kV Current Transformer		6	Nos			
2.2.8	Support Structure for 72.5 kV Bus Support or Pot Head		1	Lot			
2.2.9	Support Structure for 72.5 kV Single Switch Stand		1	Lot			
2.2.10	Support Structure for 30kV Lightning Arrestor		12	Nos.			
2.2.11 2.2.12	Structures for Lightning Mast and other Lighting structures		1	Lot			
2.2.12	Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)		1	Lot	Sub Tradal 2.2		
2.3	Bus Bar and Overhead Connections				Sub Total 2.2		
2.3.1	5" AL. Tubular Bus Bar		1				
	141.30mm Outer Diameter, 9.53mm Thickness		1	Lot			
2.3.2	Bus bar Connectors and Hardware		1				
	(Tube to NEMA Pads, Bus Supports, etc)			Lot			
2.3.3	Bare Cond. ACSR		1	I ot			
	54 Strand 3.53mm AL 7 Strands 3.53mm Steel			Lot			
2.3.4	Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)		1	Lot			
	Sub Total 2.3						
2.4	LV, MV, HV Control and Power Cable	1			1		
2.4.1	LV Control Cables		1	Lot			
2.4.2	LV Power Cables	1	1	Lot			
2.4.3	Cable Installation Accessories (Cable Gland, Labels Terminal Strips, etc)		1	Lot			

Item No.	Description	Code (a)	Qty.	Unit	Unit Rate (b) USS DDP plus all related cost as defined in foot note	Total Price (c ) US\$
			1	2	3	(1) x (3)
2.4.4	XLPE Power Cable, 33kV (from LV side of the Auto		1	Lot		
	transformer to 33kV line bay arrangement)			Lot		
2.4.5	33kV Cable Pothead		1	Lot		
2.4.6	220 kV HV Cable		1400	mtrs		
	220 kV Termination Bushing Outdoor for Auto connection		7	Nos.		
	220 kV GIS termination		7	Nos.		
2.4.7	Cable carriers (trays, conduits, ducts) for routing the HV & LV power, control, instrumentation and communication interface cables.		1	Lot		
2.4.8	Power Cable for Filter Plant (Transformer) 3.5CX240 sqmm (Armoured, PVC Insulated) with suitable termination		1	Lot		
2.4.0	arrangement all complete					
2.4.9	Other necessary works as per Employer's Requirement and		1	Lot		
	Conditions of Contract, if any, not included above (specify)	<u> </u>	<u> </u>		Cub Tatal 2.4	
2.5	AC AND DC STATION SUPPLY				Sub Total 2.4	
2.5.1	400V AC Main Switch Board	I				
2.5.1.1	400V AC Main Switch Board 400V Switchgear with Automation Controls,		3			
2.5.1.2	1000A CB and 2 Current Transformers 400V Switchgear with Automation Controls,		1	Nos		
2.3.1.2	630A CB and 2 Current Transformers		1	Nos		
2.5.1.3	Distribution panel Bus-A, 400V, 3 Phase, 1000A, 20kA for 1Sec.		1	Nos		
	(5) 400A Breakers, (1) Potential Transformer					
2.5.1.4	Distribution panel Bus-B,		1			
	400V, 3 Phase, 1000A, 20kA for 1Sec.			Nos		
	(6) 400A Breakers, (1) Potential Transformer					
2.5.2	400V AC Main Lighting Board					
2.5.2.1	100KVA Lighting Transformer		2	Nos		
2.5.2.2	Distribution panel, 400V, 3 Phase, 4 Wire, 20kA, 1Sec. Bus-A (4) 63A, (1) 400A Breakers, Bus-B (4) 63A, (1) 400A Breakers, Bus-C (5) 63A TIE A-B 400A breaker, TIE B-C 400A Breaker		1	Nos		
2.5.3	400V AC Emergency Lighting Distribution Board					
2.5.3.1	100KVA Lighting Transformer		1	Nos		
2.5.3.2	Distribution panel Bus-A 400V, 3 Phase, 4 Wire, 20kA, 1Sec. (5) 63A, (1) 400A 4 Pole Breakers, TIE A-B 100A breaker		1	Nos		
2.5.3.3	Distribution panel Bus-B 400V, 3 Phase, 4 Wire, 20kA, 1Sec. (3) 63A, (1) 400A 4 Pole Breakers,		1	Nos		
2.5.4	400V AC Distribution Board					
2.5.4.1	400V Switchgear with Automation Controls, 1000A CB and 2 Current Transformers		1	Nos		
2.5.4.2	400/110V, 50VA, Potential Transformer		3	Nos		
2.5.4.3	400/1A Current Transformer, Class 5P20		1	Nos		
2.5.4.4	400V Switchgear with Automation Controls, 630A with 2 Current Transformers		1	Nos		
2.5.4.5	400v Distribution panel Bus-A (1) 400A, (4) 100A, (8) 63A, (2) 32A 4 Pole Breakers, (14) 63A, (8) 32A 2 Pole Breakers TIE A-B 400A Breaker		1	Nos		
2.5.4.6	400v Distribution panel Bus-B (1) 400A, (3) 100A, (8) 63A 4 Pole Breakers (14) 63A, (5) 32A 4 Pole Breakers		1	Nos		
2.5.5	400V AC AMF Panel	1	1			

Item No.	Description	Code (a)	Qty.	Unit	Unit Rate (b) USS DDP plus all related cost as defined in foot	Total Price (c ) US\$
			1	2	note 3	(1) x (3)
2.5.5.1	400/1A Current Transformer, Class 1		3	Nos	3	(1) x (3)
2.5.5.2	400/1A Current Transformer, Class 5P20		1	Nos		
2.5.6	DC Chargers and Batteries		1	INOS		
2.5.6.1	220V Battery Charger (Float/Boost)		3	Nos		
2.5.6.2	48V Battery charger (Float/Boast)		3	Nos		
	250A Throw over Switch, Interlock					
2.5.6.3	·		6	Nos		
2.5.6.4	Battery, 220Vdc, 108 Minimum Cells		2	Nos		
2.5.6.5	Battery, 48Vdc, 24 Minimum Cells		2	Nos		
2.5.7	DC Distribution Boards		_	3.7		
2.5.7.1	Distribution panel, 220V, 400A, 4kA for 1 Sec. 50 positions		2	Nos		
2.5.7.2	Distribution panel, 48V, 400A, 4kA for 1 Sec. 50 positions		2	Nos		
2.5.7.3	DC Fuse Box, 220Vdc		1	Lot		
2.5.7.4	DC Fuse Box, 48Vdc		1	Lot		
2.5.8	Other Equipment					
2.5.8.1	Diesel Generator Set, 250kVA (Including Fuel Tank)		1	Nos		
2.5.9	Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)		1	Lot		
					Sub Total 2.5	
2.6	400 kV Gas Insulated Switchgear (1-1/2 breaker arrangement	ıt)				
2.6.1	Line/feeder Bay					
2.6.1.1	SF6 Circuit Breaker, 400kV, 4000A, 50kA, Three Pole		8	Nos		
2.6.1.2	Current Transformer Modules, three cores, 400kV, single- phase, Three-phase set		16	Nos		
2.6.1.3	Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set		16	Nos		
2.6.1.4	Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA,		16	Nos		
2.6.1.5	Single-phase, Three-phase set Line/Feeder High Speed Earthing Switches, with removable		8	Nos		
2.6.1.6	earthing link 400kV, 50kA, single-phase, three-phase set Voltage Transformers, 400kV, dual secondary, with isolating		8	Nos		
	link, Single-phase, Three-phase set					
2.6.1.7	Line/Feeder Disconnect Switches, 400kV, 4000A, 50kA, Single-		8	Nos		
2610	phase, Three-phase set					
2.6.1.8	Line/Feeder Maintenance Earthing Switches, 400kV, 50kA,		8	Nos		
2610	Single-phase, Three-phase set					
2.6.1.9	Bay Local Control Cabinet including (device controls,		8	NI		
	instrumentation, interlocking, annunciation, gas density			Nos		
2 ( 1 12	monitoring, circuit breaker monitoring)					
2.6.1.10	Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay)		8	Nos		
2.6.1.11	LV control and power cable connections from Local Control		1	Lot		
2.6.1.12	Cabinet to all GIS equipment/devices  All metallic structures and supports required for GIS complete		1	Lot		
2.6.1.13	with accessories All walkways, platforms, stairs, ladders and accessories required		1	Lot		
2.6.1.14	for access to all GIS devices Gas Insulated bus (GIB) and required supports for GIB run		8			
	whole for Line/feeder Bay Lot			Bays		
<b>2.6.2</b> 2.6.2.1	Transformer bay SF6 Circuit Breakers, 400kV, 4000A, 50kA, three-pole, with		4			
	Control Point on Wave Switching Device			Nos		
2.6.2.1.2	Current Transformer Modules, Three cores, 400kV, Single-phase, Three-phase set		8	Nos		
2.6.2.1.3	Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase, three-phase set		8	Nos		
2.6.2.1.4	Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set		8	Nos		

Item No.	Description	Code	Qty.		Unit Rate (b)	Total Price (c)
	•	(a)		Unit	US\$ DDP plus all related cost as defined in foot note	US\$
			1	2	3	(1) x (3)
2.6.2.1.5	Transformer Bay High Speed Earthing Switches, with removable earthing link 400kV, 50kA,Three-pole group operated		3	Nos		
2.6.2.1.6	Voltage Transformers, 400kV, dual secondary, with isolating link, single-phase, three-phase set		3	Nos		
2.6.2.1.7	Transformer Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set		6	Nos		
2.6.2.1.8	Transformer Maintenance Earthing Switches, 400kV, 50kA, single-phase, three-phase set		6	Nos		
2.6.2.1.9	Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring)		4	Nos		
2.6.2.1.10	Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay)		4	Nos		
2.6.2.1.11	LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices		1	Lot		
2.6.2.1.12	All metallic structures and supports required for GIS complete with accessories		1	Lot		
2.6.2.1.13	All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices	l	1	Lot		
2.6.2.1.14	Isolating & Earthing Switches, 400kV, 4000A, 50kA Single phase, and Auxiliary Gas Insulated Bus (GIB) for Spare Transformer, GIS to AIS Bushing termination, jumpers, required CT, Al. tube, metering, control and protection as required all complete. 33kV isolators, 33kV cables, jumpers as required all complete		3	Nos		
2.6.2.1.15	Gas Insulated bus (GIB) and required supports for GIB run whole for Transformer Bay Lot		4	Bays		
2.6.3	Diameter Middle Breaker Bay-400 kV					
2.6.3.1	Proposed SF6 Diameter middle Circuit Breakers associated with Line Feeder, 400kV, 4000A, 50kA, three-pole		3	Nos		
2.6.3.2	Proposed SF6 Diameter middle Circuit Breakers associated with Auto Transformer and Line Feeder, 400kV, 4000A, 50kA, three- pole, with Control Point on Wave Switching Device		2	Nos		
2.6.3.3	Current Transformer Modules, Three cores, 400kV, Three- phase set		10	Nos		
2.6.3.4	Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase, three-phase set		10	Nos		
2.6.3.5	Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set		10	Nos		
2.6.3.6	Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring)		5	Nos		
2.6.3.7	Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay)		5	Nos		
2.6.3.8	LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices		1	Lot		
2.6.3.9	All metallic structures and supports required for GIS complete with accessories		1	Lot		
2.6.3.10	All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices		1	Lot		
2.6.4	Gas Insulated BUSBAR					
2.6.4.1	400kV, 3 single phase (isolated), SF6 gas insulated, metal enclosed 4000A bus bars each enclosed in three individual bus enclosures		6	Diameter		

Item No.	Description	Code	Qty.		Unit Rate (b)	Total Price (c)
	•	(a)			US\$	US\$
				Unit	DDP plus all related cost as defined in foot	
			1	2	note 3	(1) x (3)
2.6.4.2	Voltage Transformers, 400kV, dual secondary, single-phase, three-phase set		2	Nos		( ) ( )
2.6.4.3	Main Bus Bar High Speed Earthing Switches, with removable earthing link 400kV, 50kA, Single-phase, Three-phase set		2	Nos		
2.6.4.4	Isolating Disconnect Switches, 400kV, 4000A, 50kA, single- phase, three-phase set		2	Nos		
2.6.4.5	Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set		2	Nos		
2.6.5	Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)		1	Lot		
					Sub Total 2.6	
2.7	Complete with control & protection up to GIB sealing end for					
2.7.1	Complete set of Control and Protection panels for 400 kV stational but not limited to:	ation as	s speci	fied in So	cope and Employers Req	uirements
2.7.1.1	Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel)		17	Nos		
2.7.1.2	Line Protection Panel (Note: line protection should include tele protection terminals)		8	Nos		
2.7.1.3	Transformer Protection Panel		4	Nos		
2.7.1.4	400kV (Duplicate Bus Bar Protection)		2	Set		
2.7.1.3	Miscellaneous Relay and Control Equipment, not included above		1	Lot		
2.7.2	Complete set of Control and Protection panels for 33 kV stat	tion as	specifi	ied in Sco	ppe and Employers Requ	irements including
	but not limited to:					
2.7.2.1	Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel)		2	Nos		
2.7.2.2	Transformer Protection Panel		2	Nos		
2.7.2.3	Miscellaneous Relay and Control Equipment, not included above		1	Lot		
2.7.3	Substation Automation & Metering			-		
2.7.3.1	SAS Operator Station for control of 400/220/33 kV Substation Automation System (SAS) for 400 kV System per		6	Set		
2.7.3.2	diameter			Set		
2.7.3.4	Substation Automation System (SAS) for 33kV System per feeder		2	Set		
2.7.3.5	Substation Automation System (SAS) for Auxiliary System		1	Set		
2.7.3.6	Integration of all 400kV Bays under present scope with the SCADA of SIEMENS (SINAUT Spectrum) at Load Dispatch Centre, Kathmandu including supply of Hardware, Software, accessories etc. complete as per Technical Specification.		1	Lot		
2.7.3.7	Telecommunication system of New Damauli		1	Lot		
2.7.3.8	Fibre Optic SDH System		1	Lot		
2.7.3.9	Phone System		1	Lot		
2.7.3.10	400 kV Metering		1	Lot		
2.7.3.11	Miscellaneous Relay and Control Equipment, not included above		1	Lot		
2.0	Ia v a				Sub Total 2.7	
2.8 2.8.1	Grounding System Stranded Bare Copper 240 Sq. mm** Grid	ı	1	1		
	(Including Fusion and Mechanical Connectors)		1	Lot		
2.8.2	Grounding Rods		1	Lot		
2.8.3	Embedded Grounding System - 400kV and 220kV GIS (Including Connections to GIS metallic Structures, Supports and	i	1	Lot		
2 9 4	Walkways/Platforms)		1	т.,		
2.8.4	Embedded Grounding System - Control room		1	Lot		

Item No.	Description	Code (a)	Qty.	Unit	Unit Rate (b) US\$ DDP plus all related cost as defined in foot note	Total Price (c) US\$
			1	2	3	(1) x (3)
2.8.5	Other necessary works as per Employer's Requirement and		1	Lot		
	Conditions of Contract, if any, not included above (specify)				C 1 T 4 12 0	
2.9	Lightning Protection System				Sub Total 2.8	
2.9.1	Overhead Galvanized Steel Wire, Including Hardware		1	Lot		
2.9.2	Lightening Mast for Protection		1	Lot		
2.9.3	Other necessary works as per Employer's Requirement and		1			
	Conditions of Contract, if any, not included above (specify)			Lot		
					Sub Total 2.9	
2.10	Firefighting System					
2.10.1	Fire protection/detection for 7 (Seven) auto transformers		1	Lot		
2.10.2	Fire protection/detection for 400kV GIS Building		1	Lot		
2.10.3	Fire protection/detection for Control House Fire protection/detection system for pump house building		1	Lot Lot		
2.10.4	Fire protection/detection system for generator diesel tank		1	Lot		
2.10.6	Portable fire extinguishers		1	Lot		
2.10.7	Clean-agent fire extinguishers		1	Lot		
2.10.8	Other necessary works as per Employer's Requirement and		1			
	Conditions of Contract, if any, not included above (specify)			Lot		
					Sub Total 2.10	
2.11	HVAC And Ventilation Systems				1	
2.11.1	400kV GIS Building HVAC and Ventilation Systems		1	Lot		
2.11.2	Control House HVAC and Ventilation Systems		1	Lot	C 1 T 4 12 11	
2.12	Accessories and Ancillary Material				Sub Total 2.11	
2.12.1	Junction and marshalling boxes, outdoor		1	Lot		
2.12.2	Junction and marshalling boxes, indoor		1	Lot		
2.12.3	Outdoor lighting, including lighting fixtures		1	Lot		
2.12.4	Indoor lighting, including lighting fixtures		1	Lot		
2.12.5	Control Cabinet for outdoor lighting		1	Lot		
2.12.6	Electric Overhead Travelling Crane for installation and removal		1	Lot		
	of GIS Equipment			Lot		
2.12.7	Rail tracks for movement of power transformers on the		1	Lot		
2.12.9	reinforced concrete foundations all complete.		1	T		
2.12.8	Visual Monitoring System Other necessary works as per Employer's Requirement and		1	Lot		
2.12.)	Conditions of Contract, if any, not included above (specify)		1	Lot		
	(-F)				Sub Total 2.12	
2.13	Mandatory Maintenance, Repair tools and Testing Instrume	ents			•	
2.13.1	GIS Equipment					
2.13.1.1	400kV GIS SF6 leakage detector, analyzer and processing unit		1	Lot		
	all complete					
2.13.1.2	400kV GIS Wrenches and tools		1	Lot		
2.13.1.3 2.13.1.4	400kV GIS Pressure gauge 400kV GIS Gas sampling and moisture meter		1	Nos		
2.13.1.4	400kV GIS Gas sampling and moisture meter 400kV GIS Micro-Ohmmeter		1	Nos Nos		
2.13.1.6	400kV GIS ivicio-Onlinetei 400kV GIS Circuit-breaker, timing tester	1	1	Nos		
2.13.1.7	400kV GIS Laptop computer with switcialized software		1			
	for GIS setting and monitoring	L		Nos		
2.13.1.8	Complete set of SF6 gas service cart mounted on a trailer for mobile application. SF6 gas refilling cart equipped with 1 SF6 gas cylinder and the necessary instruments and adapters for easy and quick gas refilling in case of losses	,	1	Lot		
2.13.1.9	HV Test Bushing for GIS	1	1	Lot		
2.13.1.10	Online Partial Discharge Monitoring System		1	Nos		
2.13.2	Auto Transformer & Station Service Transformer	1		2.00		

2.13.2.1   Oil-treatment unit 6000ph along with suitable size and quantity of connection arrangement (MCCB (240.300 Amp)) terminal lags etc.) all complete (autotransformer)   1   Nos	Item No.	Description	Code (a)		Unit	Unit Rate (b) US\$ DDP plus all related cost as defined in foot note	Total Price (c ) US\$
				1	2	3	(1) x (3)
213.24   Megger, electronic, 5 kV   1   Nos	2.13.2.1	of connection arrangement (MCCB (240-300 Amp),terminal		1	Nos		
2.13.2.5   Wreenches and tools	2.13.2.2	Oil dielectric tester		1	Nos		
2.13.3   Omplete set of Control and Protection panels for Substation   Control and Protection panels for Substation   Configuration & diagnostics   Configuration & diagnostics   Configuration & diagnostics   Configuration & diagnostics   Configuration & diagnostics   Configuration & diagnostics   Configuration & diagnostics   Configuration & diagnostics   Configuration & diagnostics   Configuration & diagnostics   Configuration & diagnostics   Configuration & diagnostics   Configuration & diagnostics   Configuration & diagnostics   Configuration & diagnostics   Configuration & Conf				1	Nos		
Complete set of Control and Protection panels for Substation   Substation   Substation   Lot	2.13.2.4			1	Nos		
Substation	2.13.2.5			1	Lot		
2.13.3.2   Test Equipment & tools for SAS SYSTEM for measuring, configuration & diagnostics.							
Lot   Sub Total 2.13	2.13.3.1			1	Lot		
2.14.1   Mandatory Spare Parts	2.13.3.2			1	Lot		
2.14.1.1   HV Equinment						Sub Total 2.13	
2.14.1.1   Unit of 400kV surge arrester, complete with grading ring, terminals and surge counter   Nos		• •				<u> </u>	
terminals and surge counter				1			
terminals and surge counter		terminals and surge counter			Nos		
2.14.1.3   Capacitive voltage transformer, 400kV	2.14.1.2			1	Nos		
2.14.1.4   Current transformer, 400kV	2 14 1 2	Č		1	Nos		
2.14.1.5   Current transformer, 72.5kV							
2.14.2.1   Auto Transformer   2.14.2.1   Complete set of gaskets with grease, for cover, manholes, hand holes, and pipping fittings.   Nos				_			
2.14.2.1   Complete set of gaskets with grease, for cover, manholes, hand holes, and pipping fittings.   2		,			1105		
Lot of LV control and protective components, minimum one unit of each type of components used		Complete set of gaskets with grease, for cover, manholes,		2	Nos		
unit of each type of components used	2.14.2.2			2			
2.14.2.4   Bushings, one complete unit of each type used, with accessories   2   Nos		unit of each type of components used		_	Nos		
2.14.2.5   Current transformer, one unit of each type	2.14.2.3	Pressure relief device, complete with accessories		2	Nos		
2.14.2.6   Oil-circulating pump with motor, complete with accessories   2   Nos	2.14.2.4	Bushings, one complete unit of each type used, with accessories		2	Nos		
2.14.2.7   Cooling fan, complete with motor   2   Nos	2.14.2.5	Current transformer, one unit of each type		2	Nos		
2.14.2.8   Buchholz relay, complete   2   Nos	2.14.2.6	Oil-circulating pump with motor, complete with accessories		2	Nos		
2.14.2.9   One instrument of each type used (temperature, oil level, pressure vent, etc.)   2   Nos     2.14.2.10   One valve of each type used   2   Nos     2.14.2.11   Insulating oil, 5% of the volume used   2   Nos     2.14.2.12   Silica gel, quantity for one load   2   Nos     2.14.2.13   Tap changer diverter switch, spare contacts and transition resistance   2   Nos     2.14.2.14   Tap changer selector switch spare contacts   2   Nos     2.14.2.15   Rolls of Kraft insulating paper   2   Nos     2.14.2.16   Additional spare parts as per Chapter 3: Auto Transformer   Specification of Part 2: Employer's Requirements, Section V-B1 (Technical Specifications).   Lot     2.14.3.1   All Bushing with metal parts (each voltage rating) for 630 KVA   Transformer     2.14.3.2   Oil Temperature Indicator with sensing device   1   Lot     2.14.3.3   Tap Changer Contacts   1   Nos     2.14.3.4   Buchhloz Relay   1   Nos     2.14.3.5   Explosion vent diaphragm   1   Nos     2.14.3.6   Set of valve (each type)   1   Lot     2.14.3.7   3-Phase 11 kV Horn Gap Fuse   1   Lot     2.14.3.4   Other necessary works as per Employer's Requirement and   1   Lot     2.14.4   Other necessary works as per Employer's Requirement and   1   Lot     2.14.4   Other necessary works as per Employer's Requirement and   1   Lot     2.14.4   Other necessary works as per Employer's Requirement and   1   Lot     2.14.4   Other necessary works as per Employer's Requirement and   1   Lot     2.14.5   Canada	2.14.2.7	Cooling fan, complete with motor		2	Nos		
Deciding the content of the conten				2	Nos		
2.14.2.11   Insulating oil, 5% of the volume used   2   Nos	2.14.2.9			2	Nos		
2.14.2.12         Silica gel, quantity for one load         2         Nos           2.14.2.13         Tap changer diverter switch, spare contacts and transition resistance         2         Nos           2.14.2.14         Tap changer selector switch spare contacts         2         Nos           2.14.2.15         Rolls of Kraft insulating paper         2         Nos           2.14.2.16         Additional spare parts as per Chapter 3: Auto Transformer Specification of Part 2: Employer's Requirements, Section V-B1 (Technical Specifications).         1         Lot           2.14.3         630kVA Transformer         1         Nos           2.14.3.1         All Bushing with metal parts (each voltage rating) for 630 KVA Transformer         1         Nos           2.14.3.2         Oil Temperature Indicator with sensing device         1         Lot           2.14.3.3         Tap Changer Contacts         1         Lot           2.14.3.4         Buchhloz Relay         1         Nos           2.14.3.5         Explosion vent diaphragm         1         Nos           2.14.3.6         Set of valve (each type)         1         Lot           2.14.3.7         3-Phase 11 kV Horn Gap Fuse         1         Lot           2.14.4         Other necessary works as per Employer's Requirement and         1				2	Nos		
2.14.2.13 Tap changer diverter switch, spare contacts and transition resistance  2.14.2.14 Tap changer selector switch spare contacts  2.14.2.15 Rolls of Kraft insulating paper  2.14.2.16 Additional spare parts as per Chapter 3: Auto Transformer Specification of Part 2: Employer's Requirements, Section V-B1 (Technical Specifications).  2.14.3 G30kVA Transformer  2.14.3.1 All Bushing with metal parts (each voltage rating) for 630 KVA Transformer Oil Transformer  2.14.3.2 Oil Temperature Indicator with sensing device  2.14.3.3 Tap Changer Contacts  2.14.3.4 Buchhloz Relay  1 Nos  2.14.3.5 Explosion vent diaphragm  1 Nos  2.14.3.6 Set of valve (each type)  1 Lot  2.14.3.7 3-Phase 11 kV Horn Gap Fuse  2.14.4 Other necessary works as per Employer's Requirement and	2.14.2.11			2			
Tesistance					Nos		
2.14.2.15       Rolls of Kraft insulating paper       2       Nos         2.14.2.16       Additional spare parts as per Chapter 3: Auto Transformer Specification of Part 2: Employer's Requirements, Section V-B1 (Technical Specifications).       1         2.14.3       630kVA Transformer       1         2.14.3.1       All Bushing with metal parts (each voltage rating) for 630 KVA Transformer       1         2.14.3.2       Oil Temperature Indicator with sensing device       1         2.14.3.3       Tap Changer Contacts       1         2.14.3.4       Buchhloz Relay       1         2.14.3.5       Explosion vent diaphragm       1         2.14.3.6       Set of valve (each type)       1         2.14.3.7       3-Phase 11 kV Horn Gap Fuse       1         2.14.4       Other necessary works as per Employer's Requirement and       1	2.14.2.13			2	Nos		
2.14.2.16       Additional spare parts as per Chapter 3: Auto Transformer Specification of Part 2: Employer's Requirements, Section V-B1 (Technical Specifications).       1         2.14.3       630kVA Transformer         2.14.3.1       All Bushing with metal parts (each voltage rating) for 630 KVA Transformer       1         2.14.3.2       Oil Temperature Indicator with sensing device       1         2.14.3.3       Tap Changer Contacts       1         2.14.3.4       Buchhloz Relay       1         2.14.3.5       Explosion vent diaphragm       1         2.14.3.6       Set of valve (each type)       1         2.14.3.7       3-Phase 11 kV Horn Gap Fuse       1         2.14.4       Other necessary works as per Employer's Requirement and       1				2	Nos		
Lot   Lot	2.14.2.15			2	Nos		
2.14.3.1       All Bushing with metal parts (each voltage rating) for 630 KVA Transformer       1       Nos         2.14.3.2       Oil Temperature Indicator with sensing device       1       Lot         2.14.3.3       Tap Changer Contacts       1       Lot         2.14.3.4       Buchhloz Relay       1       Nos         2.14.3.5       Explosion vent diaphragm       1       Nos         2.14.3.6       Set of valve (each type)       1       Lot         2.14.3.7       3-Phase 11 kV Horn Gap Fuse       1       Lot         2.14.4       Other necessary works as per Employer's Requirement and       1       Lot	2.14.2.16	Specification of Part 2: Employer's Requirements, Section V-		1	Lot		
2.14.3.1       All Bushing with metal parts (each voltage rating) for 630 KVA	2.14.3	630kVA Transformer					
2.14.3.2       Oil Temperature Indicator with sensing device       1       Lot         2.14.3.3       Tap Changer Contacts       1       Lot         2.14.3.4       Buchhloz Relay       1       Nos         2.14.3.5       Explosion vent diaphragm       1       Nos         2.14.3.6       Set of valve (each type)       1       Lot         2.14.3.7       3-Phase 11 kV Horn Gap Fuse       1       Lot         2.14.4       Other necessary works as per Employer's Requirement and       1       Lot		All Bushing with metal parts (each voltage rating) for 630 KVA		1	Nos		
2.14.3.3       Tap Changer Contacts       1       Lot         2.14.3.4       Buchhloz Relay       1       Nos         2.14.3.5       Explosion vent diaphragm       1       Nos         2.14.3.6       Set of valve (each type)       1       Lot         2.14.3.7       3-Phase 11 kV Horn Gap Fuse       1       Lot         2.14.4       Other necessary works as per Employer's Requirement and       1       Lot	2.14.3.2			1	Lot		
2.14.3.4       Buchhloz Relay       1 Nos         2.14.3.5       Explosion vent diaphragm       1 Nos         2.14.3.6       Set of valve (each type)       1 Lot         2.14.3.7       3-Phase 11 kV Horn Gap Fuse       1 Lot         2.14.4       Other necessary works as per Employer's Requirement and       1 Lot							
2.14.3.5         Explosion vent diaphragm         1         Nos           2.14.3.6         Set of valve (each type)         1         Lot           2.14.3.7         3-Phase 11 kV Horn Gap Fuse         1         Lot           2.14.4         Other necessary works as per Employer's Requirement and         1         Lot		1 0					
2.14.3.6       Set of valve (each type)       1       Lot         2.14.3.7       3-Phase 11 kV Horn Gap Fuse       1       Lot         2.14.4       Other necessary works as per Employer's Requirement and       1       Lot		·					
2.14.3.7         3-Phase 11 kV Horn Gap Fuse         1         Lot           2.14.4         Other necessary works as per Employer's Requirement and         1         Lot				1			
				1			
	2.14.4	Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)		1	Lot		

2.15   Spare Parts for AC and DC Station Supply	Item No.	Description	Code (a)	Qty.	Unit	Unit Rate (b) US\$ DDP plus all related cost as defined in foot note	Total Price (c) US\$
215.1.1   LV circuit breaker, complete, with CT's and protection devices				1	2	3	(1) x (3)
2.15.1.1   LV circuit breaker, complete, with CT's and protection devices   1			1	1 1		1	
1.5.1.2   Outgoing thermomagnetic breakers - one unit of each type used   2   Nos							
15.1.3   Metering - one instrument of each type used   1   Nos   One unit of each type used   1   Nos   One unit of each type used   1   Nos   One unit of each type used   1   Nos   One unit of each type used   1   Nos   One complete controller including sensors   1   Nos   One complete controller including sensors   1   Nos   One complete controller including sensors   1   Nos   One complete controller including sensors   1   Nos   One complete controller including sensors   1   Nos   One complete controller including sensors   2   Nos   One controller one unit of each type used   2   Nos   One unit of each type used   2   Nos   One unit of each type used   2   Nos   One unit of each type used   1   Nos   One unit of each type used   1   Nos   One unit of each type used   1   Nos   One unit of each type used   1   Nos   One unit of each type used   1   Nos   One unit of each type used   1   Nos   One unit of each type used   2   Nos   One unit of unit		•		1	Nos		
2.15.1.5   Protection (other than included in LV breaker)	2.15.1.2	Outgoing thermomagnetic breakers - one unit of each type used		2	Nos		
One unit of each type used	2.15.1.3			1	Nos		
2.15.1.5   Automatic Transfer Switch	2.15.1.4			1	Nos		
One complete controller including sensors	2.15.1.5			1	NI		
Auxiliary relays, contactors, fisses, terminals, etc.		One complete controller including sensors			Nos		
Austhary relays, contactors, tuses, terminals, etc.	2.15.1.6			1	Nos		
2		Auxiliary relays, contactors, fuses, terminals, etc.			INOS		
One unit of each type used							
Once unit of each type used	2.15.2.1			2	Nos		
2.15.2.3   Protection (other than included in LV breaker)		*1					
One unit of each type used					Nos		
One unit of each type used	2.15.2.3			1	Nos		
Auxiliary relays, contactors, fuses, terminals, etc.	21521						
2.15.3   Spare for Diesel Generator Set	2.15.2.4			1	Nos		
2.15.3.1   Replaceable elements for air filter	2.15.2						
2.15.3.2   Replaceable elements for oil filter				1	NI		
2.15.3.3   Replaceable elements for fuel filter		1					
2.15.3.4   Complete set of injectors		*		_			
2.15.3.5   Fuel injector pump				_			
2.15.3.6   Oil pump		1 5					
2.15.3.7   Intake valves							
2.15.3.8   Seats for intake valves							
2.15.3.9   Exhaust valves				_			
2.15.3.10   Set for exhaust valves   1   Nos				_			
2.15.3.11       Disconnect switch, with grounding blades, 245 kV, 3 Ø       1       Nos         2.15.3.12       Set of pistons       1       Nos         2.15.3.13       Set of complete bearings of the engine       1       Nos         2.15.3.14       Set of all gaskets needed for the engine       1       Nos         2.15.3.15       Set of thermostats       1       Nos         2.15.3.16       Set of bearings for the alternator       1       Nos         2.15.3.17       Set of control cards, at least one unit of each type used       1       Nos         2.15.3.18       Diodes and thyristors of each type used       3       Nos         2.15.3.19       Lamp, one unit of each type used       10       Nos         2.15.3.20       Auxiliary relay, one unit of each type used       1       Nos         2.15.3.21       Multifunction metering instrument       1       Nos         2.15.3.22       Voltage and speed regulator component and actuator       1       Nos         2.15.3.23       Controller components       1       Nos         2.15.3.24       Instrument, detectors       1       Nos         2.15.4.1       One unit of battery used in 220 V DC system       2       Nos         2.15.4.2       Loose parts fo				_			
2.15.3.12   Set of pistons   1				_			
2.15.3.13   Set of complete bearings of the engine   1							
2.15.3.14       Set of all gaskets needed for the engine       1       Nos         2.15.3.15       Set of thermostats       1       Nos         2.15.3.16       Set of bearings for the alternator       1       Nos         2.15.3.17       Set of control cards, at least one unit of each type used       1       Nos         2.15.3.18       Diodes and thyristors of each type used       3       Nos         2.15.3.19       Lamp, one unit of each type used       10       Nos         2.15.3.20       Auxiliary relay, one unit of each type used       1       Nos         2.15.3.21       Multifunction metering instrument       1       Nos         2.15.3.22       Voltage and speed regulator component and actuator       1       Nos         2.15.3.23       Controller components       1       Nos         2.15.4       Instrument, detectors       1       Nos         2.15.4       Spare for Batteries       2       Nos         2.15.4.1       One unit of battery used in 220 V DC system       2       Nos         2.15.4.2       Loose parts for 220 V DC - connection elements, cables, links, etc.       1       Nos         2.15.4.3       One unit of battery used in 48 Vdc system       1       Nos         2.15.4.4       L				1	Nos		
2.15.3.16         Set of bearings for the alternator         1         Nos           2.15.3.17         Set of control cards, at least one unit of each type used         1         Nos           2.15.3.18         Diodes and thyristors of each type used         3         Nos           2.15.3.19         Lamp, one unit of each type used         10         Nos           2.15.3.20         Auxiliary relay, one unit of each type used         1         Nos           2.15.3.21         Multifunction metering instrument         1         Nos           2.15.3.22         Voltage and speed regulator component and actuator         1         Nos           2.15.3.23         Controller components         1         Nos           2.15.3.24         Instrument, detectors         1         Nos           2.15.4.         Spare for Batteries         2         Nos           2.15.4.1         One unit of battery used in 220 V DC system         2         Nos           2.15.4.2         Loose parts for 220 V DC - connection elements, cables, links, etc.         1         Nos           2.15.4.3         One unit of battery used in 48 Vdc system         1         Nos           2.15.4.4         Loose parts for 48 V DC - connection elements, cables, links, etc.         1         Nos           2.15.5	2.15.3.14			1	Nos		
2.15.3.17         Set of control cards, at least one unit of each type used         1         Nos           2.15.3.18         Diodes and thyristors of each type used         3         Nos           2.15.3.19         Lamp, one unit of each type used         10         Nos           2.15.3.20         Auxiliary relay, one unit of each type used         1         Nos           2.15.3.21         Multifunction metering instrument         1         Nos           2.15.3.22         Voltage and speed regulator component and actuator         1         Nos           2.15.3.23         Controller components         1         Nos           2.15.3.24         Instrument, detectors         1         Nos           2.15.4         Spare for Batteries         1         Nos           2.15.4.1         One unit of battery used in 220 V DC system         2         Nos           2.15.4.2         Loose parts for 220 V DC - connection elements, cables, links, etc.         1         Nos           2.15.4.3         One unit of battery used in 48 Vdc system         1         Nos           2.15.4.4         Loose parts for 48 V DC - connection elements, cables, links, etc.         1         Nos           2.15.5.1         Spare for Battery Chargers         2         Nos           2.15.5.2	2.15.3.15	Set of thermostats		1	Nos		
2.15.3.18       Diodes and thyristors of each type used       3       Nos         2.15.3.19       Lamp, one unit of each type used       10       Nos         2.15.3.20       Auxiliary relay, one unit of each type used       1       Nos         2.15.3.21       Multifunction metering instrument       1       Nos         2.15.3.22       Voltage and speed regulator component and actuator       1       Nos         2.15.3.23       Controller components       1       Nos         2.15.4       Spare for Batteries       1       Nos         2.15.4.1       One unit of battery used in 220 V DC system       2       Nos         2.15.4.2       Loose parts for 220 V DC - connection elements, cables, links, etc.       1       Nos         2.15.4.3       One unit of battery used in 48 Vdc system       1       Nos         2.15.4.4       Loose parts for 48 V DC - connection elements, cables, links, etc.       1       Nos         2.15.5.1       Spare for Battery Chargers       1       Nos         2.15.5.2       Controller, complete bridge of thyristors assembled on a cooling base       1       Nos         2.15.5.3       Loose elements - auxiliary relays, breakers, metering       1       Nos	2.15.3.16	Set of bearings for the alternator		1	Nos		
2.15.3.19       Lamp, one unit of each type used       10       Nos         2.15.3.20       Auxiliary relay, one unit of each type used       1       Nos         2.15.3.21       Multifunction metering instrument       1       Nos         2.15.3.22       Voltage and speed regulator component and actuator       1       Nos         2.15.3.23       Controller components       1       Nos         2.15.3.24       Instrument, detectors       1       Nos         2.15.4       Spare for Batteries       2       Nos         2.15.4.1       One unit of battery used in 220 V DC system       2       Nos         2.15.4.2       Loose parts for 220 V DC - connection elements, cables, links, etc.       1       Nos         2.15.4.3       One unit of battery used in 48 Vdc system       1       Nos         2.15.4.4       Loose parts for 48 V DC - connection elements, cables, links, etc.       1       Nos         2.15.5.5       Spare for Battery Chargers       1       Nos         2.15.5.1       Complete bridge of thyristors assembled on a cooling base       1       Nos         2.15.5.3       Loose elements - auxiliary relays, breakers, metering       1       Nos	2.15.3.17	Set of control cards, at least one unit of each type used		1	Nos		
2.15.3.20 Auxiliary relay, one unit of each type used  2.15.3.21 Multifunction metering instrument  2.15.3.22 Voltage and speed regulator component and actuator  2.15.3.23 Controller components  1 Nos  2.15.3.24 Instrument, detectors  1 Nos  2.15.4 Spare for Batteries  2.15.4.1 One unit of battery used in 220 V DC system  2.15.4.2 Loose parts for 220 V DC - connection elements, cables, links, etc.  2.15.4.3 One unit of battery used in 48 Vdc system  1 Nos  2.15.4.4 Loose parts for 48 V DC - connection elements, cables, links, etc.  2.15.5 Spare for Battery Chargers  2.15.5.1 Complete bridge of thyristors assembled on a cooling base  2.15.5.2 Controller, complete including each type of card used  1 Nos  1 Nos  1 Nos  1 Nos  1 Nos  1 Nos  1 Nos  2.15.5.3 Loose elements - auxiliary relays, breakers, metering		Diodes and thyristors of each type used		3	Nos		
2.15.3.21 Multifunction metering instrument 2.15.3.22 Voltage and speed regulator component and actuator 1 Nos 2.15.3.23 Controller components 1 Nos 2.15.3.24 Instrument, detectors 1 Nos 2.15.4 Spare for Batteries 2.15.4.1 One unit of battery used in 220 V DC system 2.15.4.2 Loose parts for 220 V DC - connection elements, cables, links, etc. 2.15.4.3 One unit of battery used in 48 Vdc system 1 Nos 2.15.4.4 Loose parts for 48 V DC - connection elements, cables, links, etc. 2.15.5 Spare for Battery Chargers 2.15.5.1 Complete bridge of thyristors assembled on a cooling base 2.15.5.2 Controller, complete including each type of card used 2.15.5.3 Loose elements - auxiliary relays, breakers, metering 1 Nos				10			
2.15.3.22     Voltage and speed regulator component and actuator     1     Nos       2.15.3.23     Controller components     1     Nos       2.15.3.24     Instrument, detectors     1     Nos       2.15.4     Spare for Batteries     2     Nos       2.15.4.1     One unit of battery used in 220 V DC system     2     Nos       2.15.4.2     Loose parts for 220 V DC - connection elements, cables, links, etc.     1     Nos       2.15.4.3     One unit of battery used in 48 Vdc system     1     Nos       2.15.4.4     Loose parts for 48 V DC - connection elements, cables, links, etc.     1     Nos       2.15.5.5     Spare for Battery Chargers     1     Nos       2.15.5.1     Complete bridge of thyristors assembled on a cooling base     1     Nos       2.15.5.2     Controller, complete including each type of card used     1     Nos       2.15.5.3     Loose elements - auxiliary relays, breakers, metering     1     Nos		7 7. 71		_			
2.15.3.23       Controller components       1       Nos         2.15.3.24       Instrument, detectors       1       Nos         2.15.4       Spare for Batteries       2       Nos         2.15.4.1       One unit of battery used in 220 V DC system       2       Nos         2.15.4.2       Loose parts for 220 V DC - connection elements, cables, links, etc.       1       Nos         2.15.4.3       One unit of battery used in 48 Vdc system       1       Nos         2.15.4.4       Loose parts for 48 V DC - connection elements, cables, links, etc.       1       Nos         2.15.5.       Spare for Battery Chargers       1       Nos         2.15.5.1       Complete bridge of thyristors assembled on a cooling base       1       Nos         2.15.5.2       Controller, complete including each type of card used       1       Nos         2.15.5.3       Loose elements - auxiliary relays, breakers, metering       1       Nos							
2.15.3.24       Instrument, detectors       1       Nos         2.15.4       Spare for Batteries       2       Nos         2.15.4.1       One unit of battery used in 220 V DC system       2       Nos         2.15.4.2       Loose parts for 220 V DC - connection elements, cables, links, etc.       1       Nos         2.15.4.3       One unit of battery used in 48 Vdc system       1       Nos         2.15.4.4       Loose parts for 48 V DC - connection elements, cables, links, etc.       1       Nos         2.15.5.5       Spare for Battery Chargers       1       Nos         2.15.5.1       Complete bridge of thyristors assembled on a cooling base       1       Nos         2.15.5.2       Controller, complete including each type of card used       1       Nos         2.15.5.3       Loose elements - auxiliary relays, breakers, metering       1       Nos			<u> </u>	_			
2.15.4     Spare for Batteries       2.15.4.1     One unit of battery used in 220 V DC system     2 Nos       2.15.4.2     Loose parts for 220 V DC - connection elements, cables, links, etc.     1 Nos       2.15.4.3     One unit of battery used in 48 Vdc system     1 Nos       2.15.4.4     Loose parts for 48 V DC - connection elements, cables, links, etc.     1 Nos       2.15.5.5     Spare for Battery Chargers     1 Nos       2.15.5.1     Complete bridge of thyristors assembled on a cooling base     1 Nos       2.15.5.2     Controller, complete including each type of card used     1 Nos       2.15.5.3     Loose elements - auxiliary relays, breakers, metering     1 Nos		*	<u> </u>	-			
2.15.4.1     One unit of battery used in 220 V DC system     2     Nos       2.15.4.2     Loose parts for 220 V DC - connection elements, cables, links, etc.     1     Nos       2.15.4.3     One unit of battery used in 48 Vdc system     1     Nos       2.15.4.4     Loose parts for 48 V DC - connection elements, cables, links, etc.     1     Nos       2.15.5     Spare for Battery Chargers     1     Nos       2.15.5.1     Complete bridge of thyristors assembled on a cooling base     1     Nos       2.15.5.2     Controller, complete including each type of card used     1     Nos       2.15.5.3     Loose elements - auxiliary relays, breakers, metering     1     Nos		· · · · · · · · · · · · · · · · · · ·	<u> </u>	1	Nos		
2.15.4.2 Loose parts for 220 V DC - connection elements, cables, links, etc.  2.15.4.3 One unit of battery used in 48 Vdc system  2.15.4.4 Loose parts for 48 V DC - connection elements, cables, links, etc.  2.15.5 Spare for Battery Chargers  2.15.5.1 Complete bridge of thyristors assembled on a cooling base  2.15.5.2 Controller, complete including each type of card used  2.15.5.3 Loose elements - auxiliary relays, breakers, metering			1	_	NI		
etc.  2.15.4.3 One unit of battery used in 48 Vdc system  1 Nos  2.15.4.4 Loose parts for 48 V DC - connection elements, cables, links, etc.  2.15.5 Spare for Battery Chargers  2.15.5.1 Complete bridge of thyristors assembled on a cooling base  2.15.5.2 Controller, complete including each type of card used  2.15.5.3 Loose elements - auxiliary relays, breakers, metering  1 Nos		· ·			INOS		
2.15.4.4     Loose parts for 48 V DC - connection elements, cables, links, etc.     1     Nos       2.15.5     Spare for Battery Chargers     2.15.5.1     Complete bridge of thyristors assembled on a cooling base     1     Nos       2.15.5.2     Controller, complete including each type of card used     1     Nos       2.15.5.3     Loose elements - auxiliary relays, breakers, metering     1     Nos		etc.					
etc.  2.15.5 Spare for Battery Chargers  2.15.5.1 Complete bridge of thyristors assembled on a cooling base  2.15.5.2 Controller, complete including each type of card used  2.15.5.3 Loose elements - auxiliary relays, breakers, metering  1 Nos				_	Nos		
2.15.5.1     Complete bridge of thyristors assembled on a cooling base     1     Nos       2.15.5.2     Controller, complete including each type of card used     1     Nos       2.15.5.3     Loose elements - auxiliary relays, breakers, metering     1     Nos	2.15.4.4	*		1	Nos		
2.15.5.1     Complete bridge of thyristors assembled on a cooling base     1     Nos       2.15.5.2     Controller, complete including each type of card used     1     Nos       2.15.5.3     Loose elements - auxiliary relays, breakers, metering     1     Nos	2.15.5	Spare for Battery Chargers					
2.15.5.2 Controller, complete including each type of card used 1 Nos 2.15.5.3 Loose elements - auxiliary relays, breakers, metering 1 Nos				1	Nos		
2.15.5.3 Loose elements - auxiliary relays, breakers, metering				1	Nos		
	2.15.5.3	Loose elements - auxiliary relays, breakers, metering instruments, control switches, fuses, etc.		1	Nos		

Item No.	Description	Code (a)	Qty.	Unit	Unit Rate (b) US\$ DDP plus all related cost as defined in foot note	Total Price (c) US\$
2.15.6	Other necessary works as per Employer's Requirement and		1	2	3	(1) x (3)
2.15.6	Conditions of Contract, if any, not included above (specify)		1	Lot		
	Conditions of Contract, if any, not included above (specify)				Sub Total 2.15	
2.16	Mandatory spare parts - Miscellaneous material				Sub 10tal 2.13	
2.16.1	Junction and marshalling boxed, outdoor, one of each type used		1			
2.1.0.1	and the management of the control of			Nos		
2.16.2	Junction and marshalling boxed, indoor, one of each type used		1	Nos		
2.16.3	Outdoor lighting fixture, one unit of each type used		3	Nos		
2.16.3	Post-type insulator, one unit of each type used		2	Nos		
2.16.5	Suspension insulator, 5% of the total used		1	Nos		
2.16.6	Bus bar (rigid and strain) hardware, including, connectors,		1	1105		
2.10.0	terminals, separator, corona rings, 5% of each type used,			Nos		
2.16.7	minimum one unit		1			
2.16.7	Grounding conductors, 5% of the installed conductors (stranded copper conductor, rectangular-shape copper bar and grounding rod)		1	Nos		
2.16.8	Fusion connection material, including molds, welding powder and installation tools, quantity required to make 5% of the total executed connections		1	Nos		
2.16.9	Mechanical connectors for grounding, 5% of the total executed		1	Nos		
	connections			INUS		
2.16.10	Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)		1	Lot		
					Sub Total 2.16	
2.17	Mandatory spare parts for 400kV					
2.17.1	Spare Gas					
2.17.1.1	SF6 bottles required to fill the two largest volume compartments		1	Lot		
2.17.2	Circuit Breakers, 4000 A, 50kA					
2.17.2.1	Circuit breaker, complete pole assembly		1	Lot		
2.17.2.2	Complete sets of main contacts		1	Lot		
2.17.2.3	Complete sets of arcing contacts		2	Lot		
2.17.2.4	Operating mechanism, complete		1	Lot		
2.17.2.5	Operating mechanism motor		2	Lot		
2.17.2.6	Closing coils		4	Lot		
2.17.2.7	Tripping coils		4	Lot		
2.17.3	Disconnect-Switches, 4000 A		1			
2.17.3.1 2.17.3.2	Disconnect-Switch, complete pole Complete set of contacts		1	Nos		
2.17.3.2	Operating mechanism, complete		2	Nos Nos		
2.17.3.4	Operating mechanism motor		2	Nos		
2.17.4	Maintenance Earthing Switches			1105		
2.17.4.1	Earthing-Switch, complete pole		1	Nos		
2.17.4.2	Complete set of contacts		2	Nos		
2.17.4.3	Operating mechanism, complete		1	Nos		
2.17.4.4	Operating mechanism motor		2	Nos		
2.17.5	High-speed earthing Switches					
2.17.5.1	High-speed earthing switch, complete pole		1	Nos		
2.17.5.2	Complete set of contacts		2	Nos		
2.17.5.3	Operating mechanism, complete		1	Nos		
2.17.5.4	Operating mechanism motor		2	Nos		
2.17.6	Other Equipment					
2.17.6.1	Voltage transformer, 400 kV, complete with disconnecting and earthing switch		3	Nos		
			_	N.T.		
2.17.6.2	Current transformer, metering core, loose part		6	Nos	<u> </u>	
2.17.6.2 2.17.6.3	Current transformer, metering core, loose part Current transformer, protection core, loose part		6	Nos		

Item No.	Description	Code (a)	Qty.	Unit	Unit Rate (b) US\$ DDP plus all related	Total Price (c ) US\$
				Ont	cost as defined in foot note	
			1	2	3	(1) x (3)
2.17.7.1	One Bay Local Control Cabinet complete, wired,		1	т.		
	with all specified devices			Lot		
2.17.8	Bus bar Elements					
2.17.8.1	Bus conductor elements		1	Lot		
2.17.8.2	Bus connection elements		1	Lot		
2.17.8.3	GIS insulators, one of each type used		1	Lot		
2.17.8.4	Pressure relief elements		1	Lot		
2.17.9	SF6-to-Air Bushing Modules					
2.17.9.1	SF6-to-air bushing module, 400 kV, single phase		1	Lot		
2.17.10	Loose Spare Parts					
2.17.10.1	5% of auxiliary relays, control devices, fuses, terminal blocks,		1	Lat		
	etc. minimum one unit of each type used			Lot		
2.17.11	Other necessary works as per Employer's Requirement and		T			
	Conditions of Contract, if any, not included above (specify)			Lot		
					Sub Total 2.17	
2.18	Spare of LV, MV, HV Control and Power cables				-	
2.18.1	LV control cable, 5% of the installed cables		1	Lot		
2.18.2	LV, MV power cable, 5% of the installed cables		1	Lot		
2.18.3	Cable installation accessories - 5% of the installed material		1	Lot		
2.18.4	220 kV HV Cable (continuous cable for the longest length		1	т.		
	installed)			Lot		
	220 kV Termination Bushing Outdoor for Auto connection		1	Nos.		
	220 kV GIS termination		1	Nos.		
2.18.5	Other necessary works as per Employer's Requirement and		1	Ŧ.,		
	Conditions of Contract, if any, not included above (specify)			Lot		
	, , , , , , , , , , , , , , , , , , , ,			U	Sub Total 2.18	
2.19	Spare parts of Mechanical Equipment					
2.19.1	Fire protection					
2.19.1.1	Fire protection/detection for auto transformer - one unit of each		1	Lot		
	type used			Loi		
2.19.1.2	Clean-agent fire extinguisher		1	Lot		
2.19.1.3	Control building general fire protection/detection system, one		1	Lot		
	unit of each component used			Lot		
2.19.1.4	GIS building general fire protection/detection system, one unit		1	Lot		
	of each component used			Lot		
2.19.2	Control building HVAC system					
2.19.2.1	Throwaway air filters per air conditioning unit		1	Lot		
2.19.2.2	Pulley belts per air conditioning unit motor		1	Lot		
2.19.2.3	Thermostat per air conditioning unit		1	Lot		
2.19.3	GIS building ventilation system					
2.19.3.1	Throwaway air filters per ventilation system		1	Lot		

Breakdown of Rates and Prices Schedule No. 2. Plant, Goods and Equipment(Including Mandatory Spare Parts) Supplied from Abroad

Item No.	Description	Code (a)	Qty.	Unit	Unit Rate (b) USS DDP plus all related cost as defined in foot note	Total Price (c) US\$
			1	2	3	(1) x (3)
2.19.3.2	Pulley belts per ventilation unit motor		1	Lot		
2.19.3.3	Thermostat per ventilation unit		1	Lot		
2.19.4	Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)		1	Lot		
		•	•		Sub Total 2.19	
			Total (	Carried	forward to Grand SC-5)	
	Name of Bidde	r:				
	Signature of Bidde	r:				
Note:						

Note:

\*\*\*:This value is indicative, the Contractor will validate as per item 1.1.6 of Design Works (Electrical)

**Country of Origin Declaration Form** 

Item No.	Description	Code

**Note**: Bidders shall enter the full name of the country of origin of all imported plant and equipment. Enter the code as per the Country of Origin Declaration Form.

	down of Rates and Prices Schedule No. 3. Plant, Goods and Equipment (In Employer's Country	_	vianuatoi	y Spare 1 arts) Supplied	irom within the
Item No.	Description	Qty	Unit	Unit Rate (b) US\$ EXW plus all related cost as defined in foot note	Total Price (c) US\$
			2	3	(1) x (3)
3.1	AIS HV and MV Equipment			T T	
3.1.1	167 MVA, (400/√3/220/√3/33) kV, Single Phase Auto-Transformer with OLTC, RTCC Facility, Surge protection arrangement (AIS) for HV, IV and LV side and with Bushing CT complete with all accessories as specified	7	Nos		
3.1.2	Capacitive Voltage Transformer (CVT) 400kV, Single Phase 2 Windings, Secondary Voltage 110V, Accuracy 0.2, Min Burden 50VA, Application Metering	12	Nos		
3.1.3	Current Transformer (CT), 400kV, Single Phase, Tank Type, 3 Core, 2000-1000-500/1A, Class 0.2, Rated Output 15VA	12	Nos		
3.1.4	Current Transformer (CT), 72.5kV, Single Phase 2 Windings	6	Nos		
3.1.5	400kV Surge Arrester (SA), Zinc Oxide 366 kV Rated Voltage, 20kA, 12kJ/kV	12	Nos		
3.1.6	Station Service Transformer, 630 kVA, 33/0.4kV	2	Nos		
3.1.7	30kV,10kA Lightning arrester for 33kV line bays	6	Nos		
3.1.8	30kV,10kA Lightning arrester for 33/0.4kV station service transformers	6	Nos		
3.1.9	72.5kV Double Break Isolator, Single Phase	1	Lot		
3.1.10	72.5kV Circuit Breaker, Three Phase, 50Hz.	2	Nos		
3.1.11	400kV Bus Support Post Insulator	1	Lot		
3.1.12	72.5kV Bus Support Post Insulator	1	Lot		
3.1.13	Suspension/Tension Insulator Strings, Including Hardware	1	Lot		
3.1.14	Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)	1	Lot		
	T			Sub Total 3.1	
3.2	Hot Dip Galvanized Steel		1	1	
3.2.1	Gantry Column for 400 kV Incoming Line	5	Nos		
3.2.2	Gantry Girder for 400 kV Incoming Line	4	Nos		
3.2.3	Support Structure for 400 kV Current Transformer	12	Nos		
3.2.4	Support Structure for 400 kV Capacitive Voltage Transformer	12	Nos		
3.2.5	Support Structure for 400 kV Surge Arrester	12	Nos		
3.2.6	Support Structure for 400 kV Bus Support	1	Lot		
3.2.7	Support Structure for 72.5 kV Current Transformer	6	Nos		
3.2.8	Support Structure for 72.5 kV Bus Support or Pot Head	1	Lot		
3.2.9	Support Structure for 72.5 kV Single Switch Stand	12	Lot		
3.2.10	Support Structure for 30kV Lightning Arrestor	12	Nos.		
3.2.11	Structures for Lightning Mast and other Lighting structures  Other necessary works as per Employer's Requirement and Conditions of	1	Lot		
5.2.12	Contract, if any, not included above (specify)	1	Lot		
3.3	Bus Bar and Overhead Connections			Sub Total 3.2	
3.3.1	5" AL. Tubular Bus Bar 141.30mm Outer Diameter, 9.53mm Thickness	1	Lot		
3.3.2	Bus bar Connectors and Hardware (Tube to NEMA Pads, Bus Supports, etc)	1	Lot		
3.3.3	Bare Cond. ACSR 54 Strand 3.53mm AL 7 Strands 3.53mm Steel	1	Lot		
3.3.4	Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)	1	Lot		
3.4	LV, MV, HV Control and Power Cable		•	Sub Total 3.3	
3.4.1	LV Control Cables	1	Lot		
3.4.2	LV Power Cables	1	Lot		
3.4.3	Cable Installation Accessories (Cable Gland, Labels Terminal Strips, etc)	1	Lot		
3.4.4	XLPE Power Cable, 33kV (from LV side of the Auto transformer to 33kV)	1	Lot		

21 can	Breakdown of Rates and Prices Schedule No. 3. Plant, Goods and Equipment (Including Mandatory Spare Parts) Supplied from Within the Employer's Country						
Item No.	Description	Qty	Unit	Unit Rate (b) US\$ EXW plus all related cost as defined in foot note	Total Price (c ) US\$		
			2	3	(1) x (3)		
3.4.5	33kV Cable Pothead	1	Lot				
3.4.6	220 kV HV Cable	1400	mtrs				
	220 kV Termination Bushing Outdoor for Auto connection	7	Nos.				
	220 kV GIS termination	7	Nos.				
3.4.7	Cable carriers (trays, conduits, ducts) for routing the HV & LV power, control, instrumentation and communication interface cables.	1	Lot				
3.4.8	Power Cable for Filter Plant (Transformer) of suitable size with termination arrangement	1	Lot				
3.4.9	Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)	1	Lot				
			l	Sub Total 3.4			
3.5	AC AND DC STATION SUPPLY		1	<u> </u>			
3.5.1	400v AC Main Switch Board		3.7				
3.5.1.1	400V Switchgear with Automation Controls, 1000A CB and 2 Current Transformers	3	Nos				
3.5.1.2	400V Switchgear with Automation Controls, 630A CB and 2 Current Transformers	1	Nos				
3.5.1.3	Distribution panel Bus-A, 400V, 3 Phase, 1000A, 20kA for 1Sec. (5) 400A Breakers, (1) Potential Transformer	1	Nos				
3.5.1.4	Distribution panel Bus-B, 400V, 3 Phase, 1000A, 20kA for 1Sec. (6) 400A Breakers, (1) Potential Transformer	1	Nos				
3.5.2	400v AC Main Lighting Board						
3.5.2.1	100KVA Lighting Transformer	2	Nos				
3.5.2.2	Distribution panel, 400V, 3 Phase, 4 Wire, 20kA, 1Sec. Bus-A (4) 63A, (1) 400A Breakers,	1	Nos				
	Bus-B (4) 63A, (1) 400A Breakers, Bus-C (5) 63A TIE A-B 400A breaker, TIE B-C 400A Breaker						
3.5.3	400v AC Emergency Lighting Distribution Board		2.7				
3.5.3.1	100KVA Lighting Transformer	1	Nos				
3.5.3.2	Distribution panel Bus-A 400V, 3 Phase, 4 Wire, 20kA, 1Sec. (5) 63A, (1) 400A 4 Pole Breakers, TIE A-B 100A breaker	1	Nos				
3.5.3.3	Distribution panel Bus-B 400V, 3 Phase, 4 Wire, 20kA, 1Sec. (3) 63A, (1) 400A 4 Pole Breakers	1	Nos				
3.5.4	400v AC Distribution Board						
3.5.4.1	400V Switchgear with Automation Controls,	1	Nos				
	1000A CB and 2 Current Transformers						
3.5.4.2	400/110V, 50VA, Potential Transformer	3	Nos				
3.5.4.3	400/1A Current Transformer, Class 5P20	1	Nos				
3.5.4.4	400V Switchgear with Automation Controls, 630A with 2 Current Transformers	1	Nos				
3.5.4.5	400v Distribution panel Bus-A (1) 400A, (4) 100A, (8) 63A, (2) 32A 4 Pole Breakers, (14) 63A, (8) 32A 2 Pole Breakers TIE A-B 400A Breaker	1	Nos				
3.5.4.6	400v Distribution panel Bus-B (1) 400A, (3) 100A, (8) 63A 4 Pole Breakers (14) 63A, (5) 32A 4 Pole Breakers	1	Nos				
3.5.5	400v AC AMF Panel						
3.5.5.1	400/1A Current Transformer, Class 1	3	Nos				
3.5.5.2	400/1A Current Transformer, Class 5P20	1	Nos				
3.5.6	DC Chargers and Batteries						

БГСАК	lown of Rates and Prices Schedule No. 3. Plant, Goods and Equipment (I Employer's Country		Mandator	y Spare Farts) Supplied	irom within the
Item No.	Description	Qty	Unit	Unit Rate (b) US\$ EXW plus all related cost as defined in foot note	Total Price (c ) US\$
			2	3	(1) x (3)
3.5.6.1	220V Battery Charger (Float/Boost)	3	Nos		
3.5.6.2	48V Battery charger (Float/Boast)	3	Nos		
3.5.6.3	250A Throw over Switch, Interlock	6	Nos		
3.5.6.4	Battery, 220Vdc, 108 Minimum Cells	2	Nos		
3.5.6.5	Battery, 48Vdc, 24 Minimum Cells	2	Nos		
3.5.7	DC Distribution Boards				
3.5.7.1	Distribution panel, 220V, 400A, 4kA for 1 Sec. 50 positions	2	Nos		
3.5.7.2	Distribution panel, 48V, 400A, 4kA for 1 Sec. 50 positions	2	Nos		
3.5.7.3	DC Fuse Box, 220Vdc	1	Lot		
3.5.7.4	DC Fuse Box, 48Vdc	1	Lot		
3.5.8	Other Equipment	1	NI		
3.5.8.1	Diesel Generator Set, 250kVA (Including Full Tank)  Other necessary works as per Employer's Requirement and Conditions of	1	Nos		
3.5.9	Contract, if any, not included above (specify)	1	Lot		
	Contract, if any, not included above (specify)		1	Sub Total 3.5	
3.6	400 kV Gas Insulated Switchgear (1-1/2 breaker arrangement)			Sub Total 3.3	
3.6.1	Line/feeder Bay				
3.6.1.1	SF6 Circuit Breaker, 400kV, 4000A, 50kA, Three Pole	8	Nos		
3.6.1.2	Current Transformer Modules, three cores, 400kV, single-phase, Three-phase set	16	Nos		
3.6.1.3	Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set	16	Nos		
3.6.1.4	Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set	16	Nos		
3.6.1.5	Line/Feeder High Speed Earthing Switches, with removable earthing link 400kV, 50kA, single-phase, three-phase set	8	Nos		
3.6.1.6	Voltage Transformers, 400kV, dual secondary, with isolating link, Single-phase, Three-phase set	8	Nos		
3.6.1.7	Line/Feeder Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set	8	Nos		
3.6.1.8	Line/Feeder Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set	8	Nos		
3.6.1.9	Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring)	8	Nos		
3.6.1.10	Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay)	8	Nos		
3.6.1.11	LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices	1	Lot		
3.6.1.12	All metallic structures and supports required for GIS complete with accessories	1	Lot		
3.6.1.13	All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices	1	Lot		
3.6.1.14	Gas Insulated bus (GIB) and required supports for GIB run whole for Line/feeder Bay Lot	8	Bays		
3.6.2	Transformer bay				
3.6.2.1	SF6 Circuit Breakers, 400kV, 4000A, 50kA, three-pole, with Control Point on Wave Switching Device	4	Nos		
3.6.2.2	Current Transformer Modules, Three cores, 400kV, Single-phase, Three-phase set	8	Nos		
3.6.2.3	Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase, three-phase set	8	Nos		
3.6.2.4	Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set	8	Nos		
3.6.2.5	Transformer Bay High Speed Earthing Switches, with removable earthing link 400kV, 50kA, Three-pole group operated	3	Nos		

	Employer's Country						
Item No.	Description	Qty	Unit	Unit Rate (b) US\$ EXW plus all related cost as defined in foot note	Total Price (c) US\$		
			2	3	(1) x (3)		
3.6.2.6	Voltage Transformers, 400kV, dual secondary, with isolating link, single- phase, three-phase set	3	Nos				
3.6.2.7	Transformer Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set	6	Nos				
3.6.2.8	Transformer Maintenance Earthing Switches, 400kV, 50kA, single-phase, three-phase set	6	Nos				
3.6.2.9	Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring)	4	Nos				
3.6.2.10	Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay)	4	Nos				
3.6.2.11	LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices	1	Lot				
3.6.2.12	All metallic structures and supports required for GIS complete with accessories	1	Lot				
3.6.2.13	All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices	1	Lot				
3.6.2.14	Isolating & Earthing Switches, 400kV, 4000A, 50kA Single phase, and Auxiliary Gas Insulated Bus (GIB) for Spare Transformer, GIS to AIS Bushing termination, jumpers, required CT, Al. tube, metering, control and protection as required all complete. 33kV isolators, 33kV cables, jumpers as required all complete	3	Nos				
3.6.2.15	Gas Insulated bus (GIB) and required supports for GIB run whole for Transformer Bay Lot	4	Bays				
3.6.3	<u>Diameter Middle Breaker Bay-400 kV</u>						
3.6.3.1	Proposed SF6 Diameter middle Circuit Breakers associated with Line Feeder, 400kV, 4000A, 50kA, three-pole	3	Nos				
3.6.3.2	Proposed SF6 Diameter middle Circuit Breakers associated with Auto Transformer and Line Feeder, 400kV, 4000A, 50kA, three-pole, with Control Point on Wave Switching Device	2	Nos				
3.6.3.3	Current Transformer Modules, Three cores, 400kV, Three-phase set	10	Nos				
3.6.3.4	Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase, three-phase set	10	Nos				
3.6.3.5	Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set	10	Nos				
3.6.3.6	Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring)	5	Nos				
3.6.3.7	Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay)	5	Nos				
3.6.3.8	LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices	1	Lot				
3.6.3.9	All metallic structures and supports required for GIS complete with accessories	1	Lot				
3.6.3.10	All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices	1	Lot				
3.6.4	Gas Insulated BUSBAR						
3.6.4.1	400kV, 3 single phase (isolated), SF6 gas insulated, metal enclosed 4000A bus bars each enclosed in three individual bus enclosures	6	Diameter				
3.6.4.2	Voltage Transformers, 400kV, dual secondary, single-phase, three-phase set	2	Nos				
3.6.4.3	Main Bus Bar High Speed Earthing Switches, with removable earthing link 400kV, 50kA, Single-phase, Three-phase set	2	Nos				
3.6.4.4	Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase, three-phase set	2	Nos				
3.6.4.5	Maintenance Earthing Switches, 400kV, 50kA, Single-phase, Three-phase set	2	Nos				

Item No.	Description	Otre	IIn:4	Unit Data (h)	Total Price (a)
Item No.	Description	Qty	Unit	Unit Rate (b) US\$ EXW plus all related cost as defined in foot note	Total Price (c ) US\$
			2	3	(1) x (3)
3.6.5	Other necessary works as per Employer's Requirement and Conditions of	1	Lot		
	Contract, if any, not included above (specify)			G 1 T + 12 6	
	Г			Sub-Total 3.6	
3.7	Complete with control & protection up to GIB sealing end for all Feeder	r and Trai	nsformer	Rave	
3.7.1	Complete set of Control and Protection panels for	unu III			
	400 kV station as specified in Scope and Employers Requirements including but not limited to:				
3.7.1.1	Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel)	17	Nos		
3.7.1.2	Line Protection Panel (Note: line protection should include tele protection terminals)	8	Nos		
3.7.1.3	Transformer Protection Panel (Auto Trans Bay 1=1no,Auto Trans Bay 2=1no)	4	Nos		
3.7.1.4	400kV (Duplicate Bus Bar Protection)	2	Set		
3.7.1.5	Miscellaneous Relay and Control Equipment, not included above	1	Lot		
3.7.2	Complete set of Control and Protection panels for 33 kV station as specified in Scope and Employers Requirements including but not limited to:				
3.7.2.1	Circuit Breaker Relay Panel (Note: BCU should be included in the Relay Panel)	2	Nos		
3.7.2.2	Transformer Protection Panel	2	Nos		
3.7.2.3	Miscellaneous Relay and Control Equipment, not included above	1	Lot		
3.7.3	Substation Automation & Metering	1	G .		
3.7.3.1 3.7.3.2	SAS Operator Station for control of 400/220/33 kV Substation Automation System (SAS) for 400 kV System per diameter	6	Set Set		
	*				
3.7.3.3 3.7.3.4	Substation Automation System (SAS) for 33kV System per feeder Substation Automation System (SAS) for Auxiliary System	1	Set Set		
3.7.3.5	Integration of all 400kV Bays under present scope with the SCADA of	1	Lot		
	SIEMENS (SINAUT Spectrum) at Load Dispatch Centre, Kathmandu including supply of Hardware, Software, accessories etc. complete as per				
3.7.3.6	Technical Specification.  Telecommunication system for New Damauli	1	Lot		
3.7.3.7	Fibre Optic SDH System	1	Lot Lot		
3.7.3.8	Phone System	1	Lot		
3.7.3.9	400 kV Metering	1	Lot		
3.7.3.10	Miscellaneous Relay and Control Equipment, not included above	1	Lot		
	<u></u>			Sub Total 3.7	
3.8	Grounding System	1	Ι τ.		
3.8.1	Stranded Bare Copper 240 Sq. mm Grid (Including Fusion and Mechanical Connectors)	1	Lot		
3.8.2	Grounding Rods	1	Lot		
3.8.3	Embedded Grounding System - 400kV GIS (Including Connections to GIS metallic Structures, Supports and	1	Lot		
3.8.5	Walkways/Platforms) Embedded Grounding System - Control room	1	Lot		
3.8.6	Other necessary works as per Employer's Requirement and Conditions of	1	Lot		
	Contract, if any, not included above (specify)	•	Lot	Sub Total 3.8	
3.9	Lightning Protection System			545 10tai 5.0	
3.9.1	Overhead Galvanized Steel Wire, Including Hardware	1	Lot		
3.9.2	Lightening Mast for Protection	1	Lot		
3.9.3	Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)	1	Lot		
3.10	77. 6.14. 0.4			Sub Total 3.9	
3.10	Firefighting System				

USS  EXV plus all related cost as defined in foot and the cost as defined in foot and defined in foot and defined in foot and the cost as defined in foot and	3.10.2 Fire protection/detection for 400kV GIS Building 1 L			Total Price (c
10.2	3.10.2 Fire protection/detection for 400kV GIS Building 1 L	co	XW plus all related ost as defined in foot	, ,
10.3   Fire protection/decetor system for pump house building	Ų	2	3	(1) x (3)
10.5   Fire protection/decection system for generator disest tank				
10.5   Fire protection/detection system for generator discel tank	1			
10.6   Dortable fire extinguishers				
10.7   Clean-agent Fire extinguishers				
Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)    WAC And Ventilation Systems				
Contract, if any, not included above (specify)				
I		Lot		
1.1.1   400kV GIS Building HVAC and Ventilation Systems	continues in any, not included accord (upperly)		Sub Total 3.10	
1.   Lot				
Sub Total 3.11		Lot		
Accessories and Ancillary Material	1.11.2 Control House HVAC and Ventilation Systems 1 L	Lot		
12.1   Junction and marshalling boxes, outdoor   1   Lot     12.2   Junction and marshalling boxes, motor   1   Lot     12.3   Outdoor lighting, including lighting fixtures   1   Lot     12.4   Indoor lighting, including lighting fixtures   1   Lot     12.5   Control Cabinet for outdoor lighting   1   Lot     12.6   Electric Overhead Travelling Crune for installation and removal of GIS     12.7   Rail tracks for movement of power transformers on the reinforced concrete   1   Lot     12.8   Visual Monitoring System   1   Lot     12.9   Other necessary works as per Employer's Requirement and Conditions of   Lot     12.9   Other necessary works as per Employer's Requirement and Conditions of   Lot     13.1.1   400kV GIS SEP cleakage detector, analyzer and processing unit all complete   Lot     13.1.2   400kV GIS Wrenches and tools   1   Lot     13.1.3   400kV GIS Wrenches and tools   1   Lot     13.1.4   400kV GIS Separate   1   Nos     13.1.5   400kV GIS Maintenance, Repair tools and Testing Instruments   1   Nos     13.1.4   400kV GIS Gis Agenetic   1   Nos     13.1.5   400kV GIS Month   1   Nos     13.1.6   400kV GIS Month   1   Nos     13.1.7   400kV GIS Month   1   Nos     13.1.8   400kV GIS Month   1   Nos     13.1.9   1   Nos     13.1.1   400kV GIS Month   1   Nos     13.1.2   400kV GIS Month   1   Nos     13.1.3   400kV GIS Month   1   Nos     13.1.4   400kV GIS Month   1   Nos     13.1.5   400kV GIS Month   1   Nos     13.1.6   400kV GIS Month   1   Nos     13.1.7   400kV GIS Month   1   Nos     13.1.8   1   Nos     13.1.9   Nos     13.1.1   400kV GIS Month   1   Nos     13.1.2   400kV GIS Month   1   Nos     13.1.3   1   1   1   1   1     13.1.4   1   1   1   1     14.1   1   1   1   1     15.1   1   1   1   1   1     15.1   1   1   1   1     15.1   1   1   1   1     15.1   1   1   1   1     15.1   1   1   1   1     15.1   1   1   1   1     15.1   1   1   1   1     15.1   1   1   1   1     15.1   1   1   1   1     15.1   1   1   1   1     15.1   1   1   1   1     15.1   1   1   1   1     15.1   1   1	12 A		Sub Total 3.11	
12.3	· ·	ot		
12.4   Indoor lighting, including lighting fixtures				
12.5   Control Cabinet for outdoor lighting   1				
12.5   Centred Cabinet for outdoor lighting   1   Lot				
Electric Overhead Travelling Crane for installation and removal of GIS   Equipment				
12.7   Rail tracks for movement of power transformers on the reinforced concrete foundations all complete.   1	.12.6 Electric Overhead Travelling Crane for installation and removal of GIS 1 L			
12.8   Visual Monitoring System   1   Lot	.12.7 Rail tracks for movement of power transformers on the reinforced concrete 1 L	Lot		
12.9   Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)   Sub Total 3.12		ot		
13.1.1	.12.9 Other necessary works as per Employer's Requirement and Conditions of 1 L			
13.1.1   August	Contract, if any, not included above (specify)		Sub Total 3.12	
13.1.1   400kV GIS SF6 leakage detector, analyzer and processing unit all complete   1	Mandatory Maintenance, Repair tools and Testing Instruments			
13.1.2   400kV GIS Wrenches and tools   1   Lot				
13.1.3   400kV GIS Pressure gauge   1   Nos     13.1.4   400kV GIS Gas sampling and moisture meter   1   Nos     13.1.5   400kV GIS Micro-Ohmmeter   1   Nos     13.1.6   400kV GIS Circuit-breaker, timing tester   1   Nos     13.1.7   400kV GIS Laptop computer with switcialized software   1   Nos     13.1.8   Complete set of SF6 gas service cart mounted on a trailer for mobile application. SF6 gas refilling cart equipped with 1 SF6 gas cylinder and the necessary instruments and adapters for easy and quick gas refilling in case of losses     13.1.9   HV Test Bushing for GIS   1   Lot     13.1.10   Online Partial Discharge Monitoring System   1   Nos     13.2   Auto Transformer & Station Service Transformer     13.2.1   Oil-treatment unit 6000lph along with suitable size and quantity of connection arrangement (MCCB (240-300 Amp),terminal lugs etc.) all complete (autotransformer)     13.2.2   Oil dielectric tester   1   Nos     13.2.3   Dielectric tester based on tan δ and dielectric losses , 10 kV   1   Nos     13.2.4   Megger, electronic, 5 kV   1   Nos     13.2.5   Wrenches and tools   1   Lot     13.3   Complete set of Control and Protection panels for Substation     13.3.1   Relay Test Kit   1   Lot	.13.1.1 400kV GIS SF6 leakage detector, analyzer and processing unit all complete 1 L	Lot		
13.1.4   400kV GIS Gas sampling and moisture meter   1   Nos   13.1.5   400kV GIS Micro-Ohmmeter   1   Nos   13.1.5   400kV GIS Micro-Ohmmeter   1   Nos   13.1.6   400kV GIS Circuit-breaker, timing tester   1   Nos   13.1.7   400kV GIS Laptop computer with switcialized software   1   Nos   13.1.8   Complete set of SF6 gas service cart mounted on a trailer for mobile application. SF6 gas refilling cart equipped with 1 SF6 gas cylinder and the necessary instruments and adapters for easy and quick gas refilling in case of losses   1   Lot   13.1.9   HV Test Bushing for GIS   1   Lot   13.1.10   Online Partial Discharge Monitoring System   1   Nos   13.2.1   Oil-treatment unit 6000lph along with suitable size and quantity of connection arrangement (MCCB (240-300 Amp),terminal lugs etc.) all complete (autotransformer)   13.2.2   Oil dielectric tester   1   Nos   13.2.3   Dielectric tester based on tan δ and dielectric losses , 10 kV   1   Nos   13.2.4   Megger, electronic, 5 kV   1   Nos   13.2.4   Megger, electronic, 5 kV   1   Nos   13.2.5   Wrenches and tools   1   Lot   13.3   Complete set of Control and Protection panels for Substation   1   Lot   13.3.1   Relay Test Kit   1   Lot   Lot	.13.1.2 400kV GIS Wrenches and tools 1 L	Lot		
13.1.5   400kV GIS Micro-Ohmmeter   1   Nos       13.1.6   400kV GIS Circuit-breaker, timing tester   1   Nos     13.1.7   400kV GIS Laptop computer with switcialized software for GIS setting and monitoring   1   Nos     13.1.8   Complete set of SF6 gas service cart mounted on a trailer for mobile application. SF6 gas refilling cart equipped with 1 SF6 gas cylinder and the necessary instruments and adapters for easy and quick gas refilling in case of losses   1   Lot     13.1.9   HV Test Bushing for GIS   1   Lot     13.1.10   Online Partial Discharge Monitoring System   1   Nos     13.2.1   Auto Transformer & Station Service Transformer	.13.1.3   400kV GIS Pressure gauge   1   N	los		
13.1.6   400kV GIS Circuit-breaker, timing tester   1   Nos       13.1.7   400kV GIS Laptop computer with switcialized software for GIS setting and monitoring   1   Nos       13.1.8   Complete set of SF6 gas service cart mounted on a trailer for mobile application. SF6 gas refilling cart equipped with 1 SF6 gas cylinder and the necessary instruments and adapters for easy and quick gas refilling in case of losses   1   Lot     13.1.9   HV Test Bushing for GIS   1   Lot     13.1.10   Online Partial Discharge Monitoring System   1   Nos     13.2.1   Oil-treatment unit 6000lph along with suitable size and quantity of connection arrangement (MCCB (240-300 Amp),terminal lugs etc.) all complete (autotransformer)   1   Nos     13.2.1   Oil dielectric tester   1   Nos     13.2.2   Oil dielectric tester based on tan δ and dielectric losses , 10 kV   1   Nos     13.2.3   Dielectric tester based on tan δ and dielectric losses , 10 kV   1   Nos     13.2.4   Megger, electronic, 5 kV   1   Nos     13.2.5   Wrenches and tools   1   Lot     13.3   Complete set of Control and Protection panels for Substation   1   Lot		los		
13.1.7   400kV GIS Laptop computer with switcialized software for GIS setting and monitoring   1   1   1   1   1   1   1   1   1		los		
for GIS setting and monitoring  1.13.1.8 Complete set of SF6 gas service cart mounted on a trailer for mobile application. SF6 gas refilling cart equipped with 1 SF6 gas cylinder and the necessary instruments and adapters for easy and quick gas refilling in case of losses  1.13.1.9 HV Test Bushing for GIS  1.13.1.10 Online Partial Discharge Monitoring System  1.13.2 Auto Transformer & Station Service Transformer  1.13.2.1 Oil-treatment unit 6000lph along with suitable size and quantity of connection arrangement (MCCB (240-300 Amp),terminal lugs etc.) all complete (autotransformer)  1.13.2.2 Oil dielectric tester  1.1 Nos  1.13.2.3 Dielectric tester based on tan δ and dielectric losses , 10 kV  1.13.2.4 Megger, electronic, 5 kV  1.1 Nos  1.13.2.5 Wrenches and tools  1.1 Lot  1.13.3 Complete set of Control and Protection panels for Substation  1.13.3.1 Relay Test Kit				
application. SF6 gas refilling cart equipped with 1 SF6 gas cylinder and the necessary instruments and adapters for easy and quick gas refilling in case of losses  13.1.9 HV Test Bushing for GIS  1 Lot  13.1.10 Online Partial Discharge Monitoring System  1 Nos  13.2 Auto Transformer & Station Service Transformer  13.2.1 Oil-treatment unit 6000lph along with suitable size and quantity of connection arrangement (MCCB (240-300 Amp),terminal lugs etc.) all complete (autotransformer)  13.2.2 Oil dielectric tester  1 Nos  13.2.3 Dielectric tester based on tan δ and dielectric losses , 10 kV  1 Nos  13.2.4 Megger, electronic, 5 kV  1 Nos  13.2.5 Wrenches and tools  1 Lot  13.3.1 Relay Test Kit		los		
13.1.9 HV Test Bushing for GIS   1   Lot   13.1.10   Online Partial Discharge Monitoring System   1   Nos   13.2.2   Auto Transformer & Station Service Transformer	application. SF6 gas refilling cart equipped with 1 SF6 gas cylinder and the necessary instruments and adapters for easy and quick gas refilling in case	Lot		
1.13.1.10       Online Partial Discharge Monitoring System       1       Nos         1.13.2.1       Auto Transformer & Station Service Transformer       1       Nos         1.13.2.1       Oil-treatment unit 6000lph along with suitable size and quantity of connection arrangement (MCCB (240-300 Amp), terminal lugs etc.) all complete (autotransformer)       1       Nos         1.13.2.2       Oil dielectric tester       1       Nos         1.13.2.3       Dielectric tester based on tan δ and dielectric losses , 10 kV       1       Nos         1.13.2.4       Megger, electronic, 5 kV       1       Nos         1.13.2.5       Wrenches and tools       1       Lot         1.13.3       Complete set of Control and Protection panels for Substation       1       Lot         1.13.3.1       Relay Test Kit       1       Lot		ot		
13.2   Auto Transformer & Station Service Transformer				
connection arrangement (MCCB (240-300 Amp),terminal lugs etc.) all complete (autotransformer)  1.3.2.2 Oil dielectric tester 1 Nos 1.3.2.3 Dielectric tester based on tan δ and dielectric losses , 10 kV 1 Nos 1.3.2.4 Megger, electronic, 5 kV 1 Nos 1.3.2.5 Wrenches and tools 1 Lot 1.3.3 Complete set of Control and Protection panels for Substation 1.3.3.1 Relay Test Kit 1 Lot				
13.2.2   Oil dielectric tester	connection arrangement (MCCB (240-300 Amp),terminal lugs etc.) all	los		
1.3.2.3 Dielectric tester based on tan δ and dielectric losses , 10 kV       1 Nos         1.3.2.4 Megger, electronic, 5 kV       1 Nos         1.3.2.5 Wrenches and tools       1 Lot         1.3.3 Complete set of Control and Protection panels for Substation       1 Lot         1.3.3.1 Relay Test Kit       1 Lot		los		
13.2.4   Megger, electronic, 5 kV		los		
13.2.5   Wrenches and tools				
13.3 Complete set of Control and Protection panels for Substation  13.3.1 Relay Test Kit  1 Lot	CC 1			
.13.3.1 Relay Test Kit 1 Lot	•			
		ot		
	·			

Wandstory Spare Parts   1	Breakd	Breakdown of Rates and Prices Schedule No. 3. Plant, Goods and Equipment (Including Mandatory Spare Parts) Supplied from Within the Employer's Country					
	Item No.	Description	Qty	Unit	US\$ EXW plus all related cost as defined in foot	Total Price (c) US\$	
				2	3	(1) x (3)	
3.14.1					Sub Total 3.13		
1,14,12   1,15		* *					
terminals and surge counter							
terminals and surge counter	3.14.1.1		1	Nos			
3.14.1.3   Current transformer, 400kV	3.14.1.2		1	Nos			
3.14.2.1   Current transformer, 72.5kV   1   Nos	3.14.1.3	č	1	Nos			
3.14.2.1   Current transformer, 72.5kV   1   Nos		1 -					
3.14.2.1   Auto Transformer			1	Nos			
Samplete set of gaskets with grease, for cover, manholes, hand holes, and pipping fittings.   2   Nos   No		Auto Transformer					
3.14.2.2   Lot of LV control and protective components, minimum one unit of each type of components used   1.14.2.3   Pressure relief device, complete with accessories   2   Nos   3.14.2.4   Bushings, one complete unit of each type used, with accessories   2   Nos   3.14.2.5   Corner transformer, one unit of each type   2   Nos   3.14.2.6   Oil-circulating pump with motor, complete with motor   2   Nos   3.14.2.7   Cooling fan, complete with motor   2   Nos   3.14.2.8   Bushing the protein of each type used   2   Nos   3.14.2.9   One instrument of each type used (temperature, oil level, pressure vent, etc.)   etc		Complete set of gaskets with grease, for cover, manholes,	2	Nos			
3.14.2.1   Pressure relief device, complete with accessories   2   Nos	3.14.2.2	Lot of LV control and protective components, minimum one unit of each	2	Nos			
3.14.2.4   Bushings, one complete unit of each type used, with accessories   2   Nos	3 14 2 3		2	Noe			
3.14.2.5   Current transformer, one unit of each type							
3.14.2.6   Oil-circulating pump with motor, complete with accessories   2   Nos		U 1 11					
3.14.2.7   Cooling fan, complete with motor   2   Nos							
3.14.2.8   Buchholz relay, complete   2   Nos							
3.14.2.9   One instrument of each type used (temperature, oil level, pressure vent, etc.)							
ctc.   3.14.2.10   One valve of each type used   2   Nos   3.14.2.11   Insulating oil, 5% of the volume used   2   Nos   3.14.2.12   Silica gel, quantity for one load   2   Nos   3.14.2.13   Tap changer diverter switch, spare contacts and transition resistance   2   Nos   3.14.2.14   Tap changer diverter switch, spare contacts   2   Nos   3.14.2.15   Rolls of Kraft insulating paper   2   Nos   3.14.2.16   Additional spare parts as per Chapter 3: Auto Transformer Specification of Part 2: Employer's Requirements, Section V- B1 (Technical Specifications).							
3.14.2.11   Insulating oil, 5% of the volume used   2   Nos   3.14.2.12   Silica gel, quantity for one load   2   Nos   3.14.2.13   Tap changer diverter switch, spare contacts and transition resistance   2   Nos   3.14.2.14   Tap changer diverter switch, spare contacts   2   Nos   3.14.2.15   Rolls of Kraft insulating paper   2   Nos   3.14.2.16   Additional spare parts as per Chapter 3: Auto Transformer Specification of Part 2: Employer's Requirements, Section V- B1 (Technical Specifications).   1   Lot   Part 2: Employer's Requirements, Section V- B1 (Technical Specifications).   3.14.3.1   3.14.3.1   3.14.3.2   Oil Temperature Indicator with sensing device   1   Lot   Lot   3.14.3.3   Tap Changer Contacts   1   Lot   Lot   3.14.3.4   Buchloz Relay   1   Nos   3.14.3.5   Explosion vent diaphragm   1   Nos   3.14.3.6   Set of Valve (each type)   1   Lot   1   Lot   3.14.3.7   Sphase 11k V Horn Gap Fuse   1   Lot   1   Lot   3.14.3.7   Other necessary works as per Employer's Requirement and Conditions of   Lot   Contract, if any, not included above (specify)   Sub Total 3.14   Vicincuit breaker, complete, with CTs and protection devices   1   Nos   3.15.1.1   Lv circuit breaker, complete, with CTs and protection devices   1   Nos   3.15.1.3   Metering - one instrument of each type used   1   Nos   Nos   3.15.1.5   Outgoing thermoganetic breakers - one unit of each type used   1   Nos   One one one instrument of each type used   1   Nos   One one one instrument of each type used   1   Nos   One one of 5% of loose material   1   Nos   One of 5% of loose material   Auxiliary relays, contactors, fuses, terminals, etc.		etc.)					
3.14.2.12   Silica gel, quantity for one load   2   Nos   3.14.2.13   Tap changer diverter switch, spare contacts and transition resistance   2   Nos   3.14.2.14   Tap changer selector switch spare contacts   2   Nos   3.14.2.15   Rolls of Kraft insulating paper   2   Nos   3.14.2.16   Rolls of Kraft insulating paper   2   Nos   3.14.2.16   Additional spare parts as per Chapter 3: Auto Transformer Specification of Part 2: Employer's Requirements, Section V- B1 (Technical Specifications).   3.14.3.1   All Bushing with metal parts (each voltage rating) for 630 KVA   1   Nos   Transformer   3.14.3.2   Oil Temperature Indicator with sensing device   1   Lot   Lot   3.14.3.3   Tap Changer Contacts   1   Lot   Nos   3.14.3.5   Explosion vent diaphragm   1   Nos   3.14.3.5   Explosion vent diaphragm   1   Nos   3.14.3.6   Set of valve (each type)   1   Lot   Lot   3.14.3.7   3-Phase 11 kV Horn Gap Fuse   1   Lot   Lot   3.14.3.7   Other necessary works as per Employer's Requirement and Conditions of   Lot   Contract, if any, not included above (specify)   Super for LV Switchgear   3.15.1.1   Spare for LV Switchgear   Nos   3.15.1.2   Outgoing thermomagnetic breakers - one unit of each type used   1   Nos   3.15.1.3   Metering - one instrument of each type used   1   Nos   Nos   3.15.1.5   Protection (other than included in LV breaker)   1   Nos   Nos   Nos   3.15.1.5   Automatic Transfer Switch   Nos   One unit of each type used   1   Nos   One unit of each type used   3.15.1.5   Automatic Transfer Switch   Nos   One complete controller including sensors   Nos   Auxiliary relays, contactors, fuses, terminals, etc.							
3.14.2.13   Tap changer diverter switch, spare contacts and transition resistance   2   Nos     3.14.2.14   Tap changer selector switch spare contacts   2   Nos     3.14.2.15   Rolls of Kraft insulating paper   2   Nos     3.14.2.16   Additional spare parts as per Chapter 3: Auto Transformer Specification of Part 2: Employer's Requirements, Section V-B1 (Technical Specifications).		·					
3.14.2.14   Tap changer selector switch spare contacts   2   Nos   3.14.2.15   Rolls of Kraft insulating paper   2   Nos   3.14.2.16   Additional spare parts as per Chapter 3: Auto Transformer Specification of Part 2: Employer's Requirements, Section V- B1 (Technical Specifications).   1   Lot   Lot   Specifications).   3.14.3.1   All Bushing with metal parts (each voltage rating) for 630 KVA   1   Nos   Transformer   3.14.3.2   All Bushing with metal parts (each voltage rating) for 630 KVA   1   Lot   Lot   3.14.3.3   Tap Changer Contacts   1   Lot   Lot   3.14.3.4   Bushhloz Relay   1   Nos   Nos   3.14.3.5   Steplosion vent diaphragm   1   Nos   Nos   3.14.3.6   Set of valve (each type)   1   Lot   Lot   3.14.3.7   3.14a.5   Spare Parts for AC and DC Station Supply   Spare for LV Switchgear   Spare for LV Switchgear   Nos   3.15.1.2   Outgoing thermomagnetic breakers - one unit of each type used   1   Nos   Nos   3.15.1.3   Protection (other than included in LV breaker)   1   Nos   Nos   3.15.1.5   Automatic Transfer Switch   1   Nos   Nos   Nos   3.15.1.5   Automatic Transfer Switch   1   Nos		5 1 7					
3.14.2.15 Rolls of Kraft insulating paper 3.14.2.16 Additional spare parts as per Chapter 3: Auto Transformer Specification of Part 2: Employer's Requirements, Section V- B1 (Technical Specifications). 3.14.3.1 G30kVA Transformer 3.14.3.1 All Bushing with metal parts (each voltage rating) for 630 KVA Transformer 3.14.3.2 Oil Temperature Indicator with sensing device 1 Lot 3.14.3.3 Tap Changer Contacts 1 Nos 3.14.3.4 Buchhloz Relay 1 Nos 3.14.3.5 Explosion vent diaphragm 1 Nos 3.14.3.6 Set of valve (each type) 1 Lot 3.14.3.7 3-Phase 11 kV Horn Gap Fuse 1 Lot 3.14.3.8 Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  Sub Total 3.14 3.15 Spare Parts for AC and DC Station Supply 3.15.1.1 LV circuit breaker, complete, with CT's and protection devices 3.15.1.2 Outgoing thermomagnetic breakers - one unit of each type used 1 Nos 3.15.1.3 Metering - one instrument of each type used 1 Nos 3.15.1.5 Automatic Transfer Switch One complete controller including sensors 3.15.1.6 One or 5% of loose material Auxiliary relays, contactors, fuses, terminals, etc.		1 0 1					
Additional spare parts as per Chapter 3: Auto Transformer Specification of Part 2: Employer's Requirements, Section V- B1 (Technical Specifications)							
Part 2: Employer's Requirements, Section V- B1 (Technical Specifications).							
3.14.3.1 All Bushing with metal parts (each voltage rating) for 630 KVA Transformer  3.14.3.2 Oil Temperature Indicator with sensing device  3.14.3.3 Tap Changer Contacts  3.14.3.4 Bushhloz Relay  3.14.3.5 Explosion vent diaphragm  3.14.3.6 Set of valve (each type)  3.14.3.7 3-Phase 11 kV Horn Gap Fuse  3.14.3.7 3-Phase 11 kV Horn Gap Fuse  3.14.4 Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  Sub Total 3.14  3.15 Spare Parts for AC and DC Station Supply  3.15.1.1 LV circuit breaker, complete, with CT's and protection devices  3.15.1.2 Outgoing thermomagnetic breakers - one unit of each type used  3.15.1.3 Metering - one instrument of each type used  3.15.1.4 Protection (other than included in LV breaker)  One unit of each type used  3.15.1.5 Automatic Transfer Switch  One complete controller including sensors  3.15.1.6 One or 5% of loose material  Auxiliary relays, contactors, fuses, terminals, etc.	3.11.2.10	Part 2: Employer's Requirements, Section V- B1 (Technical	•	Lot			
Transformer   3.14.3.2   Oil Temperature Indicator with sensing device   1   Lot   3.14.3.3   Tap Changer Contacts   1   Lot   3.14.3.4   Buchhloz Relay   1   Nos   3.14.3.5   Explosion vent diaphragm   1   Nos   3.14.3.6   Set of valve (each type)   1   Lot   1   Lot   3.14.3.7   Spanse II kV Horn Gap Fuse   1   Lot   1   Lot   3.14.3.7   Spanse II kV Horn Gap Fuse   1   Lot   Lot   3.14.4   Other necessary works as per Employer's Requirement and Conditions of   Contract, if any, not included above (specify)   Sub Total 3.14   Spare Parts for AC and DC Station Supply   Sub Total 3.14   Spare for LV Switchgear   Sub Total 3.14   LV circuit breaker, complete, with CT's and protection devices   1   Nos   3.15.1.2   Outgoing thermomagnetic breakers - one unit of each type used   2   Nos   3.15.1.3   Metering - one instrument of each type used   1   Nos   Nos   One unit of each type used   1   Nos   One unit of each type used   1   Nos   One unit of each type used   1   Nos   One unit of each type used   1   Nos   One unit of each type used   1   Nos   One complete controller including sensors   1   Nos   One complete controller including sensors   3.15.1.6   One or 5% of loose material   1   Nos   Auxiliary relays, contactors, fuses, terminals, etc.	3.14.3	630kVA Transformer					
3.14.3.2 Oil Temperature Indicator with sensing device 3.14.3.3 Tap Changer Contacts 3.14.3.4 Buchhloz Relay 3.14.3.5 Explosion vent diaphragm 1 Nos 3.14.3.6 Set of valve (each type) 1 Lot 3.14.3.7 3-Phase 11 kV Horn Gap Fuse 3.14.4 Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  Sub Total 3.14  3.15 Spare Parts for AC and DC Station Supply 3.15.1 Spare for LV Switchgear 3.15.1.1 LV circuit breaker, complete, with CT's and protection devices 3.15.1.2 Outgoing thermomagnetic breakers - one unit of each type used 3.15.1.3 Metering - one instrument of each type used 3.15.1.4 Protection (other than included in LV breaker) One unit of each type used 3.15.1.5 Automatic Transfer Switch One complete controller including sensors 3.15.1.6 One or 5% of loose material Auxiliary relays, contactors, fuses, terminals, etc.	3.14.3.1		1	Nos			
3.14.3.3   Tap Changer Contacts   1	3.14.3.2		1	Lot			
3.14.3.4 Buchhloz Relay 3.14.3.5 Explosion vent diaphragm 3.14.3.6 Set of valve (each type) 3.14.3.7 3-Phase 11 kV Horn Gap Fuse 3.14.4 Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  Sub Total 3.14  3.15 Spare Parts for AC and DC Station Supply 3.15.1 Spare for LV Switchgear 3.15.1.1 LV circuit breaker, complete, with CT's and protection devices 3.15.1.2 Outgoing thermomagnetic breakers - one unit of each type used 3.15.1.3 Metering - one instrument of each type used 3.15.1.4 Protection (other than included in LV breaker) One unit of each type used 3.15.1.5 Automatic Transfer Switch One complete controller including sensors 3.15.1.6 One or 5% of loose material Auxiliary relays, contactors, fuses, terminals, etc.							
3.14.3.5 Explosion vent diaphragm 3.14.3.6 Set of valve (each type) 3.14.3.7 3-Phase 11 kV Horn Gap Fuse 3.14.4 Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  Sub Total 3.14  3.15 Spare Parts for AC and DC Station Supply 3.15.1 Spare for LV Switchgear 3.15.1.1 LV circuit breaker, complete, with CT's and protection devices 3.15.1.2 Outgoing thermomagnetic breakers - one unit of each type used 3.15.1.3 Metering - one instrument of each type used 3.15.1.4 Protection (other than included in LV breaker) One unit of each type used 3.15.1.5 Automatic Transfer Switch One complete controller including sensors 3.15.1.6 One or 5% of loose material Auxiliary relays, contactors, fuses, terminals, etc.		1 0					
3.14.3.6 Set of valve (each type) 3.14.3.7 3-Phase 11 kV Horn Gap Fuse 3.14.4 Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  Sub Total 3.14  3.15 Spare Parts for AC and DC Station Supply 3.15.1 Spare for LV Switchgear 3.15.1.1 LV circuit breaker, complete, with CT's and protection devices 1 Nos 3.15.1.2 Outgoing thermomagnetic breakers - one unit of each type used 2 Nos 3.15.1.3 Metering - one instrument of each type used 1 Nos 3.15.1.4 Protection (other than included in LV breaker) 1 Nos One unit of each type used 3.15.1.5 Automatic Transfer Switch 1 Nos One complete controller including sensors 3.15.1.6 One or 5% of loose material Auxiliary relays, contactors, fuses, terminals, etc.							
3.14.3.7 3-Phase 11 kV Horn Gap Fuse 3.14.4 Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  3.15 Spare Parts for AC and DC Station Supply 3.15.1 Spare for LV Switchgear 3.15.1.1 LV circuit breaker, complete, with CT's and protection devices 1 Nos 3.15.1.2 Outgoing thermomagnetic breakers - one unit of each type used 2 Nos 3.15.1.3 Metering - one instrument of each type used 1 Nos 3.15.1.4 Protection (other than included in LV breaker) 1 Nos One unit of each type used 3.15.1.5 Automatic Transfer Switch 1 Nos One complete controller including sensors 3.15.1.6 One or 5% of loose material Auxiliary relays, contactors, fuses, terminals, etc.							
3.14.4 Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)  3.15 Spare Parts for AC and DC Station Supply 3.15.1 Spare for LV Switchgear 3.15.1.1 LV circuit breaker, complete, with CT's and protection devices 1 Nos 3.15.1.2 Outgoing thermomagnetic breakers - one unit of each type used 2 Nos 3.15.1.3 Metering - one instrument of each type used 1 Nos 3.15.1.4 Protection (other than included in LV breaker) 1 Nos One unit of each type used 3.15.1.5 Automatic Transfer Switch 1 Nos One complete controller including sensors 3.15.1.6 One or 5% of loose material Auxiliary relays, contactors, fuses, terminals, etc.		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1				
3.15 Spare Parts for AC and DC Station Supply 3.15.1 Spare for LV Switchgear 3.15.1.1 LV circuit breaker, complete, with CT's and protection devices 1 Nos 3.15.1.2 Outgoing thermomagnetic breakers - one unit of each type used 2 Nos 3.15.1.3 Metering - one instrument of each type used 1 Nos 3.15.1.4 Protection (other than included in LV breaker) 1 Nos One unit of each type used 3.15.1.5 Automatic Transfer Switch 1 Nos One complete controller including sensors 3.15.1.6 One or 5% of loose material Auxiliary relays, contactors, fuses, terminals, etc.		Other necessary works as per Employer's Requirement and Conditions of					
3.15 Spare Parts for AC and DC Station Supply 3.15.1 Spare for LV Switchgear 3.15.1.1 LV circuit breaker, complete, with CT's and protection devices 1 Nos 3.15.1.2 Outgoing thermomagnetic breakers - one unit of each type used 2 Nos 3.15.1.3 Metering - one instrument of each type used 1 Nos 3.15.1.4 Protection (other than included in LV breaker) 1 Nos One unit of each type used 3.15.1.5 Automatic Transfer Switch 1 Nos One complete controller including sensors 3.15.1.6 One or 5% of loose material 1 Nos Auxiliary relays, contactors, fuses, terminals, etc.		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		<u> </u>	Sub Total 3.14		
3.15.1 Spare for LV Switchgear 3.15.1.1 LV circuit breaker, complete, with CT's and protection devices 1 Nos 3.15.1.2 Outgoing thermomagnetic breakers - one unit of each type used 2 Nos 3.15.1.3 Metering - one instrument of each type used 1 Nos 3.15.1.4 Protection (other than included in LV breaker) 1 Nos One unit of each type used 3.15.1.5 Automatic Transfer Switch 1 Nos One complete controller including sensors 3.15.1.6 One or 5% of loose material 1 Nos Auxiliary relays, contactors, fuses, terminals, etc.	3.15	Spare Parts for AC and DC Station Supply					
3.15.1.2 Outgoing thermomagnetic breakers - one unit of each type used  3.15.1.3 Metering - one instrument of each type used  3.15.1.4 Protection (other than included in LV breaker) One unit of each type used  3.15.1.5 Automatic Transfer Switch One complete controller including sensors  3.15.1.6 One or 5% of loose material Auxiliary relays, contactors, fuses, terminals, etc.							
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One unit of each type used  3.15.1.5 Automatic Transfer Switch One complete controller including sensors  3.15.1.6 One or 5% of loose material Auxiliary relays, contactors, fuses, terminals, etc.			1	Nos			
3.15.1.5 Automatic Transfer Switch One complete controller including sensors  3.15.1.6 One or 5% of loose material Auxiliary relays, contactors, fuses, terminals, etc.	3.15.1.4	` /	1	Nos			
3.15.1.6 One or 5% of loose material 1 Nos Auxiliary relays, contactors, fuses, terminals, etc.	3.15.1.5	Automatic Transfer Switch	1	Nos			
	3.15.1.6	One or 5% of loose material	1	Nos			
4.15.7   Nagro for III ' Distribution Panals	3.15.2	Spare for DC Distribution Panels					

	Breakdown of Rates and Prices Schedule No. 3. Plant, Goods and Equipment (Including Mandatory Spare Parts) Supplied from Within the Employer's Country						
Item No.	Description	Qty	Unit	Unit Rate (b) US\$ EXW plus all related cost as defined in foot note	Total Price (c US\$		
			2	3	(1) x (3)		
3.15.2.1	Thermomagnetic breakers	2	Nos				
	one unit of each type used						
3.15.2.2	Metering - one metering instrument of each type used	1	Nos				
3.15.2.3	Protection (other than included in LV breaker)	1	Nos				
	One unit of each type used						
3.15.2.4	One or 5% of loose material	1	Nos				
	Auxiliary relays, contactors, fuses, terminals, etc.						
3.15.3	Spare for Diesel Generator Set						
3.15.3.1	Replaceable elements for air filter	1	Nos				
3.15.3.2	Replaceable elements for oil filter	1	Nos				
3.15.3.3	Replaceable elements for fuel filter	1	Nos				
3.15.3.4	Complete set of injectors	1	Nos				
3.15.3.5	Fuel injector pump	1	Nos				
3.15.3.6	Oil pump	1	Nos				
3.15.3.7	Intake valves	1	Nos				
3.15.3.8	Seats for intake valves	1	Nos				
3.15.3.9	Exhaust valves	1	Nos				
	Set for exhaust valves	1	Nos				
		1	Nos				
	Set of pistons	1	Nos Nos				
	Set of complete bearings of the engine Set of all gaskets needed for the engine						
	Set of thermostats	1	Nos Nos				
	Set of thermostats Set of bearings for the alternator	1	Nos				
	Set of control cards, at least one unit of each type used	1	Nos				
	Diodes and thyristors of each type used	3	Nos				
	Lamp, one unit of each type used	10	Nos				
	Auxiliary relay, one unit of each type used	10	Nos				
3.15.3.21	Multifunction metering instrument	1	Nos				
		1	Nos				
3.15.3.23	Controller components	1	Nos				
3.15.3.24	Instrument, detectors	1	Nos				
3.15.4	Spare for Batteries	•	1,05				
3.15.4.1	One unit of battery used in 220 Vdc system	2	Nos				
3.15.4.2	Loose parts for 220 Vdc - connection elements, cables, links, etc.	1	Nos				
3.15.4.3	One unit of battery used in 48 Vdc system	1	Nos				
3.15.4.4	Loose parts for 48 Vdc - connection elements, cables, links, etc.	1	Nos				
3.15.5	Spare for Battery Chargers		1				
3.15.5.1	Complete bridge of thyristors assembled on a cooling base	1	Nos				
3.15.5.2	Controller, complete including each type of card used	1	Nos				
3.15.5.3	Loose elements - auxiliary relays, breakers, metering instruments, control	1	Nos				
	switches, fuses, etc.						
3.15.6	Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)	1	Lot				
	,,, (open,)	<u> </u>	1	Sub Total 3.15			
3.16	Mandatory spare parts - Miscellaneous material						
5.16.1	Junction and marshalling boxed, outdoor, one of each type used	1	Nos				
3.16.2	Junction and marshalling boxed, indoor, one of each type used	1	Nos				
5.16.3	Outdoor lighting fixture, one unit of each type used	3	Nos				
5.16.4	Post-type insulator, one unit of each type used	2	Nos				
.16.5	Suspension insulator, 5% of the total used	1	Nos				
3.16.6	Bus bar (rigid and strain) hardware, including, connectors, terminals,	1	Nos				
	separator, corona rings, 5% of each type used, minimum one unit						
3.16.7	Grounding conductors, 5% of the installed conductors (stranded copper	1	Nos				
	conductor, rectangular-shape copper bar and grounding rod)		1				

Break	lown of Rates and Prices Schedule No. 3. Plant, Goods and Equipment (I Employer's Country		Mandator	y Spare Parts) Supplied 1	from Within the
Item No.	Description	Qty	Unit	Unit Rate (b) US\$ EXW plus all related cost as defined in foot note	Total Price (c) US\$
			2	3	(1) x (3)
3.16.8	Fusion connection material, including molds, welding powder and installation tools, quantity required to make 5% of the total executed connections	1	Nos		
3.16.9	Mechanical connectors for grounding, 5% of the total executed connections	1	Nos		
3.16.10	Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)	1	Lot		
3.17	Mandatory spare parts for 400kV			Sub Total 3.16	
3.17.1	Spare Gas				
3.17.1.1	SF6 bottles required to fill the two largest volume compartments	1	Lot		
3.17.2	Circuit Breakers, 4000 A, 50kA	•	250		
3.17.2.1	Circuit breaker, complete pole assembly	1	Lot		
3.17.2.2	Complete sets of main contacts	1	Lot		
3.17.2.3	Complete sets of arcing contacts	2	Lot		
3.17.2.4	Operating mechanism, complete	1	Lot		
3.17.2.5	Operating mechanism motor	2	Lot		
3.17.2.6	Closing coils	4	Lot		
3.17.2.7	Tripping coils	4	Lot		
3.17.3	Disconnect-Switches, 4000 A	-	Lot		
3.17.3.1	Disconnect-Switch, complete pole	1	Nos		
3.17.3.2	Complete set of contacts	2	Nos		
3.17.3.3	Operating mechanism, complete	1	Nos		
3.17.3.4	Operating mechanism motor	2	Nos		
3.17.4	Maintenance Earthing Switches		1108		
3.17.4.1	Earthing-Switch, complete pole	1	Nos		
3.17.4.2	Complete set of contacts	2	Nos		
3.17.4.3	Operating mechanism, complete	1	Nos		
3.17.4.4	Operating mechanism, complete Operating mechanism motor	2	Nos		
3.17.5	High-speed earthing Switches		1108		
3.17.5.1	High-speed earthing switch, complete pole	1	Nos		
3.17.5.2	Complete set of contacts	2	Nos		
3.17.5.3	Operating mechanism, complete	1	Nos		
3.17.5.4	Operating mechanism motor	2	Nos		
3.17.6	Other Equipment		1108		
3.17.6.1	Voltage transformer, 400 kV, complete with disconnecting and earthing switch	3	Nos		
3.17.6.2	Current transformer, metering core, loose part	6	Nos		
3.17.6.3	Current transformer, protection core, loose part	6	Nos		
3.17.7	400kV GIS Bay, Local Control Cabinet				
3.17.7.1	One Bay Local Control Cabinet complete, wired,	1	Lot		
	with all specified devices				
3.17.8	Bus bar Elements				
3.17.8.1	Bus conductor elements	1	Lot		
3.17.8.2	Bus connection elements	1	Lot		
3.17.8.3	GIS insulators, one of each type used	1	Lot		
3.17.8.4	Pressure relief elements	1	Lot		
3.17.9	SF6-to-Air Bushing Modules				
3.17.9.1	SF6-to-air bushing module, 400 kV, single phase	1	Lot		
3.17.10	Loose Spare Parts				
3.17.10.1	5% of auxiliary relays, control devices, fuses, terminal blocks, etc.	1	Lot		
	minimum one unit of each type used		<u> </u>		
3.17.10.2	Other necessary works as per Employer's Requirement and Conditions of	1	Lot	$\top$	
	Contract, if any, not included above (specify)				
				Sub Total 3.17	
3.18	Spare of LV, MV, HV Control and Power cables				
3.18.1	LV control cable, 5% of the installed cables	1	Lot		

Breako	lown of Rates and Prices Schedule No. 3. Plant, Goods and Equipment ( Employer's Countr		Mandatoi	y Spare Parts) Supplied t	from Within the
Item No.	Description	Qty	Unit	Unit Rate (b) US\$ EXW plus all related cost as defined in foot note	Total Price (c) US\$
			2	3	(1) x (3)
3.18.2	LV, MV power cable, 5% of the installed cables	1	Lot		
3.18.3	Cable installation accessories - 5% of the installed material	1	Lot		
3.18.4	220 kV HV Cable (continuous cable for the longest length installed)	1	Lot		
	220 kV Termination Bushing Outdoor for Auto connection	1	Nos.		
	220 kV GIS termination	1	Nos.		
3.18.5	Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)	1	Lot		
	, , , , , , , , , , , , , , , , , , , ,		1	Sub Total 3.18	
3.19	Spare parts of Mechanical Equipment				
3.19.1	Fire protection				
3.19.1.1	Fire protection/detection for auto transformer - one unit of each type used	1	Lot		
3.19.1.2	Clean-agent fire extinguisher	1	Lot		
3.19.1.3	Control building general fire protection/detection system, one unit of each component used	1	Lot		
3.19.1.4	GIS building general fire protection/detection system, one unit of each component used	1	Lot		
3.19.2	Control building HVAC system				
3.19.2.1	Throwaway air filters per air conditioning unit	1	Lot		
3.19.2.2	Pulley belts per air conditioning unit motor	1	Lot		
3.19.2.3	Thermostat per air conditioning unit	1	Lot		
3.19.3	GIS building ventilation system				

	·	Qty	Unit	Unit Rate (b) US\$ EXW plus all related cost as defined in foot note	Total Price (c ) US\$
			2	3	(1) x (3)
19.3.1 Throwaway air f	ilters per ventilation system	1	Lot		
19.3.2 Pulley belts per v	ventilation unit motor	1	Lot		
19.3.3 Thermostat per v	rentilation unit	1	Lot		
	works as per Employer's Requirement and Conditions of not included above (specify)	1	Lot		
<u>.</u>				Sub Total 3.19	
		Fotal(To S	chedule N	lo. 5. Grand Summary)	

Note:

\*\*\*:This value is indicative, the Contractor will validate as per item 1.1.6 of Design Works (Electrical)

#### Breakdown of Rates and Prices Schedule No. 4. Installation and Other Services including all related Civil Works

Item	Description	Total
No.		
4.1	Breakdown of General Installation and Construction Items (from Schedule No. 4.1)	
4.2	Breakdown of Earthworks (from Schedule No.4.2)	
4.3	Breakdown of Civil Works ( from Schedule No.4.3)	
4.4	Other Installation Services (from Schedule No.4.5)	
4.5	Total Excluding Summary of Breakdown of Day works (from Schedule 4.4)	
	(Carried forward to Grand SC-5)	
4.6	Summary of Breakdown of Day works (from Schedule 4.4) (Carried forward to	
	Grand SC-5)	
4.7	Total Including Breakdown of Day works.	
	Name of the Bidder:	
	Signature of Bidder:	·

Item no.	Schedule No. 4.1: Breakdown of General Install		Unit	Unit Rate in	Amount in US\$
Item no.	Description	Qty	Unit	US\$	Amount in US\$
			2	3	(1)x(3)
4.1.1	Electromechanical Works General			<u> </u>	(1)x(3)
4.1.1.1	Indoor and outdoor storage facilities for storing equipment and	1	Lot		
	material in substation	-	201		
4.1.1.2	Site Office, Accommodation and vehicular arrangement as	1	Lot		
	Specified in PSR	-			
4.1.1.3	Operation and Maintenance Manuals and Procedures	1	Lot		
4.1.1.4	"As-Built" Drawings for All Works including civil, building,	1	Lot		
	mechanical etc.				
4.1.1.5	Other necessary works as per Employer's Requirement and	1	Lot		
	Conditions of Contract, if any, not included above (specify)				
			S	ub-Total 4.1.1	
4.1.2	AIS HV and MV Equipment Installation		1	, ,	
4.1.2.1	167 MVA, $(400/\sqrt{3}/220/\sqrt{3}/33)$ kV, Single Phase Auto-	7	Nos		
	Transformer with OLTC, RTCC Facility, Surge protection				
	arrangement (AIS) for HV, IV and LV side and with Bushing				
4.1.2.2	CT complete with all accessories as specified	10	3.7		
4.1.2.2	Capacitive Voltage Transformer (CVT) 400kV, Single Phase 2	12	Nos		
	Windings, Secondary Voltage 110V, Accuracy 0.2, Min				
4.1.2.3	Burden 50VA, Application Metering	12	NI.		
4.1.2.3	Current Transformer (CT), 400kV, Single Phase, Tank Type, 3 Core, 2000-1000-500/1A, Class 0.2, Rated Output 15VA	12	Nos		
	5 Core, 2000-1000-500/1A, Class 0.2, Rated Output 15 VA				
4.1.2.4	Current Transformer (CT), 72.5kV, Single Phase	6	Nos		
7.1.2.7	2 Windings	U	1103		
4.1.2.5	400kV Surge Arrester (SA), Zinc Oxide	12	Nos		
	366 kV Rated Voltage, 20kA, 12kJ/kV				
4.1.2.6	Substation Service Transformer, 630 kVA, 33kV/0.400 V	2	Nos		
4.1.2.7	30kV,10kA Lightning arrester for 33kV line bays	6	Nos		
4.1.2.8	30kV,10kA Lightning arrester for 33/0.4kV station service	6	Nos		
	transformers				
4.1.2.9	72.5kV Double Break Isolator, Single Phase	1	Lot		
4.1.2.10	72.5kV Circuit Breaker, Three Phase, 50Hz.	2	Nos		
4.1.2.11	400kV Bus Support Post Insulator	1	Lot		
4.1.2.12	72.5kV Bus Support Post Insulator	1	Lot		
4.1.2.13	Suspension/Tension Insulator Strings, Including Hardware	1	Lot		
4.1.2.14	Other necessary works as per Employer's Requirement and	1	Lot		
	Conditions of Contract, if any, not included above (specify)			1.77 ( 1.4.1.2)	
4.1.3	Hat Din Calvaninad Steel Installation		5	ub Total 4.1.2	
4.1.3.1	Hot Dip Galvanized Steel Installation Gantry Column for 400 kV Incoming Line	5	Nos		
4.1.3.2	Gantry Girder for 400 kV Incoming Line	4	Nos		
4.1.3.3	Support Structure for 400 kV Current Transformer	12	Nos		
4.1.3.4	Support Structure for 400 kV Capacitive Voltage Transformer	12	Nos		
4.1.3.5	Support Structure for 400 kV Surge Arrester	12	Nos		
4.1.3.6	Support Structure for 400 kV Bus Support	1	Lot		
4.1.3.7	Support Structure for 72.5 kV Current Transformer	6	Nos		
4.1.3.8	Support Structure for 72.5 kV Bus Support or Pot Head	1	Lot		
4.1.3.9	Support Structure for 72.5 kV Single Switch Stand	1	Nos		
4.1.3.10	Support Structure for 30kV Lightning Arrestor	12	Nos		<u> </u>
4.1.3.11	Structures for Lightning Mast and other Lighting structures	1	Lot		
4.1.3.12	Other necessary works as per Employer's Requirement and	1	Lot		
	Conditions of Contract, if any, not included above (specify)		<u> </u>	1	
41.4	ln n 10 1 10 a 2 2 2 2		S	ub Total 4.1.3	
4.1.4	Bus Bar and Overhead Connections Installation		т.	<del>                                     </del>	
4.1.4.1	5" AL. Tubular Bus Bar	1	Lot		
4142	141.30mm Outer Diameter, 9.53mm Thickness Bus bar Connectors and Hardware	1	T 04		
4.1.4.2	(Tube to NEMA Pads, Bus Supports, etc)	1	Lot		
4.1.4.3	Bare Cond. ACSR	1	Lot		
1.1.7.3	54 Strand 3.53mm AL 7 Strands 3.53mm Steel	1	Lot		
	7 . Saula 5.55 iiiii 712 / Saulas 5.55 iiiii 5000i		·	l l	

T.	Schedule No. 4.1; Breakdown of General Installa	_			A A TICO
Item no.	Description	Qty	Unit	Unit Rate in	Amount in US\$
				US\$	
			2	3	(1)x(3)
4.1.4.4	Other necessary works as per Employer's Requirement and	1	Lot		
	Conditions of Contract, if any, not included above (specify)				
	conditions of contract, if any, not included accive (specify)		C	ub Total 4.1.4	
417	IN MY INC. 4 1 1D CHI A H.C.		3	ub 10tai 4.1.4	
4.1.5	LV, MV, HV Control and Power Cable Installation			1	
4.1.5.1	LV Control Cables	1	Lot		
4.1.5.2	LV Power Cables	1	Lot		
4.1.5.3	Cable Installation Accessories	1	Lot		
	(Cable Gland, Labels Terminal Strips, etc)				
4.1.5.4	XLPE Power Cable, 33kV (from LV side of the Auto	1	Lot		
4.1.3.4	` ` `	1	Lot		
	transformer to 33kV line bay arrangement)				
4.1.5.5	33 kV Cable Pothead	1	Lot		
4.1.5.6	220 kV HV Cable	1400	mtrs		
	220 kV Termination Bushing Outdoor for Auto connection	7	Nos.		
	220 kV GIS termination	7	Nos.		
4.1.5.7		1	Lot		
4.1.3.7	Cable carriers (trays, conduits, ducts) for routing the HV & LV	1	Lot		
	power, control, instrumentation and communication interface				
	cables.				
4.1.5.8	Power Cable for Filter Plant (Transformer) 3.5CX240 sq.mm.	1	Lot		
	(Armored, PVC Insulated) with suitable termination			j	
	arrangement all complete				
4150	e i	1	Lat	1	
4.1.5.9	Other necessary works as per Employer's Requirement and	1	Lot		
	Conditions of Contract, if any, not included above (specify)				
			S	ub Total 4.1.5	
4.1.6	AC and DC Station Supply Installation				
4.1.6.1	400V AC Main Switch Board				
4.1.6.1.1	400V Switchgear with Automation Controls,	3	Nos		
4.1.0.1.1	1000A CB and 2 Current Transformers	3	1103		
11610					
4.1.6.1.2	400V Switchgear with Automation Controls,	1	Nos		
	630A CB and 2 Current Transformers				
4.1.6.1.3	Distribution panel Bus-A,	1	Nos		
	400V, 3 Phase, 1000A, 20kA for 1Sec.				
	(5) 400A Breakers, (1) Potential Transformer				
4.1.6.1.4	Distribution panel Bus-B,	1	Nos		
4.1.0.1.4		1	INUS		
	400V, 3 Phase, 1000A, 20kA for 1Sec.				
	(6) 400A Breakers, (1) Potential Transformer				
4.1.6.2	400V AC Main Lighting Board				
4.1.6.2.1	100KVA Lighting Transformer	2	Nos		
4.1.6.2.2	Distribution panel, 400V, 3 Phase, 4 Wire, 20kA, 1Sec.	1	Nos		
	Bus-A (4) 63A, (1) 400A Breakers,	•	1,00		
	. , , , , , , , , , , , , , , , , , , ,				
	Bus-B (4) 63A, (1) 400A Breakers,				
	Bus-C (5) 63A				
	TIE A-B 400A breaker, TIE B-C 400A Breaker				
4.1.6.3	400V AC Emergency Lighting Distribution Board	·			
4.1.6.3.1	100 KVA Lighting Transformer	1	Nos		
4.1.6.3.2	Distribution panel Bus-A	1	Nos		
1.1.0.3.2	400V, 3 Phase, 4 Wire, 20kA, 1Sec.	1	1103	j	
				1	
	(5) 63A, (1) 400A 4 Pole Breakers,				
	TIE A-B 100A breaker				
4.1.6.3.3	Distribution panel Bus-B	1	Nos		
	400V, 3 Phase, 4 Wire, 20kA, 1Sec.			1	
	(3) 63A, (1) 400A 4 Pole Breakers,				
	TIE B-C 100A Breaker			j	
1161					
4.1.6.4	400V AC Distribution Board			ļ	
4.1.6.4.1	400V Switchgear with Automation Controls,	1	Nos	j l	
	1000A CB and 2 Current Transformers			j	
4.1.6.4.2	400/110V, 50VA, Potential Transformer	3	Nos		
4.1.6.4.3	400/1A Current Transformer, Class 5P20	1	Nos	1	
4.1.6.4.4	400V Distribution panel Bus-A	1	Nos	1	
	(1) 400A, (4) 100A, (8) 63A, (2) 32A 4 Pole Breakers,			j	
	(14) 63A, (8) 32A 2 Pole Breakers			1	
	TIE A-B 400A Breaker			j	
L	i			1	

	Schedule No. 4.1: Breakdown of General Install	ation and	Construc	ction Items	
Item no.	Description	Qty	Unit	Unit Rate in US\$	Amount in US\$
			2	3	(1)x(3)
4.1.6.4.5	400V Distribution panel Bus-B	1	Nos		(1)10(0)
	(1) 400A, (3) 100A, (8) 63A 4 Pole Breakers	-	1,05		
	(14) 63A, (5) 32A 4 Pole Breakers				
4.1.6.5	400V AC AMF Panel				
4.1.6.5.1	400/1A Current Transformer, Class 1	3	Nos		
4.1.6.5.2	400/1A Current Transformer, Class 5P20	1	Nos		
		1	INOS		
4.1.6.6	DC Chargers and Batteries 220V Battery Charger (Float/Boost)	2	NI		
4.1.6.6.1	7 8 7	3	Nos		
4.1.6.6.2	48V Battery charger (Float/Boast)	3	Nos		
4.1.6.6.3	250A Throw over Switch, Interlock	6	Nos	1	
4.1.6.6.4	Battery, 220Vdc, 108 Minimum Cells	2	Nos		
4.1.6.6.5	Battery, 48Vdc, 24 Minimum Cells	2	Nos		
4.1.6.7	DC Distribution Boards	_			
4.1.6.7.1	Distribution panel, 220V, 400A, 4kA for 1 Sec. 50 positions	2	Nos		
4.1.6.7.2	Distribution panel, 48V, 400A, 4kA for 1 Sec. 50 positions	2	Nos		
4.1.6.7.3	DC Fuse Box, 220Vdc	1	Lot		
4.1.6.7.4	DC Fuse Box, 48Vdc	1	Lot		
4.1.6.8	Other Equipment				
4.1.6.8.1	Diesel Generator Set, 250kVA (Including Full Tank)	1	Nos		
4.1.6.9	Other necessary works as per Employer's Requirement and	1	Lot		
	Conditions of Contract, if any, not included above (specify)				
		•	S	ub Total 4.1.6	
4.1.7	400 kV Gas Insulated Switchgear (1-1/2 breaker arrangeme	ent)			
4.1.7.1	Line/feeder Bay				
4.1.7.1.1	SF6 Circuit Breaker, 400kV, 4000A, 50kA, Three Pole	8	Nos		
4.1.7.1.2	Current Transformer Modules, three cores, 400kV, single-	16	Nos		
,	phase, Three-phase set	10	1,05		
4.1.7.1.3	Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A,	16	Nos		
7.1.7.1.3	50kA, Single-phase, Three-phase set	10	1103		
4.1.7.1.4	Circuit Breaker Maintenance Earthing Switches, 400kV,	16	Nos		
4.1./.1.4		10	NOS		
41715	50kA, Single-phase, Three-phase set	8	Mag		
4.1.7.1.5	Line/Feeder High Speed Earthing Switches, with removable	8	Nos		
41516	earthing link 400kV, 50kA, single-phase, three-phase set		3.7	1	
4.1.7.1.6	Voltage Transformers, 400kV, dual secondary, with earthing	8	Nos		
	link, Single-phase, Three-phase set	_			
4.1.7.1.7	Line/Feeder Disconnect Switches, 400kV, 4000A, 50kA,	8	Nos		
	Single-phase, Three-phase set				
4.1.7.1.8	Line/Feeder Maintenance Earthing Switches, 400kV, 50kA,	8	Nos		
	Single-phase, Three-phase set				
4.1.7.1.9	Bay Local Control Cabinet including (device controls,	8	Nos		
	instrumentation, interlocking, annunciation, gas density				
	monitoring, circuit breaker monitoring)				
4.1.7.1.10	Partial Discharge Monitoring System including monitoring	8	Nos		
	sensors and diagnostic equipment (per bay)		<u> </u>	<u>                                      </u>	
4.1.7.1.11	LV control and power cable connections from Local Control	1	Lot		
	Cabinet to all GIS equipment/devices				
4.1.7.1.12	All metallic structures and supports required for GIS complete	1	Lot		
	with accessories				
4.1.7.1.13	All walkways, platforms, stairs, ladders and accessories	1	Lot	†	
1.11.7.11.13	required for access to all GIS devices	_	Lot		
4.1.7.1.14	Gas Insulated bus (GIB) and required supports for GIB run for	8	Bays		
7.1./.1.17	whole Line/Feeder Bay Lot	0	Days		
4.1.7.2	Transformer bay				
		4	No.	<del>                                     </del>	
4.1.7.2.1	SF6 Circuit Breakers, 400kV, 4000A, 50kA, three-pole, with	4	Nos		
41722	Control Point on Wave Switching Device	-	3.7		
4.1.7.2.2	Current Transformer Modules, Three cores, 400kV,	8	Nos		
	Single-phase, Three-phase set				
4.1.7.2.3	Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A,	8	Nos		
1	50kA, single-phase, three-phase set				
4.1.7.2.4	Circuit Breaker Maintenance Earthing Switches, 400kV,	8	Nos		

Item no.	Description	Qty	Unit	Unit Rate in	Amount in US\$
	4			US\$	
			2	3	(1)x(3)
4.1.7.2.5	Line/Feeder High Speed Earthing Switches, with removable earthing link 400kV, 50kA, Single-phase, Three-phase set	3	Nos		
4.1.7.2.6	Voltage Transformers, 400kV, dual secondary, with earthing	3	Nos		
4.1.7.2.7	link, single-phase, three-phase set Transformer Disconnect Switches, 400kV, 4000A, 50kA,	6	Nos		
	Single-phase, Three-phase set				
4.1.7.2.8	Transformer Maintenance Earthing Switches, 400kV, 50kA,	6	Nos		
11.500	single-phase, three-phase set		3.7		
4.1.7.2.9	Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring)	4	Nos		
4.1.7.2.10	Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay)	4	Nos		
4.1.7.2.11	LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices	1	Lot		
4.1.7.2.12	All metallic structures and supports required for GIS complete	1	Lot		
	with accessories				
4.1.7.2.13	All walkways, platforms, stairs, ladders and accessories	1	Lot		
	required for access to all GIS devices				
4.1.7.2.14	Isolating & Earthing Switches, 400kV, 4000A, 50kA	3	Nos		
	Single phase, and Gas Insulated Bus (GIB) for Spare Transformer, with auxiliary Busies to AIS Bushing				
	termination, jumpers, required CT, Al. tube, metering, control				
	and protection as required all complete. 33kV isolators, 33kV				
	cables, jumpers as required all complete				
4.1.7.2.15	Gas Insulated bus (GIB) and required supports for GIB run for	4	Bays		
	whole Transformer Bay Lot				
4.1.7.3	Diameter Middle Breaker Bay-400 kV				
4.1.7.3.1	Proposed SF6 Diameter middle Circuit Breakers associated with Line Feeder, 400kV, 4000A, 50kA, three-pole	3	Nos		
4.1.7.3.2	Proposed SF6 Diameter middle Circuit Breakers associated with Auto Transformer and Line Feeder, 400kV, 4000A, 50kA, three-pole, with Control Point on Wave Switching Device	2	Nos		
4.1.7.3.3	Current Transformer Modules, Three cores, 400kV, Single-phase, Three-phase set	10	Nos		
4.1.7.3.4	Circuit Breaker Isolating Disconnect Switches, 400kV, 4000A, 50kA, single-phase, three-phase set	10	Nos		
4.1.7.3.5	Circuit Breaker Maintenance Earthing Switches, 400kV, 50kA,Single-phase, Three-phase set	10	Nos		
4.1.7.3.6	Bay Local Control Cabinet including (device controls, instrumentation, interlocking, annunciation, gas density monitoring, circuit breaker monitoring)	5	Nos		
4.1.7.3.7	Partial Discharge Monitoring System including monitoring sensors and diagnostic equipment (per bay)	5	Nos		
4.1.7.3.8	LV control and power cable connections from Local Control Cabinet to all GIS equipment/devices	1	Lot		
4.1.7.3.9	All metallic structures and supports required for GIS complete with accessories	1	Lot		
4.1.7.3.10	All walkways, platforms, stairs, ladders and accessories required for access to all GIS devices	1	Lot		
4.1.7.4	Gas Insulated BUSBAR				
4.1.7.4.1	400kV, 3 single phase (isolated), SF6 gas insulated, metal enclosed 4000A bus bars each enclosed in three individual bus enclosures	6	Diameter		
4.1.7.4.2	Disconnect Switches, 400kV, 4000A, 50kA, Single-phase, Three-phase set	2	Nos		
4.1.7.4.3	Voltage Transformers, 400kV, dual secondary, single-phase, three-phase set	2	Nos		
4.1.7.4.4	Main Bus Bar High Speed Earthing Switches, with removable earthing link 400kV, 50kA, Single-phase, Three-phase set	2	Nos		

	Schedule No. 4.1: Breakdown of General Install	ation and			
Item no.	Description	Qty	Unit	Unit Rate in	Amount in USS
				US\$	
			2	3	(1)x(3)
4.1.7.4.5	Maintenance Earthing Switches, 400kV, 50kA,	2	Nos		( )(-)
7.1./.7.3	Single-phase, Three-phase set	2	1103		
4155		1	T /		
4.1.7.5	Other necessary works as per Employer's Requirement and	1	Lot		
	Conditions of Contract, if any, not included above (specify)				
			S	ub Total 4.1.7	
4.1.8	Complete with control & protection up to GIB sealing end f	or all Fee	der and	Transformer B	ays.
4.1.8.1	Installation of Control and Protection panels for				
	400 kV station as specified in Scope and Employers				
	1 1 1				
41011	Requirements including but not limited to:	17	N.T.		
4.1.8.1.1	Circuit Breaker Relay Panel (Note: BCU should be included in	17	Nos		
	the Relay Panel)				
4.1.8.1.2	Line Protection Panel (Note: line protection should include	8	Nos		
	tele protection terminals)				
4.1.8.1.3	Transformer Protection Panel	4	Nos		
	(Auto Trans Bay 1=1no,Auto Trans Bay 2=1no)				
41014		2	C - 4		
4.1.8.1.4	400kV (Duplicate Bus Bar Protection)	2	Set		
4.1.8.1.5	Miscellaneous Relay and Control Equipment, not included	1	Lot		
	above				
4.1.8.2	Installation of Control and Protection panels for				
	33 kV station as specified in Scope and Employers				
	Requirements including but not limited to:				
4.1.8.2.1	Circuit Breaker Relay Panel (Note: BCU should be included in	2	Nos		
4.1.0.2.1		2	1105		
	the Relay Panel)				
4.1.8.2.2	Transformer Protection Panel	2	Nos		
4.1.8.2.3	Miscellaneous Relay and Control Equipment, not included	1	Lot		
	above				
4.1.8.3	Installation of Substation Automation & Metering				
4.1.8.3.1	SAS Operator Station for control of 400/220/33 kV	1	Set		
4.1.8.3.2	Substation Automation System (SAS) for 400 kV System per	6	Set		
	diameter				
4.1.8.3.3	Substation Automation System (SAS) for 33kV System per	2	Set		
	feeder				
4.1.8.3.4	Substation Automation System (SAS) for Auxiliary System	1	Set		
4.1.8.3.5	Integration of all 400kV Bays under present scope with the	1	Lot		
	SCADA of SIEMENS (SINAUT Spectrum) at Load Dispatch	-	200		
	Centre, Kathmandu including supply of Hardware, Software,				
	accessories etc. complete as per Technical Specification.				
4.1.8.3.6	Telecommunication system for New Damauli	1	Lot		
4.1.8.3.7	400 kV Metering	1	Lot		
4.1.8.3.8	Fibre Optic SDH System	1	Lot		
4.1.8.3.9	Phone System	1	Lot		
	Miscellaneous Relay and Control Equipment, not included				
4.1.8.3.10	1	1	Lot		
	above				
			S	ub Total 4.1.8	
4.1.9	Grounding System				
4.1.9.1	Stranded Bare Copper 240 Sq. mm Grid	1	Lot		
	(Including Fusion and Mechanical Connectors)				
4102	Grounding Rods	1	Lot	<del>                                     </del>	
4.1.9.2		1		<del>                                     </del>	
4.1.9.3	Embedded Grounding System - 400kV and 220kV GIS	1	Lot		
	(Including Connections to GIS metallic Structures, Supports				
	and Walkways/Platforms)		<u> </u>		
4.1.9.4	Embedded Grounding System - Control room	1	Lot		
4.1.9.5	Other necessary works as per Employer's Requirement and	1	Lot		
	Conditions of Contract, if any, not included above (specify)		201		
	conditions of contract, if any, not included above (specify)			b T-4.1440	
	I		S	ub Total 4.1.9	
4.1.10	Lightning Protection System				
4.1.10.1	Overhead Galvanized Steel Wire, Including Hardware	1	Lot		
	Lightening Mast for Protection	1	Lot		
4.1.10.2		1	Lot		
4.1.10.2 4.1.10.3	Other necessary works as ner Employer's Requirement and				
4.1.10.2 4.1.10.3	Other necessary works as per Employer's Requirement and	1	Lot		
	Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)	1		b-Total 4.1.10	

Item no.	Description	Qty	Unit	Unit Rate in US\$	Amount in US\$
			2	3	(1)x(3)
4.1.11.1	Fire protection/detection for 7 (Seven) auto transformers	1	Lot		
4.1.11.2	Fire protection/detection for 400kV GIS Building	1	Lot		
4.1.11.3	Fire protection/detection for Control House	1	Lot		
4.1.11.4	Fire protection/detection system for pump house building	1	Lot		
4.1.11.5	Fire protection/detection system for generator diesel tank	1	Lot		
4.1.11.6	Portable fire extinguishers	1	Lot		
4.1.11.7	Clean-agent fire extinguishers	1	Lot		
4.1.11.8	Other necessary works as per Employer's Requirement and	1	Lot		
	Conditions of Contract, if any, not included above (specify)				
			Su	b-Total 4.1.11	
4.1.12	HVAC And Ventilation Systems				
4.12.1	400kV GIS Building HVAC and Ventilation Systems	1	Lot		
4.12.2	Control House HVAC and Ventilation Systems	1	Lot		
			Su	b-Total 4.1.12	
4.1.13	Accessories and Ancillary Material				
4.1.13.1	Junction and marshalling boxes, outdoor	1	Lot		
4.1.13.2	Junction and marshalling boxes, indoor	1	Lot		
4.1.13.3	Outdoor lighting, including lighting fixtures	1	Lot		
4.1.13.4	Indoor lighting, including lighting fixtures	1	Lot		
4.1.13.5	Control Cabinet for outdoor lighting	1	Lot		
4.1.13.6	Electric Overhead Travelling Crane for installation and removal of GIS Equipment	1	Lot		
4.1.13.7	Rail tracks for movement of power transformers on the reinforced concrete foundations all complete.	1	Lot		
4.1.13.8	Visual Monitoring System	1	Lot		
4.1.13.9	Other necessary works as per Employer's Requirement and	1	Lot		
	Conditions of Contract, if any, not included above (specify)				
	•		Su	b-Total 4.1.13	
		Total(Ca	arried for	ward to SC-4)	
	Name of Bidder:				
·i	Signature of Bidder:			·	

#### Schedule No. 4.2: Breakdown of Earthworks

Item no.	Description	Qty.	Unit	Unit Rate in US\$	Amount in US\$
4.2.1	Site Clearing, Including Removal of Trees and Stumps	1	Lot		
4.2.2	Top Soil Stripping	1	Lot		
4.2.3	General Excavation	1	Lot		
4.2.4	Compacted Back Fill	1	Lot		
4.2.5	Uncompact Back Fill	1	Lot		
4.2.6	Surplus Disposal	1	Lot		
4.2.7	Surface Works, Including Compaction/Consolidation	1	Lot		
4.2.8	Other necessary works as per Employer's Requirement and	1	Lot		
	Conditions of Contract, if any, not included above				
	(specify)				
		Total	(Carrie	d forward to SC-4)	
	Name of I	Bidder:			
	Signature of I	Bidder:			`

Schedule No. 4.3: Breakdown of Civil Works

Item no.	Schedule No. 4.3 : Breakdov Description	Qty	Unit	Unit Rate in US\$	Amount in US\$
item no.	Description	Qıy	2	3	$\frac{A \text{intount in USS}}{(1)x(3)}$
4.3.1	Foundations		2	3	(1)x(3)
4.3.1.1	Foundations of 400 kV Gantries	5	Nos		
4.3.1.2	Foundations of 400 kV Capacitor Voltage Transformers	12	Nos		
1.5.1.2	& Tank Type Current Transformers	12	1105		
4.3.1.3	Foundation of 400 kV Surge Arrestor	12	Nos		
4.3.1.4	Foundations of 400 kV Post Type Insulator Bus Support	1	Lot		
7.5.1.7	1 oundations of 400 kV 1 ost Type insulator bus support	•	Lot		
4.3.1.5	Foundation, Oil Containment, and Sump Pit	7	Nos		
	For 400/220kV 167 MVA Single Phase Autotransformer	,	1,05		
	101 100/22014 10/ WIVII Single I hade I tave tave tave				
4.3.1.6	Autotransformer 22kg/m Railway System	7	Nos		
	(22kg/m Steel Rails, Rail Ties, Elastomeric Pad, Screws,				
	Baseplate, and Rail Clamps)				
4.3.1.7	Firewalls Between Auto Transformers	8	Nos		
4.3.1.8	Foundation for 400kV GIB Bus Runs to AIS Equipment	1	Lot		
		_			
4.3.1.9	Foundation of 33kV Post Type Insulator Bus Support	1	Lot		
4.3.1.10	Foundation of Station Service Transformer	2	Nos		
4.3.1.11	Foundation of 72.5kV Circuit Breaker	6	Nos		
4.3.1.12	Foundation of 72.5kV Current Transformer	6	Nos		
4.3.1.13	Foundation of 72.5kV Single Phase Switches	1	Lot		
4.3.1.14	Foundation of Diesel Generator Set & Fuel Tank	1	Lot		
4.3.1.15	Foundation of 30kV,10kA Lightning arrester for line	6	Nos		
	bays		1,00		
4.3.1.16	Foundations of 30kV,10kA Lightning arrester for	6	Nos		
	33/0.4kV station service transformers		1,00		
4.3.1.17	Foundation for Lightning Mast as required for total				
	protection of equipment	1	Lot		
4.3.1.18	Other necessary works as per Employer's Requirement and	1	Lot		
	Conditions of Contract, if any, not included above				
	(specify)				
	(1 - 1/2)		ı	Sub Total 4.3.1	
4.3.2	External Works and Landscaping				
4.3.2.1	Improvement of Access Road as required to Substation	1	Lot		
4.3.2.2	Internal Paving	1	Lot		
4.3.2.3	Landscaping, Including Maintenance up to Taking Over	1	Lot		
4.3.2.4	Construction of reinforced concrete trenches/duct banks	1			
	with manholes for all types of HV/MV power and control				
	cables between switchgear building, substation control				
	building and Autotransformer and all substation				
	equipment as specified in Scope and Employers				
	Requirements.				
4.3.2.5	Anti-weed treatment & stone spreading along with cement	1	Lot		
	concrete layer, Internal drainage system, external drainage				
	system and Sewage handling as per the Employer's				
	requirements.				
4.3.2.6	Superficial storm drainage system to drain water outside	1	Lot		
	substation during heavy rainfall				
4.3.2.7	River Protection Works and Retaining Wall.	1	Lot		
			_		
4.3.2.8	Parking Areas	1	Lot		
4.3.2.9	Guard House	1	Lot		
4.3.2.10	Substation Perimeter Fence	1	Lot		
4.3.2.11	Rain Water Harvesting as per the Employer's	1	Lot		
4 2 2 12	requirements.		т.		
4.3.2.12	Firefighting Pump House and Water Tank	1	Lot		
4.3.2.13	Security Lighting along the Fence and Inside the	1	Lot		
122:	Perimeter		-		
4.3.2.14	Other necessary works as per Employer's Requirement and	1	Lot		
1	Conditions of Contract, if any, not included above				
1			ī	i	
	(specify)		l	0.100 / 1422	
4.3.3	General			Sub Total 4.3.2	

#### Schedule No. 4.3: Breakdown of Civil Works

Item no.	Description	Qty	Unit	Unit Rate in US\$	Amount in US\$
			2	3	(1)x(3)
4.3.3.1	Mobilization & Demobilization, Site Infrastructure,	1	Lot		
	Temporary Works at site related to site activities.				
4.3.3.2	Final Cleanup (Including Removal of Excess Materials	1	Lot		
	and Temporary Works) Demobilization				
4.3.3.3	Supply and Installation of Water Supply System as per				
4.3.3.3	the Employer's requirements				
4.3.3.3	Other necessary works as per Employer's Requirement and	1	Lot		
	Conditions of Contract, if any, not included above				
	(specify)				
				Sub Total 4.3.3	
4.3.4	Substation Buildings				
4.3.4.1	Substation Control Building	1	Lot		
4.3.4.2	400kV GIS Building	1	Lot		
4.3.4.3	Other necessary works as per Employer's Requirement and	1	Lot		
	Conditions of Contract, if any, not included above				
	(specify)				
				Sub Total 4.3.4	
		T	otal(Carri	ed forward to SC-4)	
	Name of Bidder:				
	Signature of Bidder:			•	

#### Summary of Breakdown for Schedule 4.4 Day work

Description	Amount in US\$
1. Sub-Total for Day work: Labor (4.4.1)	
2. Sub-Total for Day work: Materials (4.4.2)	
3. Sub-Total for Day work: Contractor's Equipment (4.4.3)	
TOTAL (to be carried forward to Schedule 4.0)	
Name of Bidder:	
Signature of Bidder:	

Schedule No. 4.4.1: Breakdown of Day work Rates: Labor

Item	Description	Qty.	Unit	Unit Rate in	Amount in US\$
no.				US\$	
4.4.1	Supervision and Labor				
4.4.1.1	Engineer	350	h		
4.4.1.2	Foreman	400	h		
4.4.1.3	Surveyor	150	h		
4.4.1.4	Technician	600	h		
4.4.1.5	Skilled laborer	600	h		
4.4.1.6	Semiskilled laborer	600	h		
4.4.1.7	Unskilled laborer	600	h		
4.4.1.8	Other necessary works as per Employer's		specify		
	Requirement and Conditions of Contract, if				
	any, not included above (specify)				
		Tota	al(Carried fo	rward to SC-4.4)	
	Name	of Bidder:			
	Signature	of Bidder:			

Note: The labor rate should include all cost needed to provide the Labor at required place including all related cost for poviding the labour, ensuring that the labor is qualified for his/her job and can perform the required task professionally.

#### Schedule No. 4.4.2: Breakdown of Day work Rates: Materials

Item no.	Description	Qty.	Unit	Unit Rate in US\$	Amount in US\$
4.4.2.1	Concrete Work				
4.4.2.1.1	Lean Concrete	50	m3		
4.4.2.1.2	Concrete to foundation	150	m3		
4.4.2.1.3	Concrete to superstructure	200	m3		
4.4.2.2	Steel Reinforcement				
4.4.2.2.1	Mild Steel reinforcement, including cutting, bending	10	t		
4.4.2.2.2	High tensile steel reinforcement, including cutting, bending	25	t		
4.4.2.3	Structural Steel				
4.4.2.3.1	Commercial sections, including cutting, welding, bolting	10	t		
4.4.2.4	Excavation Work				
4.4.2.4.1	Excavation in rock (type R), including shoring, backfill, haul and disposal	200	m3		
4.4.2.4.2	Ditto, in soil (type MB and LB)	400	m3		
4.4.2.5	Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)				
4.4.2.6	Price for Control Point on Wave Switching Device (CPWSD) to be installed on 400kV Breaker supplied as per Schedule-2	1	No		
4.4.2.7	Price for Pre-Insertion Resistor (PIR) to be installed on 400kV Breaker supplied as per schedule-2	1	No		
4.4.2.8	Price for Stub-Bus Differential Protection for 400kV Future Bay	1	No		
			(Carried for	ward to SC-4.4)	
	Nam	e of Bidder:			
	Signatur	e of Bidder:			

Note: Quoted Unit Price shall include all the cost required to perform task successfully such as loading, transportation, insurance, unloading, cutting (if required), placing as per intended required task, while insuring the quality of the material and health and safety, storing at proper storage place with security and carrying out works as per Employer's requirement and Conditions of Contract.

Schedule No. 4.4.3: Breakdown of Day work Rates: Contractor's Equipment

Item no.	Description	Nominal	Unit	Basic hourly	Amount	
		quantity (hours)		rental rate		
4.4.3	Contractors' Equipment					
4.4.3.1	Concrete Mixer, up to 5 m3/h	20	h			
	Concrete Mixer, up to 3 m3/h Concrete Mixer, above to 5 m3/h	20	n h			
4.4.3.2	,					
4.4.3.3	Concrete Pump (Self-Propelled) up to 20 m3/h	40	h			
4.4.3.4	Concrete Pump (Self-Propelled) above to 20 m3/h	40	h			
4.4.3.5	Concrete batch plant, up to 20 m3/h	20	h			
4.4.3.6	Concrete batch plant, above 20 m3/h	20	h			
4.4.3.7	Transit mixer, up to 5 m3	40	h			
4.4.3.8	Transit mixer, above to 5 m3	40	h			
4.4.3.9	Bulldozer, with ripper, up to CAT D8 class	50	h			
4.4.3.10	Bulldozer, with ripper, above to CAT D8 class	50	h			
4.4.3.11	Track loader, up CAT 953 class	30	h			
4.4.3.12	Track loader, above CAT 953 class	50	h			
4.4.3.13	Wheel loader, up to CAT 930 class	50	h			
4.4.3.14	Wheel loader, above CAT 930 class	50	h			
4.4.3.15	Track excavator	100	h			
4.4.3.16	Air Compressor	100	h			
4.4.3.17	Mobile crane, up to 10 t	50	h			
4.4.3.18	Mobile crane, above 10 t, up to 20 t	50	h			
4.4.3.19	Mobile crane, above 20 t	50	h			
4.4.3.20	Lorry, up to 10 t	100	h			
4.4.3.21	Lorry, above 10 t	100	h			
4.4.3.22	Tipper, up to 10 t	100	h			
4.4.3.23	Tipper, above 10 t	100	h			
4.4.3.24	Pick-up	200	h			
4.4.3.25	Diesel generator, up to 100 kW	100	h			
4.4.3.26	Diesel generator, above 100 kW, up to 250 kW	100	h			
4.4.3.27	Diesel generator, above 250 kW	100	h			
4.4.3.28	Welding Set, Including Welding Rods	300	h			
		Total(Carried		ard to SC-4.4)		
		Name of Bidder:				
	Si	gnature of Bidder:				
Note:		Success of Diducts	·			

The Basic Hourly rates includes all cost that require to run and perform the task, such as Equipment rental with operator, maintenance of vehicle, running responsibility, health and safety protection, petrol, diesel, lubricants, driver, assistance etc. required for carrying the task with the equipment.

**Schedule No. 4.5: Other Installation Services** 

Item no.	Description Schedule No. 4.5 : Other Inst	Unit	Quantity	Unit Rate in	Amount in US\$
				US\$	
4.5.1	Environmental, Social, Health and Safety				
4.5.1.1	Management Plan General Mitigation Measures				
4.5.1.1.1	Develop a detailed Environmental, Social, Health, and	1	Lot		
	Safety (ESHS) Management Plan for Contractor's employees.				
4.5.1.1.2	Develop, provide training and enforce a Worker Code	1	Lot		
	of Conduct that includes an anti-sexual harassment policy				
4.5.1.1.3	Conduct Employee Induction Training on H&S and environmental/social/cultural sensitivity	1	Lot		
4.5.1.1.4	Implement Community Grievance Redress Plan	1	Lot		
4.5.1.1.5	Personal Protection equipment all complete (Safety Boots, Reflection Jackets, Safety Helmet, Safety	1	Lot		
	Goggles, Safety Mask, Safety earplugs, Safety hand gloves etc.)				
			S	ub Total 4.5.1.1	
<b>4.5.1.2</b> <b>4.5.1.2.1</b>	Physical Environment Mitigation Measures  Implement an Erosion and Sediment Control Plan	1	Lot		
4.5.1.2.1	Manage excavated soils	1	Lot		
4.5.1.2.3	Spray disturbed areas with water if substantive off-site fugitive dust impacts occur	1	Lot		
4.5.1.2.4	Provide a pit toilet and bury all organic wastes at tower construction sites	1	Lot		
4.5.1.2.5	Install septic systems/package and proper wastewater disposal system for workers	1	Lot		
4.5.1.2.6	Provide hazardous material training to concerned staff	1	Lot		
4.5.1.2.7	Stockpile materials for use in controlling spills	1	Lot		
4.5.1.2.8	Provide secondary containment for any fuel or hazardous materials	1	Lot		
4.5.1.2.9	Collect and segregate all waste for reuse, recycle, or disposal	1	Lot		
4.5.1.2.10	Dispose of solid waste at approved waste disposal facilities	1	Lot		
		<u>I</u>	S	ub Total 4.5.1.2	
4.5.1.3	Socio-economic and Cultural Environment Mitigation Measures				
4.5.1.3.1	Implement Workforce Management Plan	1	Lot		
4.5.1.3.2	Implement Worker Access Management Protocol	1	Lot		
4.5.1.3.3	Implement Traffic Management Plan and maintain the damaged roads caused by contractors	1	Lot		
4.5.1.3.4	Develop and Implement Worker Grievance Redress Mechanism	1	Lot		
4.5.1.3.5	Conduct community training on EMF risks	1	Lot	-1. T-4-1.45.1.2	
1514	Conday Social Inclusion and Countage TID Massaura		<u> </u>	ub Total 4.5.1.3	
<b>4.5.1.4</b> <b>4.5.1.4.1</b>	Gender, Social Inclusion and Counter-TIP Measures Develop and implement Anti-Sexual Harassment Policy, provide orientation to the entire workers	Lot	1		
4.5.1.4.2	Conduct awareness raising and community meetings to	Lot	1		
	encourage women, socially excluded, historically marginalized, vulnerable groups to apply for jobs				
4.5.1.4.3	Develop and Implement TIP Risk Management Plan	Lot	1		
4.5.1.4.4	Training to the Contractor's employees/staff on Gender and Social Inclusion, prevention on sexual harassment, gender-based violence, child labor and TIP	Lot	1		
4.5.1.4.5	Community TIP risk prevention sensitization and community consultation	Lot	1		
4.5.1.4.6	Community Grievance Redress Plan must have system of Anonymous reporting for TIP suspected cases	Lot	1		
	1		S	ub Total 4.5.1.4	

Schedule No. 4.5: Other Installation Services

Item no.	Description	Unit	Quantity	Unit Rate in US\$	Amount in US\$
4.5.2	Testing And Commissioning		I		I
4.5.2.1	Site Testing and Commissioning of HV AIS Equipment	1	Lot		
4.5.2.2	Site Testing and Commissioning of Power Autotransformers	1	Lot		
4.5.2.3	Site Testing and Commissioning of 400kV GIS Equipment	1	Lot		
4.5.2.4	Site Testing and Commissioning of Electrical Auxiliary Service Equipment and Power MV and LV Cables	1	Lot		
4.5.2.5	Site Testing and Commissioning of Mechanical Auxiliary Service Equipment	1	Lot		
4.5.2.6	One Month Commercial Operation after Commissioning	1	Lot		
4.5.2.7	End to End Test for all points as specified, including Control, Protection & Remote End Modification	1	Lot		
4.5.2.8	Closed loop test of equipment all complete	1	Lot		
4.5.2.9	PQ (Power Quality), Revenue Energy meter and all remaining equipment of S/S	1	Lot		
4.5.2.10	Other necessary works as per Employer's Requirement and Conditions of Contract, if any, not included above (specify)	1	Lot		
			I	Sub Total 4.5.2	
4.5.3	Training and O&M Assistance				
	Training at Manufacturers Work				
4.5.3.1	Control & Protection, Substation Automation System an	1	Lot		
4.5.3.2	400 kV GIS Equipment and System (Circuit Breaker, Iso	1	Lot		
	Training at Site				
4.5.3.3	Control & Protection (Refer PSR Section 3.18.1 for more details)	1	Lot		
4.5.3.4	Substation Automation System including the integration aspect of SCADA (Refer PSR Section 3.18.1 for more details)	1	Lot		
4.5.3.5	For 400kV Indoor GIS and Outdoor Switchyard Equipment (CT, CVT, Isolator and Circuit Breaker) Operation and Maintenance. (Refer PSR Section 3.18.1 for more details)	1	Lot		
4.5.3.6	Operation and maintenance of Transformers (Refer PSR Section 3.18.1 for more details)	1	Lot		
4.5.3.7	AC/DC auxiliaries and mechanical system (Refer PSR Section 3.18.1 for more details)	1	Lot		
4.5.3.8	Training at site for other systems (provide list)	1	Lot		
				Sub Total 4.5.3	
		Total	(Carried fo	orward to SC-4)	
	Name of E	idder:			
	Signature of E	idder:			

#### Price Schedule No. 5: Grand Summary

Item	Description	Total Price in US\$
5.1	Total Schedule No. 1. Design Services	
5.2	Total Schedule No. 2. Plant, and Mandatory Spare Parts Supplied from Abroad	
5.3	Total Schedule No. 3. Plant, and Mandatory Spare Parts Supplied from Within the Employer's Country	
5.4	Total Schedule No. 4. Installation and Other Services including all related Civil Works (Excluding Summary of Breakdown of Day works) (includes SC-4.1, SC-4.2, SC-4.3 and SC-4.5)	
5.5	TOTAL (to Bid Form - Resulting contract Price after correction if any)	
5.6	Output VAT (if applicable)	
5.7	Total including Output VAT (5.5+5.6)	
5.8	Total of Summary of Breakdown of Day works (to bid form) (from item No.4.6 of SC-4)	
5.9	Grand Total Including Day work for Evaluation and Comparison Purpose (5.5+5.8)	
	Name of Bidder:	
<b>.</b>	Signature of Bidder:	

#### Note:

Quoted Unit Price shall include all the cost required to perform task successfully such as all resources required to carry out the Work, personnel, material, equipemnt, loading, transportation, insurance, unloading and storing at proper storage place and carrying out works as per Employer's requirement and Conditions of Contract.

The purpose of price schedules is to identify the Bid Price which will be used to determine progress payment and tthe rates can be used to determine the price of any variation to scope. The Bid Price if accepted and included in the Contract shall become Contract Price and the Contract price shall not be adjusted (except as stated under Conditions of Contract under Sub-Clause 13.8) in case any quantity varies. The Price quoted under Price Schedule is as per provision of Employer's Requirements and Conditions of Contract.

#### Price Schedule No. 6: Recommended Spare Parts, Repair and Maintenance Tools (Breakdown of Rates)

Item   Description   Qty.   Total Price   CIP Price in US\$   EXW Price in   (CIP)	(EXW)
US\$	
foreign parts (Local Parts	
1 <u>3</u> <u>4</u> (1) x ((3)	(1)x((4)
	_
	+
( CIP and EXW) TOTAL	
Name of Bidder:	1
Signature of Bidder:	

#### Note:

The price of recommended spare parts quoted in Price Schedule No. 6 shall not be considered for evaluation. This is because such spare parts would normally be used after long time durations beyond the MCC Compact end date, and could not be financed from the Compact funds. Still the recommended spare parts may be financed directly by the government. Quoted Unit Price shall include all the cost required to perform task successfully such as loading, transportation, insurance, unloading and storing at proper storage place and carrying out works as per Employer's requirement and Conditions of Contract.

EXW-Works site in Nepal: All Plant and Mandatory Spare Parts Supplied within the country shall be quoted as EXW. The Contractor will also be responsible for other associate charge to bring all goods and equipment to site.

CIP-Works site in Nepal: All Plant and Mandatory Spare Parts Supplied from Abroad shall be quoted as CIP-Works site in Nepal basis. The Contractor will be responsible for custom clearance, insurance and other associate charge to bring all goods and equipment to site.

Quoted Unit Price shall include all the cost required to perform task successfully such as cost of goods, resouces, loading, transportation, insurance, unloading and storing at proper storage place.