NEPAL ELECTRICITY AUTHORITY

(An Undertaking of Government of Nepal) Project Management Directorate



KHIMTI-BARHABISE-LAPSIPHEDI 400 KV SUBSTATION PROJECT

A component of SASEC Power Transmission and Distribution System Strengthening Project

BIDDING DOCUMENT FOR

Procurement of Plant for

Design, Supply, Installation and Commissioning of 400 kV Gas insulated Substations (GIS) at New Khimti, Barhabise and Lapsiphedi

Single-Stage, Two-Envelope Bidding Procedure

Issued on: Invitation for Bids No.: OCB No.: Employer: Country: 21 May 2019 PMD/PTDSSP/KBL-75/76-01 PMD/PTDSSP/KBL-75/76-01 Nepal Electricity Authority Nepal

VOLUME –III OF III

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Khimti-Barhabise-Lapsiphedi 400 kV Substation Project Project Management Directorate Matatirtha, Chandragiri-11, Kathmandu,Nepal Telephone: +977-1-5164096

NEPAL ELECTRICITY AUTHORITY PROJECT MANAGEMENT DIRECTORATE Khimti-Barhabise-Lapsiphedi 400 kV Substation Project

400 kV(GIS)/220kV (GIS) New Khimti ,Barhabise and Lapsiphedi Substations

Schedule No. 5: Grand Summary

S. N.	Description	New Khimti Substation		Barhabise	Substation	Lapsephe	li Substation	Total of all three substations(New Khimti,Barhabise & Lapsiphedi)	
		Total Price Foreign ()*	Total Price Local (NPR)*	Total Price Foreign ()*	Total Price Local (NPR)*	Total Price Foreign ()*	Total Price Local (NPR)*	Total Price Foreign ()*	Total Price Local (NPR)*
1	TOTAL SCHEDULE NO. 1	1	2	1	2	1	2	1	2
	Plant and Equipment including Mandatory Spares to be supplied from abroad, including Type Test Charges for Type Tests to be conducted abroad.								
	Sub-Total 1								
2	TOTAL SCHEDULE NO. 2								
	Plant and Equipment including Mandatory Spares Parts to be supplied from within Nepal including Type Test Charges								
	Sub-Total 2					1			
3	TOTAL SCHEDULE NO. 3								
	Design Services								
	Sub-Total 3								
4	TOTAL SCHEDULE NO. 4								
	a. Installation & Construction Charges								
	b. Training Charges for Training to be imparted abroad								
	 c. Training Charges for Training to be imparted in Nepal 								
	d. Maintenance charges								
	e. Type test charges to be conducted abroad								
	Sub-Total 4								
	GRAND TOTAL Excluding Taxes & Customs [1+2+3+4(a)+4(b)+4 (c) +4 (d) + 4 (e)]								

Name of Bidder:

Signature of Bidder: (Printed Name) (Designation) (Common Seal)

NEPAL ELECTRICITY AUTHORITY PROJECT MANAGEMENT DIRECTORATE Khimti-Barhabise-Lapsiphedi 400 kV Substation Project

400 kV(GIS)/220kV (GIS) New Khimti Substation

Schedule No. 5: Grand Summary

		New Khimti	Substation
SI. No.	Description	Total Price Foreign ()*	Total Price Local ()*
1	TOTAL SCHEDULE NO. 1	1	2
	Plant and Equipment including Mandatory Spares to be supplied from abroad, including		
	Type Test Charges for Type Tests to be conducted abroad.		
	Sub-Total 1		
2	TOTAL SCHEDULE NO. 2		
	Plant and Equipment including Mandatory Spares Parts to be supplied from within Nepal		
	including Type Test Charges		
	Sub-Total 2		
3	TOTAL SCHEDULE NO. 3		
	Design Services		
	Sub-Total 3		
4	TOTAL SCHEDULE NO. 4		
	a. Installation Charges		
	b. Training Charges for Training to be imparted abroad		
	c. Training Charges for Training to be imparted in Nepal		
	d. Maintenance charges		
	e. Type test charges to be conducted abroad		
	Sub-Total 4		
	GRAND TOTAL Excluding Taxes & Customs [1+2+3+4(a)+4(b)+4 (c) +4 (d) + 4 (e)]		

Name of Bidder: Signature of Bidder: (Printed Name) (Designation) (Common Seal)

	3IS)/220kV (GIS) New Khimti Substation rice Schedule No. 1:Plant, and Mandatory Spares Parts to be supplied from abroad Description	Country of origin	Estimated			e including insurance, to site (Excluding Ta) in Nepal)	FC: Foreign Currency LC: Local Currency Total Amount (Excluding Taxes and Duties)	Custom, VAT and other taxe	
			Quantity	Unit		FC		FC	
			Quantity	Um	Currency#	Unit Rate	Total Amount		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)=(4)x(7)	(9) =(8)	(10)
Α	420kV SF6 Gas Insulated Switchgear and Accessories								
2)	420kV, 5000A SF6 GIS Bus Bar Module [Module description as per technical specification, Chapter 1- PSR]		2	Sets					
b)	420kV, 4000A SF6 GIS Line Feeder bay Module [Module description as per technical specification, Chapter 1- PSR]		2	Sets					
c)	420kV, 2000A, SF6 GIS Auto Transformer bay Module [Module description as per technical specification, Chapter 1- PSR]		2	Sets					
d)	420kV, SF6 GIS Tie bay Module [Module description as per technical specification, Chapter 1- PSR]								
i)	4000A		1	Sets					
ii) e)	2000A SF6 Gas Insulated Bus Duct (GIB) outside GIS Hall alongwith associated support structure and accessories		1	Sets					
i)	4000 A , 50kA for 1 sec. Single Phase		300	m					
ii)	2000 A, 50kA for 1 sec. Single Phase		200	m					
f)	400 kV, SF6 to Air Bushing alongwith associated support structure for Connecting GIS to AIS alongwith support structure								
i)	4000A, 50kA for 1 sec. Single Phase		6	nos					
	2000A, 50kA for 1 sec. Single Phase		6	nos					
	Sub Total (A)								
B)	245 kV SF6 Gas Insulated Switchgear and Accessories								
а	SF6 Gas Insulated Bus Duct (GIB) outside GIS Hall alongwith associated support structure and accessories								
a.1	2000A, 40kA for 1 sec. Single Phase		360	mtr.					
b	220kV, SF6 to Air Bushing alongwith associated support structure for Connecting GIS to AIS alongwith support structure								
b.1	2000A, 40kA for 1 sec. Single Phase		6	nos					
с	220kV, SF6 to Cable Bushing alongwith associated support structure for Connecting GIS to AIS alongwith support structure								
c.1	2000A, 40kA for 1 sec. Single Phase		6	nos					
	Sub Total (B)								

/ (GIS) New Khimti Substation dule No. 1:Plant, and Mandatory Spares Parts to be supplied from abroad							FC: Foreign Currency LC: Local Currency	
Description	Country of origin					clearing, forwarding and es and Duties applicable	Total Amount (Excluding Taxes and Duties)	Custom, VAT and other taxes
		Quantity	Unit		FC		FC	
				Currency#	ncy# Unit Rate Total Amount			
(2)	(3)	(4)	(5)	(6)	(7)	(8)=(4)x(7)	(9) =(8)	(10)
,400/ $\!\!\sqrt{3}$ /220/ $\!\sqrt{3}/33$ kV Single Phase Auto Transformer $$ as specified below								
400/v3 /220/v3/33 kV Single Phase Auto Transformer outdoor type, complete with and accessories including Main Control Cabinet, cooling control cabinet, RTCC .TC, and On line Dissolved Gas (Multi Gas) Analysis and moisture monitoring nline insulating oil drying system (Cartridge type) with optical temperature accessary inf for Delta formation of LV winding & Neutral Formation and Earthing Arrangement, tection device and all fittings & accessories as specified/ required for completion of of works as per technical specification (without transformer Oil)		4	Nos.					
ing oil for 105 MVA,400/ $\sqrt{3}$ /220/ $\sqrt{3}$ /33 kV Single Phase Autotransformer (* 1Lot = Oil utotransformers)		4	Lot*					
rent transformer (NCT) for autotransformer		1	Nos.					
I (C)								
FORMER								
3/0.4kV		1	Nos					
I (D)			1103					
utdoor Equipment								
urge Arrester (1-phase)		12	Nos.					
Pl(1-Ph)		12	Nos.					
l (E)								
utdoor Equipment								
urge Arrester (1-phase)		6	Nos.					
Pl(1-Ph)			Nos.					
l (F)		Ŭ	1100.				-	
			L	ł				
V, 600A, 31.5kA Circuit Breaker (3-phase) with support structure			No.					
V, 600A,31.5kA Isolators with earth switch (3-phase, DBR type)			No.					
/ PT.(1-phase)		-						
Surge Arrestors (1-Phase)				L				
V BPI (1-phase)		3	Nos.	L				
ıl (G)								
/ PT. Surge V BP	Arrestors (1-Phase) I (1-phase)	(1-phase) e Arrestors (1-Phase) I (1-phase)	(1-phase) 3 a Arrestors (1-Phase) 3 I (1-phase) 3	(1-phase) 3 Nos. a Arrestors (1-Phase) 3 Nos. I (1-phase) 3 Nos.	(1-phase) 3 Nos. 2 Arrestors (1-Phase) 3 Nos. I (1-phase) 3 Nos.	(1-phase) 3 Nos. a Arrestors (1-Phase) 3 Nos. I (1-phase) 3 Nos.	(1-phase) 3 Nos. a Arrestors (1-Phase) 3 Nos. [1-phase) 3 Nos.	(1-phase) 3 Nos. a Arrestors (1-Phase) 3 Nos.

	SIS)/220kV (GIS) New Khimti Substation rice Schedule No. 1:Plant, and Mandatory Spares Parts to be supplied from abroad							FC: Foreign Currency LC: Local Currency	
ltem No.	Description	Country of origin	/ Estimated				, clearing, forwarding and xes and Duties applicable		Custom, VAT and other taxes
			Quantity	Unit		FC		FC	
					Currency#		Total Amount		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)=(4)x(7)	(9) =(8)	(10)
н	Erection Hardware								
H.1	400kV One and Half Breaker-type layout for GIS termination arrangement				-		-		-
1	Insulator strings, Disc Insulators, Hardware, conductor, bus-bar materials, cable trays, Bay MB, clamps, spacers, connectors including equipment connectors, connectors for Transformers, Junction box, earthwire, earthing material risers, buried cable trenches/pipe equipment & lighting, all accessories etc. applicable for the following:								
1.1	Transformer Bay		2	bays					
2	Insulator strings, Disc Insulators, Hardware, conductor, bus-bar materials, cable trays, Bay MB, clamps, spacers, connectors including equipment connectors, Junction box, earthwire, earthing material risers, buried cable trenches/pipe equipment & lighting, all accessories etc. applicable for the following:								
2.1	Line Bay		2	bays					
H.2	220 kV DM-type layout for GIS termination arrangement of Transformer								
1	Insulator strings, Disc Insulators, Hardware, conductor, bus-bar materials, cable trays, Bay MB, clamps, spacers, connectors including equipment connectors, connectors for Transformers, Junction box, earthwire, earthing material risers, buried cable trenches/pipe equipment & lighting, all accessories etc. for the following:								
1.1	Transformer Bay		2	bays					
	Sub Total (H)								
<u> </u> 1	CONTROL RELAY AND PROTECTION PANELS (WITH AUTOMATION) 400kV								<u> </u>
	Circuit Breaker Relay Panel			1	1				1
a 1.1	CB Relay Panel With Auto Reclose		2	Sets	1				1
b	CB Relay Panel With out Auto Reclose		3	Sets					
1.2	Line Protection Panel		2	Sets					
1.3	Transformer Protection Panel (For both HV & MV side) as per Specification		1	Sets					
1.4	Bus Bar Protection Panel								
а	400kV (Duplicate Bus Bar Protection)		1	Set	L				_
b	Augmentation of existing 220 kV bus bar protection scheme		1	Lot					
2	Other/Common equipments Pertaining to C & R System		1	1					
а	Time synchronisation equipment		1	Nos.	T				T
b	Special Relay Test kit		1	Nos.					
	Sub Total (I)								

	GIS)/220kV (GIS) New Khimti Substation rice Schedule No. 1:Plant, and Mandatory Spares Parts to be supplied from abroad		FC: Foreign Currency LC: Local Currency						
ltem No.	Description	Country of origin					clearing, forwarding and es and Duties applicable	Total Amount (Excluding Taxes and Duties)	Custom, VAT and other taxes
			Quantity	Unit		FC		FC	
(1)	(2)	(3)	(4)	(5)	Currency# (6)	Unit Rate (7)	Total Amount (8)=(4)x(7)	(9) =(8)	(10)
(1)	(2)	(3)	(4)	(3)	(0)	(7)	(8)=(4)×(7)	(9) =(8)	(10)
J	SUBSTATION AUTOMATION								
1	Complete Substation automation system/ Augumentation Substation automation system- including hardware and software for the substation alongwith associated equipments for the following Main bays to be automated as per Technical Specification:								
а	400 kV System			Nos.					
b	220 kV System			Nos. Set		+			┞─────┤
2	For Auxiliary system Augumentations/Intregations of Operator Workstations (HMI) and all necessary accessories and software. In the present scope, bidder shall include BCUs required for 400 kV bays including all necessary hardware and software to integrate with the existing Substation Automation System including up-dation of system database, displays, and development of additional displays and reports all complete as per requirement.			Lot					
3	Integration of all 400/220kV Bays under present scope with the SCADA of SIEMENS (SINAUT Spectrum) at Load Dispatch Centre, Kathmandu including supply of Hardware, Software, accessories etc. all complete as per Technical Specification.		1	Lot					
	Sub Total (J)								
K	Visual monitoring system (VMS) system								
к а)	Visual monitoring system (VMS) as specified/required complete in all respect including HF Cable, Other necessary cabling and power supply system		1	Lot					
	Sub Total (K)								
	LT Switchgear		4	0					
a b	400V Main switchboard 400V ACDB		1	Set Set					
c	400V MLDB		1	Set					
d	400V Emergency LDB		1	Set					
	220V DCDB 48V/50V DCDB		1	Sets Sets					
1	Sub Total (L)		1	Seis					
М	Batteries								
a	220V		2	Nee		+			
b	600 AH 48V		2	Nos					
	600 AH		2	Nos	1	ł			
	Sub Total (M)								
N	Float Cum Boost Battery Charger								
a	220V Float Cum Boost Battery Charger 80A/80A		2	Nos					
<u> </u>		I	4	1105	I	L	1		I

	SIS)/220kV (GIS) New Khimti Substation rice Schedule No. 1:Plant, and Mandatory Spares Parts to be supplied from abroad							FC: Foreign Currency LC: Local Currency	
ltem No.	Description	Country of origin	Estim	ated		e including insurance to site (Excluding Ta in Nepal)	Total Amount (Excluding Taxes and Duties)	Custom, VAT and other taxes	
			Quantity	Unit		FC		FC	
					Currency#		Total Amount		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)=(4)x(7)	(9) =(8)	(10)
b	48V Float Cum Boost Battery Charger								
i	80A/80A		2	Nos					
	Sub Total (N)								
0	Fire Protection System								
a	Portable /Trolley/Wheel mounted extinguishers					1	1		
	9 litre water type		5	Nos					
ii	50 litre foam type		2	Nos					
iii	4.5 kg CO ₂ type		8	Nos					
iv	4.5 kg Dry Chemical Power (DCP) type		5	Nos					
b	Smoke detection system		1	Set					
с	Fire detection and Alarm System		1	Set					
d	Hydrant system, complete U/G piping and accessories etc. from existing HVW/Fire Hydrant point from Fire Fighting Pump House								
i	400 kV Substation		1	Set					
е	HVW spray system, Hydrant system and complete U/G & O/G piping and accessories etc. out side the pump house for Transformer / Reactor :								
i	105 MVA, 400/220 KV, 1-phase Autotransformer		4	nos					
	Sub Total (O)								
Р	Air conditioning & Ventilation System								
	High wall type split AC unit of 2 TR capacity for Air conditioning (AC) for LCC room of GIS Hall, Battery Room, Panel room cum administrative building		16	Nos					
b	Ventillation system for 400 kV GIS Hall		1	Lot					
	Sub Total (P)								
	Cables along with clamps, glands, lugs and straight joints etc.						-		
1	220 kV Cable 220 kV grade 1 core, 1200sq.mm.XLPE insulated copper cable as per technical specification	<u> </u>	1.50	km					
1.2	Cable end termination(s) on Gantry/Tower as per technical specification		6	nos.					
	Sub Total (Q)								
R	Fabrication, galvanising and supply of STEEL STRUCTURES (400kV Double Dead End Transmission Tower,Column, Gantry structures& Equipment support structures)								
	Lattice/pipe Structure for tower,Colums,beams and equipments including peak plates/pack washers and guest paltes including foundation bolts(nuts,washers,MS plate welded at the bottom)								

	SIS)/220kV (GIS) New Khimti Substation rice Schedule No. 1:Plant, and Mandatory Spares Parts to be supplied from abroad	FC: Foreign Currency LC: Local Currency							
ltem No.	Description	Country of origin	Estimated			e including insurance, to site (Excluding Ta) in Nepal)	Total Amount (Excluding Taxes and Duties)	Custom, VAT and other taxes	
			Quantity	Unit		FC		FC	
(4)	(2)	(2)	(4)	(5)		Unit Rate	Total Amount	(0) (0)	(40)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)=(4)x(7)	(9) =(8)	(10)
	Lattice stucture & foundation bolts		207	MT					
	Pipe Structure including Foundation Bolts .		19 2	MT MT					
	Fastners for tower,Columns,beams and equipment support structures Sub Total (R)		2	IVII					
	Earthing and lightning protection including necesaary connectors/connections, risers etc. complete in all respect (but excluding LM structures for Lightning protection)								
i	Earth Conductor (copper)		1	LS					
	Earth Rod (copper clad steel)		1	LS					
	Equipment for lightning protection		1	LS					
	Sub Total (S)								
	Illumination System								
а	Illumination System for GIS Hall and Control Building Complete as per Specification		1	LS					
b	Switchyard lighting		1	LS					
	Street lighting		1	LS					
	Sub Total (T)								
	POWER & CONTROL CABLES								
а	Power Cables(PVC) - (1.1kV grade)		1	LS					
	Power Cables (XLPE) - (1.1kV grade)		1	LS					
	Control Cable (PVC) - (1.1kV grade)		1	LS					
	Cable glands, lugs & straight through joints for Power & Control cables		1	LS					
	Sub Total (U)								
v	Communication & Associated System								
	Interfacing of SAS to Existing Communication & Associated System		1	Lot					
	Giga - Ethernet interfaces 10/100/1000 Mbps with Layer-2 switching Card					+			
	(Minimum 4 interfaces per Card.)		2	Nos					
	Sub Total (V)					<u> </u>			
w	EOT Crane								
1	EOT crane with suitable double Runway rails including trolley runway with conductors, fixtures, insulations size suitable to operate as and when required, complete with all accessories and slings as detailed in the specifications.		1	Set					
	Sub Total (W)								
Х	Digital Protection Coupler								
	Digital Protection Coupler		2	Nos					
	Sub Total (X)								

	SIS)/220kV (GIS) New Khimti Substation rice Schedule No. 1:Plant, and Mandatory Spares Parts to be supplied from abroad							FC: Foreign Currency LC: Local Currency	
ltem No.	Description	Country of origin	Estim	ated			, clearing, forwarding and xes and Duties applicable	Total Amount (Excluding Taxes and Duties)	Custom, VAT and other taxes
			Quantity	Unit	FC			FC	
					Currency#	Unit Rate	Total Amount		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)=(4)x(7)	(9) =(8)	(10)
X									
Y	PRE-ENGINEERED BUILDINGS 400 kV GIS Building including all supply materials from abroad except civil works and								ļ/
i)	for civil works refer schedule 4(a)								
(a)	400 kV GIS Hall		600	Sq. M.					
(a) (b)	AHU/ Panels Room		450	Sq. M. Sq. M.					P
(6)	Sub Total (Y)		400	0q. m.					
z	MANDATORY SPARES *(Break up of Lumpsum quantity shall be as per Annexure-I, Chapter-1, Project Specific Requirement)								
1	Gas Insulated Switchgear								
а	Mandatory Spares required during O&M of 400kV GIS Substation		1	LS					
2	400/220 kV, Auto Transformer		1	LS					
3	Surge Arrester								
а	336kV Surge Arrester		1	LS					
b	216kV Surge Arrester		1	LS					ļ
	Fire Fighting System		1	LS					ļ
5	Battery Charger		1	LS					ļ!
6	Relay & Protection panel		1	LS					Į′
7	Substation Automation System		1	LS					
8	Illumination System LT Switchgear		1	LS LS					'
9 10	ET Switchgear Erection hardware		1	LS		<u> </u>			┟─────┘
10	Bus Post Insulators			L3					<u> </u>
	420kV BPI (1-Ph)		1	nos					<u> </u>
a	Sub Total (Z)			1103					
	Grand Total of Schedule I								

Name of Bidder: Signature of Bidder: (Printed Name) (Designation) (Common Seal)

400 kV(GIS)/220kV (GIS) New Khimti Substation

	e No.2: Plant and Equipment including Mandatory Spares Parts to be supplied from	n within Nep	al				LC: Local Currency (ALL Price	in Local Currency)	
ltem No.	Item description	Quantity	Unit	Ex Faxtory	/ Price (Excluding VAT) in LC	Inlar	nd transportation to site in LC	Total Amount (Excluding Taxes)	VAT and other taxes
				Unit Rate	Amount	Unit Rate	Amount		1
1	2	3	4	5	6 = (3) x (5)	7	8=(3)x(7)	9=6+8	10
									+
									+
						-			+
									+
									1
									4
	Total for Schedule 2 (Total of column 9 to be carried forward to Schdule 5: Grand Summary)								

Note: 1) Bidder is required to quote prices in this Schedule for all the items in Schedule 1 which they wish to supply from within Nepal.

Name of Bidder: Signature of Bidder: (Printed Name) (Designation) (Common Seal)

400 kV(GIS)/220kV (GIS) New Khimti Substation Price Schedule No 3: Design Services

				Unit	Prices	Total	Prices
Item No.	Item Description	Esti	mated	Local Currency Portion	Foreign Currency Portion		
		Quantity	Unit	NRs	Currency	LC	FC
1	2	3	4	5	6	7=3x5	8=3x6
	NOT APPLICABLE						
	Total for Schedule 3 (Total of column 7 & 8 to be carried forward to Schdule 5: Grand Summary)						

NOTE: The design cost is included in schedule 1.

Name of Bidder: Signature of Bidder: (Printed Name) (Designation) (Common Seal)

Project Management Directorate Khimti-Barhabise-Lapsiphedi 400 kV Substation Project

400 kV(GIS)/220kV (GIS) New Khimti Substation Schedule No. 4 (a): Installation and Other Services

(a): Installation and Construction Charges

Country of Type & Estimated Installation Charges origin Designation Item Description No. Portion in Foreign Currency(FC) Portion in Nepalese Currency (in NPR) Quantity Unit Currency# Unit Rate Total Amount Unit Rate Total Charges (1) (2) (3) (4) (5) (6) (7 (8) (9)=(5)x(8) 10 (11)=(5)x(10) Installation services 420kV SF6 Gas Insulated Switchgear and Accessories Α 420kV, 5000A SF6 GIS Bus Bar Module [Module description as per technical specification a) 2 Sets Chapter 1- PSR] 420kV, 4000A SF6 GIS Line Feeder bay Module [Module description as per technical b) 2 Sets specification, Chapter 1- PSR] 420kV, 2000A, SF6 GIS Auto Transformer bay Module [Module C) 2 Sets description as per technical specification, Chapter 1- PSR] 420kV, SF6 GIS Tie bay Module [Module description as per d) technical specification, Chapter 1- PSR] i) 4000A Sets ii) 2000A 1 Sets SF6 Gas Insulated Bus Duct (GIB) outside GIS Hall alongwith associated support structure e) and accessories i) 4000 A , 50kA for 1 sec. Single Phase 300 m ii) 2000 A , 50kA for 1 sec. Single Phase 200 m 400 kV, SF6 to Air Bushing alongwith associated support structure for Connecting GIS to f) AIS alongwith support structure i) 4000A, 50kA for 1 sec. Single Phase 6 nos ii) 2000A, 50kA for 1 sec. Single Phase 6 nos B 245 kV SF6 Gas Insulated Switchgear and Accessories SF6 Gas Insulated Bus Duct (GIB) outside GIS Hall alongwith associated support structure a) and accessories a.1) 2000A, 40kA for 1 sec. Single Phase 360 mtr. 220kV, SF6 to Air Bushing alongwith associated support structure for Connecting GIS to b AIS alongwith support structure b.1 2000A, 40kA for 1 sec. Single Phase 6 nos 220kV, SF6 to Cable Bushing alongwith associated support structure for Connecting GIS to с AIS alongwith support structure c.1 2000A, 40kA for 1 sec. Single Phase 6 nos ub Total (B) 105 MVA,400/√3 /220/√3/33 kV Single Phase Auto Transformer as specified below

Page 1 of 9

FC: Foreign Currency LC: Local Currency

Nepal Electricity Authority

1 with RTC 1 mor tem For as s (with	(2) 5 MVA,400/√3 /220/√3/33 kV Single Phase Auto Transformer outdoor type, complete h all fittings and accessories including Main Control Cabinet, cooling control cabinet, CC panel, OLTC, and On line Dissolved Gas (Multi Gas) Analysis and moisture nitoring system, online insulating oil drying system (Cartridge type) with optical	(3)	(4)	Quantity (5)	Unit	Porti	on in Foreign Cur	rency(FC)	Portion in Nepalese	Currency (in NPR)
105 with RTC 1 mor tem Forn as s (with	5 MVA,400/√3 /220/√3/33 kV Single Phase Auto Transformer outdoor type, complete h all fittings and accessories including Main Control Cabinet, cooling control cabinet, CC panel, OLTC, and On line Dissolved Gas (Multi Gas) Analysis and moisture nitoring system, online insulating oil drying system (Cartridge type) with optical	(3)	(4)				Portion in Foreign Currency(FC)		Portion in Nepalese Currency (in NPR	
105 with RTC 1 mor tem Forn ass (with	5 MVA,400/√3 /220/√3/33 kV Single Phase Auto Transformer outdoor type, complete h all fittings and accessories including Main Control Cabinet, cooling control cabinet, CC panel, OLTC, and On line Dissolved Gas (Multi Gas) Analysis and moisture nitoring system, online insulating oil drying system (Cartridge type) with optical	(3)	(4)	(5)		Currency#	Unit Rate	Total Amount	Unit Rate	Total Charges
1 mor tem Sorr as s (with	h all fittings and accessories including Main Control Cabinet, cooling control cabinet, CC panel, OLTC, and On line Dissolved Gas (Multi Gas) Analysis and moisture nitoring system, online insulating oil drying system (Cartridge type) with optical			(-)	(6)	(7	(8)	(9)=(5)x(8)	10	(11)=(5)x(10)
_ Insu	nperature sensor,necessary arrangment for Delta formation of LV winding & Neutral rmation and Earthing Arrangement, surge protection device and all fittings & accessories specified/ required for completion of the scope of works as per technical specification thout transformer Oil)			4	Nos.					
	ulating oil for 105 MVA,400/ $\sqrt{3}$ /220/ $\sqrt{3}$ /33 kV Single Phase Autotransformer (* 1Lot = for 1 Autotransformers)			4	Lot*					
	kV Current transformer (NCT) for autotransformer			1	Nos.					
	b Total (C)				1100.					
D LT T	TRANSFORMER									
1 630) kVA, 33/0.4kV			1	Nos.					
Sul	b Total (D)									
E 420	0KV Outdoor Equipment									
	6KV Surge Arrester (1-phase)			6	Nos.					
	0kV BPI(1-Ph)			12	Nos.					
Sub	b Total (E)									
	5KV Outdoor Equipment									
	6KV Surge Arrester (1-phase)			-	Nos.					
	5kV BPI(1-Ph)			6	Nos.					
	b Total (F)									
	5kV EQUIPMENT									
	72.5 kV, 600A, 31.5kA Circuit Breaker (3-phase) with support structure				No.					
	72.5 kV, 600A,31.5kA Isolators with earth switch (3-phase, DBR type) 72.5kV, 600A, 31.5 kA with 120% extended rating CT (1- Phase)				No. Nos.					
	72.5kV PT.(1-phase)			-	NOS. NOS.					
	72.5KV P1.(1-phase) 30kV Surge Arrestors (1-Phase)			-	NOS. NOS.					
	72.5 kV BPI (1-phase)			-	NOS. NOS.					
	b Total (G)			3	1405.					
Jun										
H Ere	ection Hardware									
	0kV One and Half Breaker-type layout for GIS termination arrangement									
1 Insu 1 MB, Trai	ulator strings, Disc Insulators, Hardware, conductor, bus-bar materials, cable trays, Bay 8, clamps, spacers, connectors including equipment connectors, connectors for ansformers, Junction box, earthwire, earthing material risers, buried cable trenches/pipe ujpment & lighting, all accessories etc. applicable for the following:									

Item No.	Description	Country of origin Designation Estimated Installation Charges			I Installation					
NO.				Quantity	Unit	Port	ion in Foreign Cu	urrency(FC)	Portion in Nepales	e Currency (in NPR)
						Currency#	Unit Rate	Total Amount	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	(7	(8)	(9)=(5)x(8)	10	(11)=(5)x(10)
2	Insulator strings, Disc Insulators, Hardware, conductor, bus-bar materials, cable trays, Bay MB, clamps, spacers, connectors including equipment connectors, Junction box, earthwire, earthing material risers, buried cable trenches/pipe equipment & lighting, all accessories etc. applicable for the following:									
2.1	Line Bay			2	bays					
H.2	220 kV DM-type layout for GIS termination arrangement of Transformer									
1	Insulator strings, Disc Insulators, Hardware, conductor, bus-bar materials, cable trays, Bay MB, clamps, spacers, connectors including equipment connectors, connectors for Transformers, Junction box, earthwire, earthing material risers, buried cable trenches/pipe equipment & lighting, all accessories etc. for the following:									
1.1	Transformer Bay			2	bays					
	Sub Total (H)									
	CONTROL RELAY AND PROTECTION PANELS (WITH AUTOMATION)									
1	400kV									
	Circuit Breaker Relay Panel									
a	CB Relay Panel With Auto Reclose			2	Sets					
	CB Relay Panel With out Auto Reclose			- 3	Sets					
1.2	Line Protection Panel			2	Sets					
	Transformer Protection Panel (For both HV & MV side) as per Specification			-	0010					
				1	Sets					
1.3										
-	Bus Bar Protection Panel									
а	400kV (Duplicate Bus Bar Protection)			1	Set					
b	Augmentation of existing 220 kV bus bar protection scheme (For 1 Nos. of ICT bays as specified)			1	Lot					
2	Other/Common equipments Pertaining to C & R System									
а	Time synchronisation equipment			1	Nos.					
b	Special Relay Test kit			1	Nos.					
	Sub Total (I)									
J	SUBSTATION AUTOMATION									
1	Complete Substation automation system/ Augumentation Substation automation system- including hardware and software for the substation alongwith associated equipments for the following Main bays to be automated as per Technical Specification:									
a	400 kV System	-		6	Nos.		1	+		
a b	220 kV System				Nos.					
	For Auxiliary system				Set					
<u> </u>	n er namar, eyetem			· · ·	001					

Item	Description	Country of origin	Type & Designation	Estimated				Installation	Charges	ges	
No.				Quantity	Unit	Port	ion in Foreign Cu	rrency(FC)	Portion in Nepalese Currency (in NPR)		
						Currency#	Unit Rate	Total Amount	Unit Rate	Total Charges	
(1)	(2)	(3)	(4)	(5)	(6)	(7	(8)	(9)=(5)x(8)	10	(11)=(5)x(10)	
2	Augumentations/Intregations of Operator Workstations (HMI) and all necessary accessories and software. In the present scope, bidder shall include BCUs required for 400 kV bays including all necessary hardware and software to integrate with the existing Substation Automation System including up-dation of system database, displays, and development of additional displays and reports all complete as per requirement.			1	Lot						
	Integration of all 400/220kV 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						
	Sub Total (J)										
к	Visual monitoring system (VMS) system										
	Visual monitoring system (VMS) as specified/required complete in all respect including HF										
a)	Cable, Other necessary cabling and power supply system			1	Lot						
	Sub Total (K)										
L	LT Switchgear				0 /						
	400V Main switchboard 400V ACDB			1	Set Set						
	400V ACDB 400V MLDB			1	Set						
	400V Emergency LDB			1	Set						
	220V DCDB			1	Sets						
	48V/50V DCDB			1	Sets						
	Sub Total (L)										
	Batteries										
a	220V 600 AH			2	Nos						
b	48V			2	1105						
i	600 AH			2	Nos						
	Sub Total (M)										
	Float Cum Boost Battery Charger										
	220V Float Cum Boost Battery Charger										
	80A/80A			2	Nos						
b	48V Float Cum Boost Battery Charger							+			
1	80A/80A Sub Total (N)			2	Nos						
0	Fire Protection System										
	Portable /Trolley/Wheel mounted extinguishers						1	1			
i	9 litre water type			5	Nos			1			
ii	50 litre foam type			2	Nos						

ltem No.	Description	Country of origin	Type & Designation	Estim	ated	Installation Charges				
NO.				Quantity	Unit	Port	tion in Foreign Cu	rrency(FC)	Portion in Nepalese	Currency (in NPR)
						Currency#	Unit Rate	Total Amount	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	(7	(8)	(9)=(5)x(8)	10	(11)=(5)x(10)
iii	4.5 kg CO ₂ type			8	Nos					
iv	4.5 kg Dry Chemical Power (DCP) type			5	Nos					
b	Smoke detection system			1	Set					
С	Fire detection and Alarm System			1	Set					
d	Hydrant system, complete U/G piping and accessories etc. from existing HVW/Fire Hydrant point from Fire Fighting Pump House									
i	400 kV Substation			1	Set					
е	HVW spray system, Hydrant system and complete U/G & O/G piping and accessories etc. out side the pump house for Transformer / Reactor :									
i	105 MVA , 400/220 KV, 1-phase Autotransformer			4	nos					
	Sub Total (O)									
Р	Air conditioning & Ventilation System									
а	High wall type split AC unit of 2 TR capacity for Air conditioning (AC) for LCC room of GIS Hall, Battery Room, Panel room cum administrative building			16	Nos					
b	Ventillation system for 400 kV GIS Hall			1	Lot					
	Sub Total (P)									
Q	Cables along with clamps, glands, lugs and straight joints etc.									
1	220 kV Cable									
1.1	220 kV grade 1 core, 1200sq.mm.XLPE insulated copper cable as per technical specification			1.50	km					
1.2	Cable end termination(s) on Gantry/Tower as per technical specification			6	nos					
	Sub Total (Q)									
R	Fabrication, galvanising and supply of STEEL STRUCTURES (400kV Double Dead End Transmission Tower,Column, Gantry structures& Equipment support structures)									
	Lattice/pipe Structure for tower,Colums,beams and equipments including peak plates/pack washers and guest paltes including foundation bolts(nuts,washers,MS plate welded at the bottom)									
а	M.S Structural steel including Foundation Bolts .			207	MT					
b	Pipe Structure including Foundation Bolts .			19	MT					
С	Fastners for tower, Columns, beams and equipment support structures			2	MT					
	Sub Total (R)									
s	Earthing and lightning protection including necesaary connectors/connections, risers etc. complete in all respect (but excluding LM structures for Lightning protection)									
i	Earth Conductor (copper)			1	LS					
ii	Earth Rod (copper clad steel)			1	LS					
iii	Equipment for lightning protection			1	LS					

(a): Inst	i): Installation and Construction Charges										
ltem No.	Description	Country of origin	Type & Designation	Estim	ated	d Installation Charges		Charges			
NO.				Quantity	Unit	Port	ion in Foreign Cu	rrency(FC)	Portion in Nepalese	Currency (in NPR)	
						Currency#	Unit Rate	Total Amount	Unit Rate	Total Charges	
(1)	(2)	(3)	(4)	(5)	(6)	(7	(8)	(9)=(5)x(8)	10	(11)=(5)x(10)	
	Sub Total (S)										
Т	Illumination System										
a	Illumination System for GIS Halland Control Building Complete as per Specification			1	LS						
b	Switchyard lighting Street lighting			1	LS LS						
с	Sub Total (T)			1	LO						
U	POWER & CONTROL CABLES										
a	Power & CONTROL CABLES Power Cables(PVC) - (1.1kV grade)			1	LS						
a b	Power Cables (XLPE) - (1.1kV grade)			1	LS						
c	Control Cables (VEL 2) - (1.1kV grade)			1	LS						
d	Cable glands, lugs & straight through joints for Power & Control cables			1	LS						
	Sub Total (U)										
V	Communication & Associated System										
a	Interfacing of SAS to Existing Communication & Associated System			1	Lot						
	Giga - Ethernet interfaces 10/100/1000 Mbps with Layer-2 switching Card			0	Nee						
t	(Minimum 4 interfaces per Card.)			2	Nos						
	Sub Total (V)										
w	EOT Crane										
	EOT crane with suitable double Runway rails including trolley										
1	runway with conductors, fixtures, insulations size suitable			1	Set						
	to operate as and when required, complete with all accessories				Sei						
	and slings as detailed in the specifications.										
	Sub Total (W)										
X	Digital Protection Coupler										
1	Digital Protection Coupler			2	Nos						
	Sub Total (X)										
	Civil Construction Works (As per technical specifications)										
l	SECTION: A : NEA ASSESSED QUANTITIES										
1.0	Excavation in all types of soil and rock including backfilling disposal etc. for all leads and			12500	Cu.Mtr.						
1.0	lifts			12300	Ga.imu.						
2.0	Providing and laying of Plain Cement Concrete (PCC) (1:4:8)			800	Cu.Mtr.						
3.0	Providing and laying of Plain Cement Concrete (PCC) (1:2:4)				Cu.Mtr.						
4.0	Providing and laying of Reinforced Cement Concrete Design Mix (M25) including pre cast, shuttering, Grouting of pockets & underpinning but excluding steel reinforcement.			2310	Cu.Mtr.						
5.0	Providing and laying Plain Cement Concrete 1:5:10 (1 cement : 5 sand : 10 Stone aggregate)			330	Cu.Mtr.						
6.0	Steel Reinforcement (Fe 500)		1	210	MT						

Page 6 of 9

Item	Description	Country of origin	Type & Designation			Installation Charges				
No.				Quantity	Unit	Port	ion in Foreign Cເ	irrency(FC)	Portion in Nepalese	e Currency (in NPR)
						Currency#	Unit Rate	Total Amount	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	(7	(8)	(9)=(5)x(8)	10	(11)=(5)x(10)
7.0	Miscellaneous Structural steel used for rails, plates for rail fixing, gratings, gratings supports etc for transformer /reactor foundation,cable supportstand earthing cleats ,chequered plates, embedments, edge protection angles for cable trenches but excluding the reinforcement steel and steel for lattice and pipe structures which shall be paid seperately.			30	МТ					
8.0	Stone filling (40mm) over grating of Transformer /reactor Foundation			420	Cu.Mtr.					
9.0	Stone spreading including antiweed treatment in switchyard but excluding PCC.			4200	Sq. Mtr.					

ltem	Description	Country of origin	Type & Designation	Estimated				Installation	Charges	
No.				Quantity	Unit	Port	ion in Foreign Cu	rrency(FC)	Portion in Nepalese	e Currency (in NPR)
				,		Currency#	Unit Rate	Total Amount	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	(7	(8)	(9)=(5)x(8)	10	(11)=(5)x(10)
10.00	Supplying & laying hume pipe with collarsof grade (NP-3) but excluding reinforcement steel & concrete of bed/support/encasing of hume pipes which shall be paid seperately									
	250mm dia				RM					
,	300mm dia				RM					
	450mm dia 600mm dia				RM RM		-			
11.00	Concrete road (including all crossings) as per technical specification and approved drawing but excluding reinforcement & concrete									
a.	Concrete Road			400	Sq. m.					
	Construction of rail-cum-raod as per technical specification and approved drawing including all items such as excavation, compaction, rolling, watering, WBM, etc but excluding concrete, reinforcement and structural steel which shall be paid seperately									
a.	Section having four rails			250	Sq. m.					
13.0	Chain link fencing as per technical specification and approved drawing but excluding concrete which shall be paid seperately			456	RM					
14.0	switch yard Gate excluding concrete			2	No					
15.0	Dismantling & rerection of existing fence including sorting and stacking of serviceable & non-serviceable materials and disposal of debris as per the direction of engineer-in-charge			30	RM					
	Supplying and erecting dewatering pumps									
	5 HP				Nos.					
	0.5 HP			4	Nos.		-			
17.00	Drain including culverts but excluding concrete ,hume pipes & reinforcement steel which shall be paid seperately									
	Туре АА				RM					
	Туре ВВ				RM					
	Type CC				RM RM					
	Type DD External water supply as per technical from borewell to GIS Building including all items like			15	KIVI					
18.00	excavation, pipes, fittings, jointings, valves, chambers/manholes etc									
	80mm Dia GI Pipe				RM					
	25mm Dia GI Pipe			50	RM					
	External sewerage system including all item such as excavation, piping, pipe fittings, manholes, gali trap, gali chamber etc.									
	(i) 150 mm Dia.			75	RM					
20.0	Stone soling below foundations wherever specified in approved drawings during detailed engineering			90	Cu.Mtr.					
21.00	Site levelling									
	Earth work in excavation and filling in all types of soils including soft/disintegrated rock with all leads and lifts within sub station boundary			40000	Cu.Mtr.					

ltem No.	Description	Country of origin	FSTIMATED 1					Installation	Charges		
NO.				Quantity	Quantity Unit	Quantity Unit	Port	ion in Foreign Cι	irrency(FC)	Portion in Nepales	e Currency (in NPR)
						Currency#	Unit Rate	Total Amount	Unit Rate	Total Charges	
(1)	(2)	(3)	(4)	(5)	(6)	(7	(8)	(9)=(5)x(8)	10	(11)=(5)x(10)	
ii	Earth work in filling with borrowed earth with all leads and lifts including royalty, taxes etc			2000	Cu.Mtr.						
22.00	Construction of retaining wall with random rubble masonary in cement sand mortar (1:6) including levelling up with cement concrete (1:6:12), providing weep holes of PVC pipes (150 mm dia) with necessary filter material at the mouth of weep holes, 50 mm thick cement concrete (1:2:4) copping on the top of wall, 100 mm thick PCC (1:4:8) below RR masonary work, excavation of foundation for all lifts up to 3m above lower level. Item of excavation, PCC (1:2:4 & 1:4:8) shall be measured and paid seperately under respective items of BPS			1000	Cu.Mtr.						
23.0	PRE ENGINEERED BUILDINGS										
i)	400 KV GIS BUILDING All civil works related to pre-engineered 400 kV GIS Buliding to be supplied as per schedule 1 including internal cable trench, finishing(external & Internal) etc. complete as per technical specification and approved drawings, excluding excavation, PCC, RCC and reinforcement steel which shall be measured and paid seperately under respective items of BPS.										
(a)	GIS Hall			600	Sq. M.						
(b)	AHU/ Panels Room			450							
24	Geotechnical /Soil Investigation			1	LS						
	Total for Schedule 4(Total of column 9 and 11 to be carried forward to Schedule 5: Gr	and Summa	iry)								

Name of Bidder: Signature of Bidder: (Printed Name) (Designation) (Common Seal)

400 kV(GIS)/220kV (GIS) New Khimti Substation Schedule No. 4 : Installation and Other Services

(b):Training Charges for training to be imparted abroad (Common for all three substations)

SI. No.	Description	Item for which training is to be imparted.	Country where training is to be imparted		Training duration in days	Currency,	Training charge per Trainee per day	Total Training Charges
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)=(5)x(6)x(8)
	Training to Owners personnel on Design, testing and	i) GIS Equipments and System		4	5			
А	Maintenance aspect as per Technical Specification at	ii) Control & Protection and Substation		4	5			
<u>^</u>	manufacturer's works	Automation System						
		iii) EHV GIS Substation Design		4	5			
	Total for Training Charges							

REMARKS:

1. Training at Manufacturer's works: The Contractor shall include in the training charges payment of per Diem allowance to NEA trainees @ USD 150 per day per trainee for the duration of training abroad towards accommodation, meals and other incidental expenses and to and fro economy class air ticket from Nepal to place of training. The duration of training shall be excluding travelling period.

Name of Bidder: Signature of Bidder: (Printed Name) (Designation) (Common Seal)

400 kV(GIS)/220kV (GIS) New Khimti Substation

Schedule No. 4 : Installation and Other Services

(c):Training Charges for training to be imparted to Employer's Personnel by Bidder's Instructor in Nepal (Common for all three substations)

SI. No.	Description of the Test	Item for which training is to be imparted.	Training duration in days	Currency	Per Day Training Charges for Contractors Trainers	Total Training Charges
(1)	(2)	(3)	(4)	(5)	(6)	(7)=(4)x(6)
a)	On Job training on operation, maintenance and testing & commissioning aspectat at one Location in Nepal as per Technical Specification	i) Control & Protection ii) Substation Automation System including integration aspect of existing SCADA (of Siemens suppliedSINAUT Spectrum Software) at Load Dispatch Center	5			
		iii) GIS iv) Operation and Maintenance of Transformer & Reactors	5 5			
	Total for Training Charges					
Total for Schedule 4 (Total of column 7 to be carried forward to Schedule 5: Grand Summary)						

REMARKS:

2. On Job Training in Nepal: The traveling and living expenses of Owner's personnel for the training programme conducted in Nepal shall be borne by the Owner.

Name of Bidder: Signature of Bidder: (Printed Name) (Designation) (Common Seal)

NEPAL ELECTRICITY AUTHORITY PROJECT MANAGEMENT DIRECTORATE Khimti-Barhabise-Lapsiphedi 400 kV Substation Project

400 kV(GIS)/220kV (GIS) New Khimti Substation Schedule No. 4 : Installation and Other Services

(d): Maintenance Charges

SI No	Description	Unit	Qty.	Total Mair	tenance Charges
5114	Description	Onit	QUY.	Currency	Total Maintenance Charges
1	None	Year			
2	None	Year			
	Total for Schedule 4 (Total of column 5 to be carried forward to S				
	,				

Name of Bidder: Signature of Bidder: (Printed Name) (Designation) (Common Seal)

NEPAL ELECTRICITY AUTHORITY PROJECT MANAGEMENT DIRECTORATE

Khimti-Barhabise-Lapsiphedi 400 kV Substation Project

400 kV(GIS)/220kV (GIS) New Khimti Substation

Schedule No. 4 : Installation and Other Services

(e) : Type Test Charges for Type Tests to be conducted abroad.(Common for all three substations)

SI. No.		Description of Tests	Testing Location	TEST CHARGES		
			-	Currency	Amount	
1		2	3	4	5	
	400/2	220kV 1-Ph , 53.33 MVA Auto Transformer				
1		Temperature rise test				
2		Measurement of harmonic level in no load current				
3	400/220 kV, 53.33 MVA, 1-Ph Auto	Measurement of acoustic noise level				
4	Transformer	Measurement of Zero seq. reactance				
5		Measurement of power taken by fans and oil pumps				
6		Dynamic Short Circuit Test for only 1-Ph Auto Transformer				
	400	/220kV 1-Ph , 105 MVA Auto Transformer				
1		Temperature rise test				
2		Measurement of harmonic level in no load current]		
3	400/220 kV, 105 MVA, 1-Ph Auto	Measurement of acoustic noise level				
4	Transformer	Measurement of Zero seq. reactance				
5		Measurement of power taken by fans and oil pumps				
6		Dynamic Short Circuit Test for only 1-Ph Auto Transformer				
1	400 kV GIS Equipment	400 kV Gas Insulated Switchgear tests to be conducted as per relevant IEC				
	Total of Type Tests charges (Total o	f column 5 to be carried forward to Schedule 5: Grand Summary)				

Name of Bidder: Signature of Bidder: (Printed Name) (Designation) (Common Seal)

Nepal Electricity Authority

Project Management Directorate Khimti-Barhabise-Lapsiphedi 400 kV Substation Project

400 kV(GIS)/220kV (GIS) New Khimti Substation

Schedule No. 6: Recommended Availability/Opt	tional Spares Parts and recommended	Test Equipment in line with technical Specifications

Item No.	Name & Description of Parts	Name of Original	Part No.	Number of Units in	Total No. of Sets to	Unit Price	Total Price	Remarks
		Manufacturer		each set	be provided			
	None							

Name of Bidder: Signature of Bidder: (Printed Name) (Designation) (Common Seal)

NEPAL ELECTRICITY AUTHORITY PROJECT MANAGEMENT DIRECTORATE Khimti-Barhabise-Lapsiphedi 400 kV Substation Project

400 kV(GIS)/220kV (GIS) Barhabise Substation

Schedule No. 5: Grand Summary

		Barhabise S	Substation
SI. No.	Description	Total Price	Total Price
		Foreign ()*	Local ()*
1	TOTAL SCHEDULE NO. 1	1	2
	Plant and Equipment including Mandatory Spares to be supplied from abroad, including		
	Type Test Charges for Type Tests to be conducted abroad.		
	Sub-Total 1		
2	TOTAL SCHEDULE NO. 2		
	Plant and Equipment including Mandatory Spares Parts to be supplied from within Nepal		
	including Type Test Charges		
	Sub-Total 2		
3	TOTAL SCHEDULE NO. 3		
	Design Services		
	Sub-Total 3		
4	TOTAL SCHEDULE NO. 4		
	a. Installation Charges		
	b. Training Charges for Training to be imparted abroad		
	c. Training Charges for Training to be imparted in Nepal		
	d. Maintenance charges		
	e. Type test charges to be conducted abroad		
1	Sub-Total 4		
	GRAND TOTAL Excluding Taxes & Customs [1+2+3+4(a)+4(b)+4 (c) +4 (d) + 4 (e)]		
ł			

Name of Bidder: Signature of Bidder: (Printed Name) (Designation) (Common Seal)

•	SIS)/220kV (GIS) Barhabise Substation hedule No. 1:Plant, and Mandatory Spares Parts to be supplied from abroad							FC: Foreign Currency LC: Local Currency	
ltem No.	Description	Country of origin	Estim	ated			clearing, forwarding and s and Duties applicable in	Total Amount (Excluding Taxes and Duties)	Custom, VAT and other taxes
			Quantity	Unit		FC		FC	
					Currency#	Unit Rate	Total Amount		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)=(4)x(7)	(9) =(8)	(10)
Α	420kV SF6 Gas Insulated Switchgear and Accessories								
a)	420kV, 5000A SF6 GIS Bus Bar Module [Module description as per technical specification, Chapter 1- PSR]		2	Sets					
D)	420kV, 4000A SF6 GIS Line Feeder bay Module [Module description as per technical specification, Chapter 1- PSR]		4	Sets					
C)	420kV, 2000A, SF6 GIS Auto Transformer bay Module [Module description as per technical specification, Chapter 1- PSR]		2	Sets					
a)	420kV, 4000A, SF6 GIS Bus Shunt Reactor bay Module [Module description as per technical specification, Chapter 1- PSR]		1	Sets					
e)	420kV, SF6 GIS Tie bay Module [Module description as per technical specification, Chapter 1- PSR]								
i)	4000A		3	Sets					
ii)	2000A		1	Sets					
f)	SF6 Gas Insulated Bus Duct (GIB) outside GIS Hall alongwith associated support structure and accessories								
i)	4000 A , 50kA for 1 sec. Single Phase		750	m					
ii)	2000 A , 50kA for 1 sec. Single Phase		200	m					
g)	400 kV, SF6 to Air Bushing alongwith associated support structure for Connecting GIS to AIS alongwith support structure								
i)	4000A, 50kA for 1 sec. Single Phase		15	nos					
	2000A, 50kA for 1 sec. Single Phase		6	nos					
	Sub Total (A)								
	245 kV SF6 Gas Insulated Switchgear and Accessories								
	SF6 Gas Insulated Bus Duct (GIB) outside GIS Hall alongwith associated support structure and accessories								
	2000A, 40kA for 1 sec. Single Phase		240	mtr.					
	220kV, SF6 to Air Bushing alongwith associated support structure for Connecting GIS to AIS alongwith support structure								
b.1	2000A, 40kA for 1 sec. Single Phase		6	nos					
с	220kV, SF6 to Cable Bushing alongwith associated support structure for Connecting GIS to AIS alongwith support structure								
c.1	2000A, 40kA for 1 sec. Single Phase		6	nos					
	Sub Total (B)								
~									
с	53.33 MVA,400/ $\sqrt{3}$ /220/ $\sqrt{3}$ /33 $$ kV $$ Single Phase Auto Transformer as specified below								

•	SIS)/220kV (GIS) Barhabise Substation hedule No. 1:Plant, and Mandatory Spares Parts to be supplied from abroad							FC: Foreign Currency LC: Local Currency	
ltem No.	Description	Country of origin	Estin	nated			clearing, forwarding and s and Duties applicable in	Total Amount (Excluding Taxes and Duties)	Custom, VAT and other taxes
			Quantity	Unit		FC		FC	
					Currency#	Unit Rate	Total Amount		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)=(4)x(7)	(9) =(8)	(10)
1	53.33 MVA,400/ $\sqrt{3}$ /220/ $\sqrt{3}$ /33 kV Single Phase Auto Transformer outdoor type, complete with all fittings and accessories including Main Control Cabinet, cooling control cabinet, RTCC panel, OLTC, and On line Dissolved Gas (Multi Gas) Analysis and moisture monitoring system, online insulating oil drying system (Cartridge type) with optical temperature sensor, necessary arrangment for Delta formation of LV winding & Neutral Formation and Earthing Arrangement, surge protection device and all fittings & accessories as specified/ required for completion of the scope of works as per technical specification (without transformer Oil)		4	Nos.					
2	Insulating oil for 53.33 MVA,400/ $\sqrt{3}$ /220/ $\sqrt{3}$ /33 kV Single Phase Autotransformer (* 1Lot = Oil for 1 Autotransformers)		4	Lot*					
3	33kV Current transformer (NCT) for autotrasnformer		1	Nos					
	Sub Total (C)								
D	50MVAR, 420kV, three phase, 50 Hz Bus Shunt Reactor as specified below:								
1	50MVAR, 420kV, three phase, 50 Hz separate winding Shunt Reactor, oil immersed, ONAN cooled, outdoor type complete with all fittings and accessories including Bushing & Current Transformers as detailed in the specifications & each equipped with the following : i) On line insulating oil drying system (Cartridge type) ii) On line Dissolved Gas (Multi Gas) Analysis and moisture monitoring system with optical temperature sensor		1	Nos.					
2	Insulating oil for first filling plus 10% extra to account for spillage etc. during filling for the Shunt Reactor		1	lot					
	Sub Total (D)								
	LT TRANSFORMER 630 kVA, 33/0.4kV		1	Nos					
-	Sub Total (E)			1105					
	420KV Outdoor Equipment								
	336KV Surge Arrester (1-phase) 420kV BPI(1-Ph)			Nos. Nos.			+		
2	420kV BPI(1-Ph) Sub Total (F)		18	NOS.					
	245KV Outdoor Equipment								
	216KV Surge Arrester (1-phase)			Nos.					
	245kV BPI(1-Ph) Sub Total (G)		6	Nos.					
н	72.5kV EQUIPMENT								
1	72.5 kV, 600A, 31.5kA Circuit Breaker (3-phase) with support structure		1	No.					
2	72.5 kV, 600A,31.5kA Isolators with earth switch (3-phase, DBR type)			No.					
3	72.5kV, 600A, 31.5 kA with 120% extended rating CT (1- Phase)		3	Nos.					

	SIS)/220kV (GIS) Barhabise Substation hedule No. 1:Plant, and Mandatory Spares Parts to be supplied from abroad							FC: Foreign Currency LC: Local Currency	
ltem No.	Description	Country of origin	y of origin Estimated			including insurance, site (Excluding Taxe: Nepal)	Total Amount (Excluding Taxes and Duties)	Custom, VAT and other taxes	
			Quantity	Unit		FC		FC	
(4)		(0)	(1)	(7)	Currency#	Unit Rate	Total Amount	(0) (0)	(40)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)=(4)x(7)	(9) =(8)	(10)
4	72.5kV PT.(1-phase)			Nos.					
5	30kV Surge Arrestors (1-Phase)			Nos.					
6	72.5 kV BPI (1-phase)		3	Nos.					
	Sub Total (H)								
	Erection Hardware								
I.1	400kV One and Half Breaker-type layout for GIS termination arrangement								
-	Insulator strings, Disc Insulators, Hardware, conductor, bus-bar materials, cable trays, Bay MB, clamps, spacers, connectors including equipment connectors, connectors for Transformers, Junction box, earthwire, earthing material risers, buried cable trenches/pipe equipment & lighting, all accessories etc. applicable for the following:								
1.1	Transformer Bay		2	bays					
1.2	Reactor Bays		1	bays					
2	Insulator strings, Disc Insulators, Hardware, conductor, bus-bar materials, cable trays, Bay MB, clamps, spacers, connectors including equipment connectors, Junction box, earthwire, earthing material risers, buried cable trenches/pipe equipment & lighting, all accessories etc. applicable for the following:								
2.1	Line Bay		4	bays					
1.2	220 kV DM-type layout for GIS termination arrangement of Transformer								
1	Insulator strings, Disc Insulators, Hardware, conductor, bus-bar materials, cable trays, Bay MB, clamps, spacers, connectors including equipment connectors, connectors for Transformers, Junction box, earthwire, earthing material risers, buried cable trenches/pipe equipment & lighting, all accessories etc. for the following:								
	Transformer Bay		2	bays					
	Sub Total (I)								
	CONTROL RELAY AND PROTECTION PANELS (WITH AUTOMATION)								
	400kV								
1.1	Circuit Breaker Relay Panel								
а	CB Relay Panel With Auto Reclose		4	Sets					
b	CB Relay Panel With out Auto Reclose		6	Sets					
	Line Protection Panel		4	Sets		l .	1		
	Transformer Protection Panel (For both HV & MV side) as per Specification		1	Sets					
	Reactor Protection Panel as per specification		1	Sets					
	Bus Bar Protection Panel								
	400kV (Duplicate Bus Bar Protection)		1	Sets		1	1		
	Augmentation of existing 220 kV bus bar protection scheme (For 1 Nos. of ICT bays as specified)		<u>'</u>			1	1		
b			1	Lot					

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	ilS)/220kV (GIS) Barhabise Substation hedule No. 1:Plant, and Mandatory Spares Parts to be supplied from abroad							FC: Foreign Currency LC: Local Currency	
ltem No.	Description	Country of origin	Estin	nated		including insurance, site (Excluding Taxe Nepal)	Total Amount (Excluding Taxes and Duties)	Custom, VAT and other taxes	
			Quantity	Unit		FC	-	FC	
(4)	(0)	(2)	(4)	(5)	Currency#	Unit Rate	Total Amount	(0) (0)	(10)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)=(4)x(7)	(9) =(8)	(10)
	Other/Common equipments Pertaining to C & R System								
а	Time synchronisation equipment		1	Nos.					
	Special Relay Test kit		1	Nos.					
	Sub Total (J)								
К	SUBSTATION AUTOMATION								L
	Complete Substation automation system/ Augumentation Substation automation system- including hardware and software for the substation alongwith associated equipments for the following Main bays to be automated as per Technical Specification:								
1									
	400 kV System			Nos.					
	220 kV System			Nos.					
	For Auxiliary system		1	Set					
2	Augumentations/Intregations of Operator Workstations (HMI) and all necessary accessories and software. In the present scope, bidder shall include BCUs required for 400 kV bays including all necessary hardware and software to integrate with the existing Substation Automation System including up-dation of system database, displays, and development of additional displays and reports all complete as per requirement.		1	Lot					
3	Integration of all 400/220kV 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					
	Sub Total (K)								
a)	Visual monitoring system (VMS) system Visual monitoring system (VMS) as specified/required complete in all respect including HF Cable, Other necessary cabling and power supply system		1	Lot					
	Sub Total (L)								
	LT Switchgear		L	<u> </u>					
	400V Main switchboard		1	Set					
	400V ACDB			Set					
	400V MLDB		1	Set		+			
	400V Emergency LDB		1	Set					
	220V DCDB		1	Sets					
	48V/50V DCDB Sub Total (M)		1	Sets					
N									
	Batteries								
a	220V			- N		+			
	600 AH		2	Nos					
b	48V		I					1	

	GIS)/220kV (GIS) Barhabise Substation hedule No. 1:Plant, and Mandatory Spares Parts to be supplied from abroad							FC: Foreign Currency LC: Local Currency	
ltem No.	Description	Country of origin	Estim	ated			clearing, forwarding and s and Duties applicable in	Total Amount (Excluding Taxes and Duties)	Custom, VAT and other taxes
			Quantity	Unit				FC	
				(=)	Currency#	Unit Rate	Total Amount	(0) (0)	(1.5)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)=(4)x(7)	(9) =(8)	(10)
i	600 AH		2	Nos					
	Sub Total (N)								
	Float Cum Boost Battery Charger								
a	220V Float Cum Boost Battery Charger								
i	80A/80A		2	Nos					
b	48V Float Cum Boost Battery Charger		2	Nee		1	+		
1	80A/80A Sub Total (O)		2	Nos					
Р	Fire Protection System								
	Portable /Trolley/Wheel mounted extinguishers								
a	9 litre water type		5	Nos	-		-		
ii	50 litre foam type		2	Nos					
iii	4.5 kg CO ₂ type		8	Nos					
					-				
iv b	4.5 kg Dry Chemical Power (DCP) type Smoke detection system		5	Nos Set					
c D	Fire detection and Alarm System		1	Set					
d	Hydrant system, complete U/G piping and accessories etc. from existing HVW/Fire Hydrant point from Fire Fighting Pump House			Ger					
	400 kV Substation		1	Set	-		-		
	HVW spray system, Hydrant system and complete U/G & O/G piping and accessories etc. out			ઉંઘ					
f	side the pump house for Transformer / Reactor :								
i	53.33 MVA , 400/220 KV, 1-phase Autotransformer		4	nos					
	50 MVAR , 420 KV, Bus Reactor		1	Set					
	Sub Total (P)								
Q	Air conditioning & Ventilation System								
	High wall type split AC unit of 2 TR capacity for Air conditioning (AC) for								
а	LCC room of GIS Hall, Battery Room, Panel room cum administrative		16	Nos					
	building								
L.			1	l at					
b	Ventillation system for 400 kV GIS Hall Sub Total (Q)			Lot					
R	Cables along with clamps, glands, lugs and straight joints etc.								
1 1	220 kV Cable								1
1.1	220 kV grade 1 core, 1200sq.mm.XLPE insulated copper cable as per technical specification		1.50	km					
1.2	Cable end termination(s) on Gantry/Tower as per technical specification		6	nos.					
	Sub Total (R)								

	ilS)/220kV (GIS) Barhabise Substation hedule No. 1:Plant, and Mandatory Spares Parts to be supplied from abroad							FC: Foreign Currency LC: Local Currency	
ltem No.	Description	Country of origin	Estim	ated			clearing, forwarding and and Duties applicable in	Total Amount (Excluding Taxes and Duties)	Custom, VAT and other taxes
			Quantity	Unit				FC	
						Unit Rate	Total Amount		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)=(4)x(7)	(9) =(8)	(10)
s	Fabrication, galvanising and supply of STEEL STRUCTURES (400kV Double Dead End Transmission Tower,Column, Gantry structures& Equipment support structures)								
	Lattice/pipe Structure for tower,Colums,beams and equipments including peak plates/pack washers and guest paltes including foundation bolts(nuts,washers,MS plate welded at the bottom)								
	Lattice stucture & foundation bolts		274	MT					
	Pipe Structure including Foundation Bolts .		27	MT					
	Fastners for tower, Columns, beams and equipment support structures		3	MT					
	Sub Total (S)								
	Earthing and lightning protection including necesaary connectors/connections, risers etc. complete in all respect (but excluding LM structures for Lightning protection)								
i	Earth Conductor (copper)		1	LS					
	Earth Rod (copper clad steel)		1	LS					
	Equipment for lightning protection		1	LS					
	Sub Total (T)								
	Illumination System								
а	Illumination System for GIS Hall and Control Building Complete as per Specification		1	LS					
	Switchyard lighting		1	LS					
	Street lighting		1	LS					
	Sub Total (U)								
V	POWER & CONTROL CABLES								
	Power & CONTROL CABLES Power Cables(PVC) - (1.1kV grade)		1	LS			+		┼───┤
	Power Cables (FVC) - (1.1kV grade)		1	LS					
	Control Cable (PVC) - (1.1kV grade)		1	LS					
	Cable glands, lugs & straight through joints for Power & Control cables		1	LS					
	Sub Total (V)								
	Communication & Associated System								
	Interfacing of SAS to Existing Communication & Associated System		1	Lot					
b	Giga - Ethernet interfaces 10/100/1000 Mbps with Layer-2 switching Card		2	Nos					
-	(Minimum 4 interfaces per Card.)		_						
	Sub Total (W)								
x	EOT Crane								
<u>^</u>		I	I		I		L		

	SIS)/220kV (GIS) Barhabise Substation hedule No. 1:Plant, and Mandatory Spares Parts to be supplied from abroad							FC: Foreign Currency LC: Local Currency	
ltem No.	Description	Country of origin	Estim	nated			clearing, forwarding and s and Duties applicable in	Total Amount (Excluding Taxes and Duties)	Custom, VAT and other taxes
			Quantity	Unit		FC		FC	
					Currency#	Unit Rate	Total Amount		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)=(4)x(7)	(9) =(8)	(10)
1	EOT crane with suitable double Runway rails including trolley runway with conductors, fixtures, insulations size suitable to operate as and when required, complete with all accessories and slings as detailed in the specifications.		1	Set					
	Sub Total (X)								
Y	Digital Protection Coupler								
	Digital Protection Coupler		4	Nos					
	Sub Total (Y)		4	1105					
Z	PRE-ENGINEERED BUILDINGS								
i)	400 kV GIS Building including all supply materials from abroad except civil works and for civil works refer schedule 4(a)								
(a)	400 kV GIS Hall		700	Sq. M.					
(b)	AHU / Panels Room		500	Sq. M.					
	Sub Total (X)								
ZA	MANDATORY SPARES *(Break up of Lumpsum quantity shall be as per Annexure-I, Chapter-1, Project Specific Requirement)								
1	Gas Insulated Switchgear					-	-		
а	Mandatory Spares required during O&M of 400kV GIS Substation		1	LS					
	400/220 kV, Auto Transformer		1	LS					
	50 MVAR, 420kV Bus Reactor Surge Arrester		1	LS					
	336kV Surge Arrester		1	LS					
	216kV Surge Arrester		1	LS					
	Fire Fighting System		1	LS					
	Battery Charger		1	LS					
	Relay & Protection panel		1	LS					
	Substation Automation System		1	LS					
	Illumination System		1	LS					
	LT Switchgear		1	LS					
	Erection hardware		1	LS					
	Bus Post Insulators 420kV BPI (1-Ph)		1	200					
	420KV BPI (1-Ph) Sub Total (ZA)		1	nos					
	Grand Total of Schedule I								

Name of Bidder: Signature of Bidder: (Printed Name) (Designation) (Common Seal)

400 kV(GIS)/220kV (GIS) Barhabise Substation

edule No.2: Plant and Equ	uipment including Mandate	ory Spares Parts to be sup	plied from within Ne	pal	
10	edule No.2: Plant and Equ	edule No.2: Plant and Equipment including Mandato	edule No.2: Plant and Equipment including Mandatory Spares Parts to be sup	edule No.2: Plant and Equipment including Mandatory Spares Parts to be supplied from within Ne	nedule No.2: Plant and Equipment including Mandatory Spares Parts to be supplied from within Nepal

Schedul	e No.2: Plant and Equipment including Mandatory Spares Parts to be supplied from within Ne	LC: Local Currer	ncy (ALL Price in Local Cur	rency)					
ltem No.	Item description	Quantity	Unit		ce (Excluding VAT) in LC	Inland tr	ansportation to site in LC	Total Amount (Excluding Taxes)	VAT and other taxes
				Unit Rate	Amount	Unit Rate	Amount		Í
1	2	3	4	5	6 = (3) x (5)	7	8=(3)x(7)	9=6+8	10
									L
									+
									+
									+
									1
									1
									1
									<u> </u>
	Total for Schedule 2 (Total of column 9 to be carried forward to Schdule 5: Grand Summary)								4
	I oral for Schedule 2 (Total of column 9 to be carried forward to Schdule 5: Grand Summary)								1

Note: 1) Bidder is required to quote prices in this Schedule for all the items in Schedule 1 which they wish to supply from within Nepal.

Name of Bidder: Signature of Bidder: (Printed Name) (Designation) (Common Seal)

400 kV(GIS)/220kV (GIS) Barhabise Substation Price Schedule No 3: Design Services

				Unit	Prices	Total Price	:es
Item No.	Item Description	Esti	mated	Local Currency Portion	Foreign Currency Portion		
		Quantity	Unit	NRs	Currency	LC	FC
1	2	3	4	5	6	7=3x5	8=3x6
							<u> </u>
	NOT APPLICABLE						
							
	Total for Schedule 3 (Total of column 7 & 8 to be carried forward to Schdule 5: Grand Summary)						

NOTE: The design cost is included in schedule 1.

Name of Bidder: Signature of Bidder: (Printed Name) (Designation) (Common Seal)

400 kV(GIS)/220kV (GIS) Barhabise Substation
Schedule No. 4 (a): Installation and Other Services
(a): Installation and Construction Charges

Item No.	Description	Country of origin	Type & Designatio n	Estima	ated	Installation Charges				
NO.				Quantity	Unit	Portion in Foreign Currency(FC)			Portion in Nepalese Currency (in NPR)	
						Currency#	Unit Rate	Total Amount	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	(7	(8)	(9)=(5)x(8)	10	(11)=(5)x(10)
	Installation services									
Α	420kV SF6 Gas Insulated Switchgear and Accessories									
a)	420kV, 5000A SF6 GIS Bus Bar Module [Module description as per technical specification, Chapter 1- PSR]			2	Sets					
b)	420kV, 4000A SF6 GIS Line Feeder bay Module [Module description as per technical specification, Chapter 1- PSR]			4	Sets					
c)	420kV, 2000A, SF6 GIS Auto Transformer bay Module [Module description as per technical specification, Chapter 1- PSR]			2	Sets					
d)	420kV, 4000A, SF6 GIS Bus Shunt Reactor bay Module [Module description as per technical specification, Chapter 1- PSR]			1	Sets					
e)	420kV, SF6 GIS Tie bay Module [Module description as per technical specification, Chapter 1- PSR]									
i)	4000A			3	Sets					
ii)	2000A			1	Sets					
f)	SF6 Gas Insulated Bus Duct (GIB) outside GIS Hall alongwith associated support structure and accessories									
i)	4000 A, 50kA for 1 sec. Single Phase			750	m					
ii)	2000 A , 50kA for 1 sec. Single Phase			200	m					
g)	400 kV, SF6 to Air Bushing alongwith associated support structure for Connecting GIS to AIS alongwith support structure									
i)	4000A, 50kA for 1 sec. Single Phase			15	nos					
	2000A, 50kA for 1 sec. Single Phase			6	nos					
	Sub Total (A)									
B	245 kV SF6 Gas Insulated Switchgear and Accessories		ł							
,	SF6 Gas Insulated Bus Duct (GIB) outside GIS Hall alongwith associated support structure and accessories									
	2000A, 40kA for 1 sec. Single Phase			240	mtr.					
	220kV, SF6 to Air Bushing alongwith associated support structure for Connecting GIS to AIS alongwith support structure									
	2000A, 40kA for 1 sec. Single Phase			6	nos					
с	220kV, SF6 to Cable Bushing alongwith associated support structure for Connecting GIS to AIS alongwith support structure									
c.1	2000A, 40kA for 1 sec. Single Phase	l	İ	6	nos					
Ĭ	Sub Total (B)									
с	53.33 MVA,400/ $\sqrt{3}$ /220/ $\sqrt{3}$ /33 kV Single Phase Auto Transformer as specified below									

ltem No.	Description	Country of origin	Type & Designatio n	
NO.				

FC: Foreign Currency LC: Local Currency

Item	Description	Country of origin	Type & Designatio n	Estim	ated	Installation		Installation	Charges		
No.				Quantity	Unit	Por	tion in Foreig	n Currency(FC)	Portion in Nepalese	e Currency (in NPR)	
						Currency#	Unit Rate	Total Amount	Unit Rate	Total Charges	
(1)	(2)	(3)	(4)	(5)	(6)	(7	(8)	(9)=(5)x(8)	10	(11)=(5)x(10)	
1	53.33 MVA,400/v/3 /220/v/3/33 kV Single Phase Auto Transformer outdoor type, complete with all fittings and accessories including Main Control Cabinet, cooling control cabinet, RTCC panel, OLTC, and On line Dissolved Gas (Multi Gas) Analysis and moisture monitoring system, online insulating oil drying system (Cartridge type) with optical temperature sensor, necessary arrangment for Delta formation of LV winding & Neutral Formation and Earthing Arrangement, surge protection device and all fittings & accessories as specified/ required for completion of the scope of works as per technical specification (without transformer Oil)			4	Nos.						
2	Insulating oil for 53.33 MVA,400/ $\sqrt{3}$ /220/ $\sqrt{3}$ /33 kV Single Phase Autotransformer (* 1Lot = Oil for 1 Autotransformers)			4	Lot*						
3	33kV Current transformer (NCT) for autotrasnformer			1	Nos.						
	Sub Total (C)										
D	50MVAR, 420kV, three phase, 50 Hz Bus Shunt Reactor as specified below:										
1	50MVAR, 420kV, three phase, 50 Hz separate winding Shunt Reactor, oil immersed, ONAN cooled, outdoor type complete with all fittings and accessories including Bushing & Current Transformers as detailed in the specifications & each equipped with the following : i) On line insulating oil drying system (Cartridge type) ii) On line Dissolved Gas (Multi Gas) Analysis and moisture monitoring system with optical temperature sensor			1	Nos.						
2	Insulating oil for first filling plus 10% extra to account for spillage etc. during filling for the Shunt Reactor			1	lot						
	Sub Total (D)										
E	LT TRANSFORMER										
1	630 kVA, 33/0.4kV			1	Nos.						
	Sub Total (E)										
F	420KV Outdoor Equipment										
	336KV Surge Arrester (1-phase)			18	Nos.						
	420kV BPI(1-Ph)				Nos.						
	Sub Total (F)										
	245KV Outdoor Equipment										
	216KV Surge Arrester (1-phase)				Nos.						
2	245kV BPI(1-Ph)			6	Nos.						
	Sub Total (G)										
н	72.5kV EQUIPMENT										
1	72.5 kV, 600A, 31.5kA Circuit Breaker (3-phase) with support structure				No.						
2	72.5 kV, 600A,31.5kA Isolators with earth switch (3-phase, DBR type)				No.						
3	72.5kV, 600A, 31.5 kA with 120% extended rating CT (1- Phase)			-	Nos.						
4	72.5kV PT.(1-phase)				Nos.						
5	30kV Surge Arrestors (1-Phase)			3	Nos.						

Page 2 of 8

Item	Description	Country of origin	Type & Designatio n	Estima	ited			Installation	Charges	
No.				Quantity	Unit	Por	tion in Foreig	In Currency(FC)	Portion in Nepalese	Currency (in NPR)
						Currency#	Unit Rate	Total Amount	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	(7	(8)	(9)=(5)x(8)	10	(11)=(5)x(10)
6	72.5 kV BPI (1-phase)			3	Nos.					
	Sub Total (H)									
I	Erection Hardware									
l.1	400kV One and Half Breaker-type layout for GIS termination arrangement									
1	Insulator strings, Disc Insulators, Hardware, conductor, bus-bar materials, cable trays, Bay MB, clamps, spacers, connectors including equipment connectors, connectors for Transformers, Junction box, earthwire, earthing material risers, buried cable trenches/pipe equipment & lighting, all accessories etc. applicable for the following:									
1.1	Transformer Bay			2	bays					
1.2	Reactor Bay			1	bays					
2	Insulator strings, Disc Insulators, Hardware, conductor, bus-bar materials, cable trays, Bay MB, clamps, spacers, connectors including equipment connectors, Junction box, earthwire, earthing material risers, buried cable trenches/pipe equipment & lighting, all accessories etc. applicable for the following:									
2.1	Line Bay			4	bays					
1.2	220 kV DM-type layout for GIS termination arrangement of Transformer				,					
1	Insulator strings, Disc Insulators, Hardware, conductor, bus-bar materials, cable trays, Bay MB, clamps, spacers, connectors including equipment connectors, connectors for Transformers, Junction box, earthwire, earthing material risers, buried cable trenches/pipe equipment & lighting, all accessories etc. for the following:									
1.1	Transformer Bay			2	bays					
	Sub Total (I)									
J	CONTROL RELAY AND PROTECTION PANELS (WITH AUTOMATION)									
1	400kV									
	Circuit Breaker Relay Panel									
а	CB Relay Panel With Auto Reclose			4	Sets					
b	CB Relay Panel With out Auto Reclose			6	Sets					
	Line Protection Panel			4	Sets					
	Transformer Protection Panel (For both HV & MV side) as per Specification			1	Sets					
	Reactor Protection Panel as per specification			1	Sets					
	Bus Bar Protection Panel									
a b	400kV (Duplicate Bus Bar Protection) Augmentation of existing 220 kV bus bar protection scheme (For 1 Nos. of ICT bays as specified)			1	Sets Lot					
2	Other/Common equipments Pertaining to C & R System									
a	Time synchronisation equipment			1	Nos.					
b	Special Relay Test kit			1	Nos.					
~	Sub Total (J)									
к	SUBSTATION AUTOMATION									

Item No.	Description	Country of origin	Type & Designatio n	Estim	ated	Installation Charges				
NO.				Quantity	Unit	Por	tion in Foreig	n Currency(FC)	Portion in Nepalese	Currency (in NPR)
						Currency#	Unit Rate	Total Amount	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	(7	(8)	(9)=(5)x(8)	10	(11)=(5)x(10)
1	Complete Substation automation system/ Augumentation Substation automation system- including hardware and software for the substation alongwith associated equipments for the following Main bays to be automated as per Technical Specification:									
a b	400 kV System 220 kV System				Nos. Nos.					
c	For Auxiliary system				Set					
2	Augumentations/Intregations of Operator Workstations (HMI) and all necessary accessories and software. In the present scope, bidder shall include BCUs required for 400 kV bays including all necessary hardware and software to integrate with the existing Substation Automation System including up-dation of system database, displays, and development of additional displays and reports all complete as per requirement.				Lot					
3	Integration of all 400/220kV 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					
	Sub Total (K)									
L	Visual monitoring system (VMS) system Visual monitoring system (VMS) as specified/required complete in all respect including HF Cable,									
a)	Other necessary cabling and power supply system			1	Lot					
	Sub Total (L)									
	LT Switchgear 400V Main switchboard			1	Set					
	400V ACDB			1	Set					
	400V MLDB			1	Set					
	400V Emergency LDB			1	Set					
e	220V DCDB			1	Sets					
f	48V/50V DCDB			1	Sets					
	Sub Total (M)									
N	Batteries									
a	220V									
i	600 AH			2	Nos		1			
b	48V									
i	600 AH			2	Nos					
	Sub Total (N)									
0	Float Cum Boost Battery Charger									
a	220V Float Cum Boost Battery Charger						<u> </u>			
i	80A/80A			2	Nos					
b	48V Float Cum Boost Battery Charger									

Item No.	Illation and Construction Charges Description	Country of origin	Type & Designatio n	Estima	ated			Installatior	n Charges	
				Quantity	Unit			gn Currency(FC)		e Currency (in NPR)
						Currency#		Total Amount	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	(7	(8)	(9)=(5)x(8)	10	(11)=(5)x(10)
i	80A/80A			2	Nos					
	Sub Total (O)									
Р										
a P	Fire Protection System Portable /Trolley/Wheel mounted extinguishers									
i	9 litre water type			5	Nos					
ü	50 litre foam type			2	Nos					
iii	4.5 kg CO ₂ type			8	Nos					
iv	4.5 kg Dry Chemical Power (DCP) type			5	Nos					
b	Smoke detection system			1	Set					
С	Fire detection and Alarm System			1	Set					
d	Hydrant system, complete U/G piping and accessories etc. from existing HVW/Fire Hydrant point from Fire Fighting Pump House									
i	400 kV Substation			1	Set					
f	HVW spray system, Hydrant system and complete U/G & O/G piping and accessories etc. out side the pump house for Transformer / Reactor :									
i	53.33 MVA , 400/220 KV, 1-phase Autotransformer			4	nos					
ii	50 MVAR , 420 KV, Bus Reactor			1	Set					
	Sub Total (P)									
Qa	Air conditioning & Ventilation System High wall type split AC unit of 2 TR capacity for Air conditioning (AC) for LCC room of GIS Hall, Battery Room, Panel room cum administrative building			16	Nos					
b	Ventillation system for 400 kV GIS Hall			1	Lot					
	Sub Total (Q)									
R	Cables along with clamps, glands, lugs and straight joints etc. 220 kV Cable									
1.1	220 kV Gable 220 kV grade 1 core, 1200sq.mm.XLPE insulated copper cable as per technical specification			1.50	km					
1.2	Cable end termination(s) on Gantry/Tower as per technical specification			6	nos					
	Sub Total (R)									
s	Fabrication, galvanising and supply of STEEL STRUCTURES (400kV Double Dead End Transmission Tower,Column, Gantry structures& Equipment support structures)									
	Lattice/pipe Structure for tower,Colums,beams and equipments including peak plates/pack washers and guest paltes including foundation bolts(nuts,washers,MS plate welded at the bottom)									
а	Lattice stucture & foundation bolts			274	MT					
b	Pipe Structure including Foundation Bolts .			27	MT					
с	Fastners for tower, Columns, beams and equipment support structures			3	MT					
	Sub Total (S)									

Item	Description	Country of origin	Type & Designatio n	Estima	ated			Installation	n Charges	
No.				Quantity	Unit	Por	tion in Foreiç	n Currency(FC)	Portion in Nepalese	e Currency (in NPR)
						Currency#	Unit Rate	Total Amount	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	(7	(8)	(9)=(5)x(8)	10	(11)=(5)x(10)
т	Earthing and lightning protection including necessary connectors/connections, risers etc. complete in all respect (but excluding LM structures for Lightning protection)									
i	Earth Conductor (copper)			1	LS					
	Earth Rod (copper clad steel)			1	LS					
	Equipment for lightning protection			1	LS					
	Sub Total (T)									
U	Illumination System									
а	Illumination System for GIS Halland Control Building Complete as per Specification			1	LS					
С	Switchyard lighting			1	LS					
	Street lighting			1	LS					
	Sub Total (U)									
	POWER & CONTROL CABLES									
а	Power Cables(PVC) - (1.1kV grade)			1	LS					
	Power Cables (XLPE) - (1.1kV grade)			1	LS					
	Control Cable (PVC) - (1.1kV grade)			1	LS					
	Cable glands, lugs & straight through joints for Power & Control cables			1	LS					
	Sub Total (V)									
w	Communication & Associated System									
	Interfacing of SAS to Existing Communication & Associated System			1	Lot					
a	Giga - Ethernet interfaces 10/100/1000 Mbps with Layer-2 switching Card									
b	(Minimum 4 interfaces per Card.)			2	Nos.					
	Sub Total (W)									
Х	EOT Crane									
1	EOT crane with suitable double Runway rails including trolley runway with conductors, fixtures, insulations size suitable to operate as and when required, complete with all accessories and slings as detailed in the specifications.			1	Set					
	Sub Total (X)									
Y	Digital Protection Coupler									
	Digital Protection Coupler			4	Nos					
	Sub Total (Y)									
	Civil Construction Works (As per technical specifications) SECTION: A : NEA ASSESSED QUANTITIES									
	SECTION: A : NEA ASSESSED QUANTITIES									
1.0	Excavation in all types of soil and rock including backfilling disposal etc. for all leads and lifts			13750	Cu.Mtr.					
2.0	Providing and laying of Plain Cement Concrete (PCC) (1:4:8)			880	Cu.Mtr.					
3.0	Providing and laying of Plain Cement Concrete (PCC) (1:2:4)			83	Cu.Mtr.					

Item	Description	Country of origin	Type & Designatio n	Estima	ated	Installation Charges				
No.				Quantity	Unit	Port	tion in Foreig	n Currency(FC)	Portion in Nepalese	Currency (in NPR)
						Currency#	Unit Rate	Total Amount	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	(7	(8)	(9)=(5)x(8)	10	(11)=(5)x(10)
	Providing and laying of Reinforced Cement Concrete Design Mix (M25) including pre cast, shuttering, Grouting of pockets & underpinning but excluding steel reinforcement.			4235	Cu.Mtr.					
5.0	Providing and laying Plain Cement Concrete 1:5:10 (1 cement : 5 sand : 10 Stone aggregate)			605	Cu.Mtr.					
6.0	Steel Reinforcement (Fe 500)			385	MT					
7.0	Miscellaneous Structural steel used for rails, plates for rail fixing, gratings, gratings supports etc for transformer /reactor foundation, cable supportstand earthing cleats, chequered plates, embedments, edge protection angles for cable trenches but excluding the reinforcement steel and steel for lattice and pipe structures which shall be paid seperately.			55	МТ					
8.0	Stone filling (40mm) over grating of Transformer /reactor Foundation			770	Cu.Mtr.					
	Stone spreading including antiweed treatment in switchyard but excluding PCC.			7700	Sq. Mtr.					
10.00	Supplying & laying hume pipe with collarsof grade (NP-3) but excluding reinforcement steel & concrete of bed/support/encasing of hume pipes which shall be paid seperately									
	250mm dia				RM					
,	300mm dia				RM					
/	450mm dia				RM	_				
iv)	600mm dia			25	RM					
	Concrete road (including all crossings) as per technical specification and approved drawing but ecluding reinforcement & concrete									
а.	Concrete Road			600	Sq. m.					
12.0	Construction of rail-cum-raod as per technical specification and approved drawing including all items such as excavation, compaction, rolling, watering, WBM, etc but excluding concrete, reinforcement and structural steel which shall be paid seperately									
a.	Section having four rails			350	Sq. m.					
13.0	Chain link fencing as per technical specification and approved drawing but excluding concrete which shall be paid seperately			836	RM					
14.0	switch yard Gate excluding concrete			2	No					
	Dismantling & rerection of existing fence including sorting and stacking of serviceable & non- serviceable materials and disposal of debris as per the direction of engineer-in-charge			55	RM					
	Supplying and erecting dewatering pumps									
	5 HP				Nos.					
	0.5 HP			4	Nos.					
17.00	Drain including culverts but excluding concrete ,hume pipes & reinforcement steel which shall be paid seperately									
	Туре АА			1100						
	Туре ВВ			220						
	Type CC				RM					
	Type DD			28	RM					
18.00	External water supply as per technical from borewell to GIS Building including all items like excavation,pipes,fittings,jointings,valves,chambers/manholes etc									
	80mm Dia GI Pipe			150						
b.	25mm Dia GI Pipe			50	RM					

Item No.	Description	Country of origin	Type & Designatio n	Estim	ated			Installation	Charges	
NO.				Quantity	Unit	Por	Portion in Foreign Currency(FC)		Portion in Nepales	e Currency (in NPR)
						Currency#	Unit Rate	Total Amount	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	(7	(8)	(9)=(5)x(8)	10	(11)=(5)x(10)
19.00	External sewerage system including all item such as excavation, piping, pipe fittings, manholes, gali trap, gali chamber etc.									
	(i) 150 mm Dia.			138	RM					
	Stone soling below foundations wherever specified in approved drawings during detailed engineering			165	Cu.Mtr.					
21	Site levelling									
i	Earth work in excavation and filling in all types of soils including soft/disintegrated rock with all leads and lifts within sub station boundary			60000	Cu.Mtr.					
ii	Earth work in filling with borrowed earth with all leads and lifts including royalty, taxes etc			2000	Cu.Mtr.					
22.00	Construction of retaining wall with random rubble masonary in cement sand mortar (1:6) including levelling up with cement concrete (1:6:12), providing weep holes of PVC pipes (150 mm dia) with necessary filter material at the mouth of weep holes, 50 mm thick cement concrete (1:2:4) copping on the top of wall, 100 mm thick PCC (1:4:8) below RR masonary work, excavation of foundation for all lifts up to 3m above lower level. Item of excavation, PCC (1:2:4 & 1:4:8) shall be measured and paid seperately under respective items of BPS			2000	Cu.Mtr.					
23	PRE ENGINEERED BUILDINGS									
i)	400 KV GIS BUILDING All civil works related to pre-engineered 400 kV GIS Building to be supplied as per schedule 1 including internal cable trench, finishing(external & Internal) etc. complete as per technical specification and approved drawings, excluding excavation, PCC, RCC and reinforcement steel which shall be measured and paid seperately under respective items of BPS.									
(a)	GIS Hall				Sq. M.					
(b)	AHU/ Panels Room			500						
24	Geotechnical /Soil Investigation	l		1	LS					
	Total for Schedule 4(Total of column 9 and 11 to be carried forward to Schedule 5: Grand S	ummary)								

Name of Bidder: Signature of Bidder: (Printed Name) (Designation) (Common Seal) Date:

400 kV(GIS)/220kV (GIS) Barhabise Substation Schedule No. 4 : Installation and Other Services (b):Training Charges for training to be imparted abroad (Common for all three substations)

SI. No.	Description	Item for which training is to be imparted.	Country where training is to be imparted	Nos. of Trainee	Training duration in days		Training charge per Trainee per day	Total Training Charges
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)=(5)x(6)x(8)
۵	None							
~								
	Total for Training Charges							-

REMARKS:

1. Training at Manufacturer's works: The Contractor shall include in the training charges payment of per Diem allowance to NEA trainees @ USD 100 per day per trainee for the duration of training abroad towards accommodation, meals and other incidental expenses and to and fro economy class air ticket from Nepal to place of training. The duration of training shall be excluding travelling period.

Name of Bidder: Signature of Bidder: (Printed Name) (Designation) (Common Seal)

400 kV(GIS)/220kV (GIS) Barhabise Substation

Schedule No. 4 : Installation and Other Services

(c):Training Charges for training to be imparted to Employer's Personnel by Bidder's Instructor in Nepal (Common for all three substations)

SI. No.	Description of the Test	Item for which training is to be imparted.	Training duration in days	Currency	Per Day Training Charges for Contractors Trainers	Total Training Charges				
(1)	(2)	(3)	(4)	(5)	(6)	(7)=(4)x(6)				
	None									
	Total for Training Charges					-				
Total fo	Total for Schedule 4 (Total of column 7 to be carried forward to Schedule 5: Grand Summary)									

Name of Bidder: Signature of Bidder: (Printed Name) (Designation) (Common Seal)

NEPAL ELECTRICITY AUTHORITY PROJECT MANAGEMENT DIRECTORATE Khimti-Barhabise-Lapsiphedi 400 kV Substation Project

400 kV(GIS)/220kV (GIS) Barhabise Substation Schedule No. 4 : Installation and Other Services (d): Maintenance Charges

SI No	Description	Unit	Qty.	Total	Maintenance Charges
31 110	Description	Unit	QIY.	Currency	Total Maintenance Charges
1	None	Year			
2	None	Year			
	Total for Schedule 4 (Total of column 5 to be carried forward to Schedule	5: Grand S	ummary		

Name of Bidder: Signature of Bidder: (Printed Name) (Designation) (Common Seal)

NEPAL ELECTRICITY AUTHORITY PROJECT MANAGEMENT DIRECTORATE

Khimti-Barhabise-Lapsiphedi 400 kV Substation Project

400 kV(GIS)/220kV (GIS) Barhabise Substation

Schedule No. 4 : Installation and Other Services

(e) : Type Test Charges for Type Tests to be conducted abroad

SI. No.	Description of Tests	Testing Location	TEST	CHARGES
			Currency	Amount
1	2	3	4	5
	None			
	None			
	Total of Type Tests charges (Total of column 5 to be carried forward to Schedule 5: Grand Summary)			

Name of Bidder: Signature of Bidder: (Printed Name) (Designation) (Common Seal)

Nepal Electricity Authority

Project Management Directorate Khimti-Barhabise-Lapsiphedi 400 kV Substation Project

400 kV(GIS)/220kV (GIS) Barhabise Substation

Schedule No. 6: Recommended Availability/Optional Spares Parts and recommended Test Equipment in line with technical Specifications

Item No.	Name & Description of Parts	Name of Original	Part No.	Number of Units in	Total No. of Sets to	Unit Price	Total Price	Remarks
		Manufacturer		each set	be provided			
	None							
	None							

Name of Bidder: Signature of Bidder: (Printed Name) (Designation) (Common Seal)

NEPAL ELECTRICITY AUTHORITY PROJECT MANAGEMENT DIRECTORATE Khimti-Barhabise-Lapsiphedi 400 kV Substation Project

400 kV(GIS)/220kV (GIS) Lapsiphedi Substation

Schedule No. 5: Grand Summary

		Lapsephedi	Substation
SI. No.	Description	Total Price Foreign ()*	Total Price Local()*
1	TOTAL SCHEDULE NO. 1	1	2
	Plant and Equipment including Mandatory Spares to be supplied from abroad, including Type Test Charges for Type Tests to be conducted abroad.		
	Sub-Total 1		
2	TOTAL SCHEDULE NO. 2		
	Plant and Equipment including Mandatory Spares Parts to be supplied from within Nepal including Type Test Charges		
	Sub-Total 2		
3	TOTAL SCHEDULE NO. 3		
	Design Services		
	Sub-Total 3		
4	TOTAL SCHEDULE NO. 4		
	a. Installation Charges		
	b. Training Charges for Training to be imparted abroad		
	c. Training Charges for Training to be imparted in Nepal		
	d. Maintenance charges		
	e. Type test charges to be conducted abroad		
	Sub-Total 4 GRAND TOTAL Excluding Taxes & Customs [1+2+3+4(a)+4(b)+4 (c) +4 (d) + 4 (e)]		

Name of Bidder: Signature of Bidder: (Printed Name) (Designation) (Common Seal)

	IS)/220kV (GIS) Lapsiphedi Substation nedule No. 1:Plant, and Mandatory Spares Parts to be supplied from abroad							FC: Foreign Currency LC: Local Currency	
ltem No.	Description	Country of origin	Nepal)			Total Amount (Excluding Taxes and Duties)	Custom, VAT and other taxes		
			Quantity	Unit		FC		FC	
					Currency#	Unit Rate	Total Amount		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)=(4)x(7)	(9) ='(8)	(10)
	420kV SF6 Gas Insulated Switchgear and Accessories								
a)	420kV, 5000A SF6 GIS Bus Bar Module [Module description as per technical specification, Chapter 1- PSR]		2	Sets					
D)	420kV, 4000A SF6 GIS Line Feeder bay Module [Module description as per technical specification, Chapter 1- PSR]		4	Sets					
C)	420kV, 2000A, SF6 GIS Auto Transformer bay Module [Module description as per technical specification, Chapter 1- PSR]		2	Sets					
	420kV, SF6 GIS Tie bay Module [Module description as per technical specification, Chapter 1- PSR]								
	4000A		2	Sets					
ii)	2000A		1	Sets					
e)	SF6 Gas Insulated Bus Duct (GIB) outside GIS Hall alongwith associated support structure and accessories								
i)	4000 A , 50kA for 1 sec. Single Phase		600	m					
	2000 A, 50kA for 1 sec. Single Phase		200	m					
t)	400 kV, SF6 to Air Bushing alongwith associated support structure for Connecting GIS to AIS alongwith support structure								
	4000A, 50kA for 1 sec. Single Phase		12	nos					
	2000A, 50kA for 1 sec. Single Phase		6	nos					
	Sub Total (A)								
B)	245 W/ CEC Cas Insulated Switchman and Assessmina								
a)	245 kV SF6 Gas Insulated Switchgear and Accessories SF6 Gas Insulated Bus Duct (GIB) outside GIS Hall alongwith associated support structure and								
	accessories								
	2000A, 40kA for 1 sec. Single Phase		240	mtr.					
	220kV, SF6 to Air Bushing alongwith associated support structure for Connecting GIS to AIS alongwith support structure								
	2000A, 40kA for 1 sec. Single Phase		6	nos					
с	220kV, SF6 to Cable Bushing alongwith associated support structure for Connecting GIS to AIS alongwith support structure								
c.1	2000A, 40kA for 1 sec. Single Phase		6	nos					
	Sub Total (B)								

	iIS)/220kV (GIS) Lapsiphedi Substation hedule No. 1:Plant, and Mandatory Spares Parts to be supplied from abroad							FC: Foreign Currency LC: Local Currency	
ltem No.	Description	Country of origin	Estim	CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)		transportation to site (Excluding Taxes and Duties applicab			Custom, VAT and other taxes
			Quantity	Unit		FC	I	FC	
(1)	(2)	(3)	(4)	(5)	Currency# (6)	Unit Rate (7)	Total Amount (8)=(4)x(7)	(9) ='(8)	(10)
с	53.33 MVA,400/ $\!\!\sqrt{3}$ /220/ $\!\sqrt{3}$ /33 kV Single Phase Auto Transformer as specified below								
1	53.33 MVA,400/\/3 /220/\/3/33 kV Single Phase Auto Transformer outdoor type, complete with all fittings and accessories including Main Control Cabinet, cooling control cabinet, RTCC panel, OLTC, and On line Dissolved Gas (Multi Gas) Analysis and moisture monitoring system, online insulating oil drying system (Cartridge type) with optical temperature sensor, necessary arrangment for Delta formation of LV winding & Neutral Formation and Earthing Arrangement, surge protection device and all fittings & accessories as specified/ required for completion of the scope of works as per technical specification (without transformer Oil)		4	Nos.					
	Insulating oil for 53.33 MVA,400/\/3 /220/\/3/33 kV Single Phase Autotransformer (* 1Lot = Oil for 1 Autotransformers)		4	Lot*					
	33kV Current transformer (NCT) for autotrasnformer		1	Nos					
	Sub Total (C)								
	LT TRANSFORMER		1	Nee					<u> </u>
	630 kVA, 33/0.4kV Sub Total (D)		1	Nos					
E	420KV Outdoor Equipment								
1	336KV Surge Arrester (1-phase)		18	Nos.					
2	420kV BPI(1-Ph)		18	Nos.					
	Sub Total (E)								
_									
	245KV Outdoor Equipment			Nee					<u> </u>
	216KV Surge Arrester (1-phase) 245kV BPI(1-Ph)		-	Nos. Nos.					<u> </u>
	Sub Total (F)		0	NOS.					
G	72.5kV EQUIPMENT								
1	72.5 kV, 600A, 31.5kA Circuit Breaker (3-phase) with support structure			No.					
2	72.5 kV, 600A,31.5kA Isolators with earth switch (3-phase, DBR type)			No.					└────
3	72.5kV, 600A, 31.5 kA with 120% extended rating CT (1- Phase)			Nos.					
4	72.5kV PT.(1-phase)			Nos.					
5	30kV Surge Arrestors (1-Phase)			Nos.					
6	72.5 kV BPI (1-phase)		3	Nos.					l
	Sub Total (G)								

	SIS)/220kV (GIS) Lapsiphedi Substation hedule No. 1:Plant, and Mandatory Spares Parts to be supplied from abroad							FC: Foreign Currency LC: Local Currency	
ltem No.	Description	Country of origin	Estim	nated	CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable ir Nepal)			Total Amount (Excluding Taxes and Duties)	Custom, VAT and other taxes
			Quantity	Unit		FC		FC	
					Currency#	Unit Rate	Total Amount		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)=(4)x(7)	(9) ='(8)	(10)
н	Erection Hardware								
H.1	400kV One and Half Breaker-type layout for GIS termination arrangement								
	Insulator strings, Disc Insulators, Hardware, conductor, bus-bar materials, cable trays, Bay MB, clamps, spacers, connectors including equipment connectors, connectors for Transformers, Junction box, earthwire, earthing material risers, buried cable trenches/pipe equipment & lighting, all accessories etc. applicable for the following:								
1.1	Transformer Bay		2	bays					
2	Insulator strings, Disc Insulators, Hardware, conductor, bus-bar materials, cable trays, Bay MB, clamps, spacers, connectors including equipment connectors, Junction box, earthwire, earthing material risers, buried cable trenches/pipe equipment & lighting, all accessories etc. applicable for the following:								
2.1	Line Bay		4	bays					
H.2	220 kV DM-type layout for GIS termination arrangement of Transformer								
1	Insulator strings, Disc Insulators, Hardware, conductor, bus-bar materials, cable trays, Bay MB, clamps, spacers, connectors including equipment connectors, connectors for Transformers, Junction box, earthwire, earthing material risers, buried cable trenches/pipe equipment & lighting, all accessories etc. for the following:								
1.1	Transformer Bay		2	bays					
	Sub Total (H)								
	CONTROL RELAY AND PROTECTION PANELS (WITH AUTOMATION)								
	400kV Circuit Breaker Relay Panel								
	CB Relay Panel With Auto Reclose		4	Sets					
	CB Relay Panel With out Auto Reclose		4	Sets					
	Line Protection Panel		4	Sets					
1.3	Transformer Protection Panel (For both HV & MV side) as per Specification		1	Sets					
1.4	Bus Bar Protection Panel								
а	400kV (Duplicate Bus Bar Protection)		1	Set					
b	Augmentation of existing 220 kV bus bar protection scheme (For 1 Nos. of ICT bays as specified)		1	Lot					
2	Other/Common equipments Pertaining to C & R System								
	Time synchronisation equipment		1	Nos.					
b	Special Relay Test kit		1	Nos.					
	Sub Total (I)								

	SIS)/220kV (GIS) Lapsiphedi Substation hedule No. 1:Plant, and Mandatory Spares Parts to be supplied from abroad							FC: Foreign Currency LC: Local Currency	
ltem No.	Description	Country of origin	Estim	nated		including insurance, site (Excluding Taxe Nepal)	Total Amount (Excluding Taxes and Duties)	Custom, VAT and other taxes	
			Quantity	Unit		FC		FC	
					Currency#	Unit Rate	Total Amount		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)=(4)x(7)	(9) ='(8)	(10)
	SUBSTATION AUTOMATION								
	Complete Substation automation system/ Augumentation Substation automation system- including hardware and software for the substation alongwith associated equipments for the following Main hardware substation and the substation along with associated equipments for the following Main hardware hardware the substation along with associated equipments for the following Main hardware hardware the substation along with associated equipments for the following Main hardware hardware the substation along with associated equipments for the following Main hardware hardware the substation along with associated equipments for the following Main hardware hardware the substation along with associated equipments for the following Main hardware hardware to the substation along with associated equipments for the following Main hardware hardware hardware to the substation along with associated equipments for the following Main hardware hardware hardwar								
	bays to be automated as per Technical Specification: 400 kV System		Q	Nos.					
	220 kV System	1		Nos.	1	1			1
	For Auxiliary system			Set					
	Augumentations/Intregations of Operator Workstations (HMI) and all necessary accessories and software. In the present scope, bidder shall include BCUs required for 400 kV bays including all necessary hardware and software to integrate with the existing Substation Automation System including up-dation of system database, displays, and development of additional displays and reports all complete as per requirement.		1	Lot					
	Integration of all 400/220kV 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					
	Sub Total (J)								
к	Visual monitoring system (VMS) system								
	Visual monitoring system (VMS) as specified/required complete in all respect including HF Cable, Other necessary cabling and power supply system		1	Lot					
	Sub Total (K)								
	LT Switchgear								
	400V Main switchboard		1	Set					
	400V ACDB 400V MLDB		1	Set Set					
	400V MLDB 400V Emergency LDB		1	Set					
	220V DCDB		1	Sets					
f	48V/50V DCDB		1	Sets					
	Sub Total (L)								
	Batteries			<u> </u>			-		
	220V 600 AH		2	Nos					
	48V		2	INUS					
	48V 600 AH		2	Nos					
	Sub Total (M)								
Ν	Float Cum Boost Battery Charger								

	SIS)/220kV (GIS) Lapsiphedi Substation hedule No. 1:Plant, and Mandatory Spares Parts to be supplied from abroad		I					FC: Foreign Currency LC: Local Currency	
ltem No.	Description	Country of origin	Estim	ated		including insurance, o site (Excluding Taxes Nepal)	Total Amount (Excluding Taxes and Duties)	Custom, VA and other taxes	
			Quantity	Unit	FC			FC	
					Currency#	Unit Rate	Total Amount		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)=(4)x(7)	(9) ='(8)	(10)
а	220V Float Cum Boost Battery Charger								
i	80A/80A		2	Nos					
	48V Float Cum Boost Battery Charger								L
	80A/80A		2	Nos					
	Sub Total (N)								
-									
	Fire Protection System Portable /Trolley/Wheel mounted extinguishers								<u> </u>
	9 litre water type		5	Nos					ł
	50 litre foam type		2	Nos					
	4.5 kg CO_2 type		8	Nos					
	4.5 kg Dry Chemical Power (DCP) type		5	Nos					ł
	Smoke detection system		1	Set					
	Fire detection and Alarm System		1	Set					
	Hydrant system, complete U/G piping and accessories etc. from existing HVW/Fire Hydrant point from Fire Fighting Pump House								
i	400 kV Substation		1	Set					
е	HVW spray system, Hydrant system and complete U/G & O/G piping and accessories etc. out side the pump house for Transformer / Reactor :								
	53.33 MVA , 400/220 KV, 1-phase Autotransformer		4	Nos					
	Sub Total (O)								
Р	Air conditioning & Ventilation System								
а	High wall type split AC unit of 2 TR capacity for Air conditioning (AC) for LCC room of GIS Hall, Battery Room, Panel room cum administrative building		16	Nos					
b	Ventillation system for 400 kV GIS Hall		1	Lot					
-	Sub Total (P)								
Q	Cables along with clamps, glands, lugs and straight joints etc.								
	220 kV Cable								
1.1	220 kV grade 1 core, 1200sq.mm.XLPE insulated copper cable as per technical specification		1.50	km					
1.2	Cable end termination(s) on Gantry/Tower as per technical specification		6	nos.					
	Sub Total (Q)								

	iIS)/220kV (GIS) Lapsiphedi Substation hedule No. 1:Plant, and Mandatory Spares Parts to be supplied from abroad							FC: Foreign Currency LC: Local Currency	
ltem No.	Description	Country of origin	Estim	ated			clearing, forwarding and and Duties applicable in	Total Amount (Excluding Taxes and Duties)	Custom, VAT and other taxes
			Quantity	Unit	FC			FC	
					Currency#	Unit Rate	Total Amount		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)=(4)x(7)	(9) ='(8)	(10)
R	Fabrication, galvanising and supply of STEEL STRUCTURES (400kV Double Dead End Transmission Tower,Column, Gantry structures& Equipment support structures)								
	Lattice/pipe Structure for tower,Colums,beams and equipments including peak plates/pack washers and guest paltes including foundation bolts(nuts,washers,MS plate welded at the bottom)								
а	Lattice stucture & foundation bolts		274	MT					
b	Pipe Structure including Foundation Bolts .		27	MT					
с	Fastners for tower, Columns, beams and equipment support structures		3	MT					
	Sub Total (R)								
s	Earthing and lightning protection including necesaary connectors/connections, risers etc. complete in all respect (but excluding LM structures for Lightning protection)								
i	Earth Conductor (copper)		1	LS					
ii	Earth Rod (copper clad steel)		1	LS					
iii	Equipment for lightning protection		1	LS					
	Sub Total (S)								
-									
Т	Illumination System								
а	Illumination System for GIS Hall and Control Building Complete as per Specification		1	LS					
	Switchyard lighting		1	LS					
С	Street lighting		1	LS					
	Sub Total (T)								
U	POWER & CONTROL CABLES								
a	Power & CONTROL CABLES Power Cables(PVC) - (1.1kV grade)		1	LS					
a b	Power Cables (XLPE) - (1.1kV grade)		1	LS		1	1	1	
	Control Cable (PVC) - (1.1kV grade)		1	LS					
	Cable glands, lugs & straight through joints for Power & Control cables		1	LS					
	Sub Total (U)								
	Communication & Associated System								
а	Interfacing of SAS to Existing Communication & Associated System		1	Lot					
b	Giga - Ethernet interfaces 10/100/1000 Mbps with Layer-2 switching Card (Minimum 4 interfaces per Card.)		2	Nos.					
	Sub Total (V)								

Page 6 of 7

	SIS)/220kV (GIS) Lapsiphedi Substation hedule No. 1:Plant, and Mandatory Spares Parts to be supplied from abroad							FC: Foreign Currency LC: Local Currency	
ltem No.	Description	Country of origin	Estim	ated		including insurance, o site (Excluding Taxes Nepal)	Total Amount (Excluding Taxes and Duties)	Custom, VAT and other taxes	
			Quantity	Unit		FC		FC	
					Currency#	Unit Rate	Total Amount		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)=(4)x(7)	(9) ='(8)	(10)
W	EOT Crane								
	EOT crane with suitable double Runway rails including trolley runway with conductors, fixtures, insulations size suitable to operate as and when required, complete with all accessories and slings as detailed in the specifications.		1	Set					
	Sub Total (W)								
v	Digital Protection Coupler								
	Digital Protection Coupler		4	Nee					
	Sub Total (X)		4	Nos					
Y	PRE-ENGINEERED BUILDINGS								
i)	400 kV GIS Building including all supply materials from abroad except civil works and for civil works refer schedule 4(a)								
(a)	400 kV GIS Hall		700	Sq. M.					
(b)	AHU / Panels Room		500	Sq. M.					
	Sub Total (Y)								
z	MANDATORY SPARES *(Break up of Lumpsum quantity shall be as per Annexure-I, Chapter- 1, Project Specific Requirement)								
1	Gas Insulated Switchgear								
а	Mandatory Spares required during O&M of 400kV GIS Substation		1	LS					
2	400/220 kV, Auto Transformer		1	LS					
3	Surge Arrester								
а	336kV Surge Arrester		1	LS					ļ
b	216kV Surge Arrester		1	LS					
	Fire Fighting System		1	LS		ł	+		l'
5	Battery Charger		1	LS					ł
	Relay & Protection panel		1	LS					/ [!]
7	Substation Automation System Illumination System		1	LS LS					
8	LT Switchgear		1	LS					[!]
9 10	Erection hardware		1	LS		1			<u> </u>
-	Bus Post Insulators		1	19		ł	+		┟─────
	420kV BPI (1-Ph)		1	nos		1	+		<u> </u>
a	Sub Total (Z)		1	1105					
	Grand Total of Schedule I								
	Grand Total of Schedule I								

Name of Bidder: Signature of Bidder: (Printed Name) (Designation) (Common Seal)

400 kV(GIS)/220kV (GIS) Lapsiphedi Substation

	GIS)/220kV (GIS) Lapsiphedi Substation e No.2: Plant and Equipment including Mandatory Spares Parts to be supplied from with	hin Nepal					LC: Local Currency (ALL Price in	Local Currency)	
Item No.	Item description	Quantity	uantity Unit Ex Faxtory Price (Excluding VAT) Inland transportation to site in LC in LC				Total Amount (Excluding Taxes)	VAT and other taxes	
				Unit Rate	Amount	Unit Rate	Amount		
1	2	3	4	5	$6 = (3) \times (5)$	7	8=(3)x(7)	9=6+8	10
	Total for Schedule 2 (Total of column 9 to be carried forward to Schdule 5: Grand Summary)]

Note: 1) Bidder is required to quote prices in this Schedule for all the items in Schedule 1 which they wish to supply from within Nepal.

Name of Bidder: Signature of Bidder: (Printed Name) (Designation) (Common Seal)

400 kV(GIS)/220kV (GIS) Lapsiphedi Substation Price Schedule No 3: Design Services

				Unit	Prices	Total Pri	ices
ltem No.	Item Description	Esti	imated	Local Currency Portion	Foreign Currency Portion		
		Quantity	Unit	NRs	Currency	LC	FC
1	2	3	4	5	6	7=3x5	8=3x6
	NOT APPLICABLE						
			-				
	Total for Schedule 3 (Total of column 7 & 8 to be carried forward to Schdule 5: Grand Summary)						

NOTE: The design cost is included in schedule 1.

Name of Bidder: Signature of Bidder: (Printed Name) (Designation) (Common Seal)

400 kV(GIS)/220kV (GIS) Lapsiphedi Substation Schedule No. 4 (a): Installation and Other Services

(a): Installation and Construction Charges

Type & Country of Estimated Installation Charges origin Designation Item Description No. Portion in Foreign Currency(FC) Portion in Nepalese Currency (in NPR) Quantity Unit Currency# Unit Rate Total Amount Unit Rate **Total Charges** (1) (2) (3) (4) (5) (6) (9)=(5)x(8) 10 (11)=(5)x(10) (7 (8) Installation services Α 420kV SF6 Gas Insulated Switchgear and Accessories 420kV, 5000A SF6 GIS Bus Bar Module [Module description as per technical specification, a) 2 Sets -Chapter 1- PSR] 420kV, 4000A SF6 GIS Line Feeder bay Module [Module description as per technical b) 4 Sets specification. Chapter 1- PSR1 420kV, 2000A, SF6 GIS Auto Transformer bay Module [Module description as per technical C) 2 Sets specification, Chapter 1- PSR] 420kV, SF6 GIS Tie bay Module [Module description as per technical specification, Chapter 1d) PSR] i) 4000A Sets 2 ii) Sets 2000A 1 -SF6 Gas Insulated Bus Duct (GIB) outside GIS Hall alongwith associated support structure and e) accessories i) 4000 A , 50kA for 1 sec. Single Phase 600 m ii) 2000 A , 50kA for 1 sec. Single Phase 200 m 400 kV, SF6 to Air Bushing alongwith associated support structure for Connecting GIS to AIS f) alongwith support structure i) 4000A, 50kA for 1 sec. Single Phase 12 nos ii) 2000A, 50kA for 1 sec. Single Phase 6 nos Sub Total (A) B 245 kV SF6 Gas Insulated Switchgear and Accessories SF6 Gas Insulated Bus Duct (GIB) outside GIS Hall alongwith associated support structure and a) accessories a.1 2000A, 40kA for 1 sec. Single Phase 240 mtr. b 220kV, SF6 to Air Bushing alongwith associated support structure for Connecting GIS to AIS alongwith support structure b.1 2000A, 40kA for 1 sec. Single Phase 6 nos С 220kV, SF6 to Cable Bushing alongwith associated support structure for Connecting GIS to AIS alongwith support structure c.1 2000A, 40kA for 1 sec. Single Phase 6 nos Sub Total (B) С 53.33 MVA,400/\/3 /220/\/3/33 kV Single Phase Auto Transformer as specified below -

Item	Description	Country of origin	Type & Designation	Estim	nated			Installat	ion Charges	
No.				Quantity	Unit	Portion	Portion in Foreign Currency(FC)		Portion in Nepales	e Currency (in NPR)
						Currency#	Unit Rate	Total Amount	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	(7	(8)	(9)=(5)x(8)	10	(11)=(5)x(10)
1	53.33 MVA,400/√3 /220/√3/33 kV Single Phase Auto Transformer outdoor type, complete with all fittings and accessories including Main Control Cabinet, cooling control cabinet, RTCC panel, OLTC, and On line Dissolved Gas (Multi Gas) Analysis and moisture monitoring system, online insulating oil drying system (Cartridge type) with optical temperature sensor, necessary arrangment for Delta formation of LV winding & Neutral Formation and Earthing Arrangement, surge protection device and all fittings & accessories as specified/ required for completion of the scope of works as per technical specification (without transformer Oil)			4	Nos.			-		
2	Insulating oil for 53.33 MVA,400/\/3 /220/\/3/33 kV Single Phase Autotransformer (* 1Lot = Oil for 1 Autotransformers)			4	Lot*			-		
3	33kV Current transformer (NCT) for autotrasnformer			1	Nos.					
	Sub Total (C)							-		
								-		
D	LT TRANSFORMER									
1	630 kVA, 33/0.4kV			1	Nos.			-		
	Sub Total (D)							-		
E	420KV Outdoor Equipment							-		
1	336KV Surge Arrester (1-phase)			18	Nos.			-		
2	420kV BPI(1-Ph)			18	Nos.			-		
	Sub Total (E)							-		
								-		
F	245KV Outdoor Equipment							-		
1	216KV Surge Arrester (1-phase)				Nos.		-	-		
2	245kV BPI(1-Ph)			6	Nos.			-		
	Sub Total (F)							-		
								-		
G	72.5kV EQUIPMENT			4	No.			-		
1	72.5 kV, 600A, 31.5kA Circuit Breaker (3-phase) with support structure 72.5 kV, 600A,31.5kA Isolators with earth switch (3-phase, DBR type)				NO. NO.					
3					NO. NOS.					
4	72.5kV, 600A, 31.5 kA with 120% extended rating CT (1- Phase) 72.5kV PT.(1-phase)				NOS. NOS.		<u> </u>	<u> </u>		
4	30kV Surge Arrestors (1-Phase)			-	NOS. NOS.					
6	72.5 kV BPI (1-phase)			-	NOS. NOS.		<u> </u>	+		
0	Sub Total (G)			3	1005.					
н	Erection Hardware									
H.1										
	Insulator strings, Disc Insulators, Hardware, conductor, bus-bar materials, cable trays, Bay MB,			<u> </u>	<u> </u>					
1	clamps, spacers, connectors including equipment connectors, connectors for Transformers, Junction box, earthwire, earthing material risers, buried cable trenches/pipe equipment & lighting, all accessories etc. applicable for the following:							-		
1.1	Transformer Bay			2	bays		1	-		
	· · ·					-			•	

Item	Description	Country of origin	Type & Designation	Estim	ated			Installat	ion Charges	
No.				Quantity	Unit	Portion	in Foreign Cu	rrency(FC)	Portion in Nepalese	e Currency (in NPR)
						Currency#	Unit Rate	Total Amount	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	(7	(8)	(9)=(5)x(8)	10	(11)=(5)x(10)
2	Insulator strings, Disc Insulators, Hardware, conductor, bus-bar materials, cable trays, Bay MB, clamps, spacers, connectors including equipment connectors, Junction box, earthwire, earthing material risers, buried cable trenches/pipe equipment & lighting, all accessories etc. applicable for the following:							-		
2.1	Line Bay			4	bays			-		
H.2	220 kV DM-type layout for GIS termination arrangement of Transformer							-		
1	Insulator strings, Disc Insulators, Hardware, conductor, bus-bar materials, cable trays, Bay MB, clamps, spacers, connectors including equipment connectors, connectors for Transformers, Junction box, earthwire, earthing material risers, buried cable trenches/pipe equipment & lighting, all accessories etc. for the following:							-		
1.1	Transformer Bay			2	bays			-		
	Sub Total (H)							-		
								-		
1	CONTROL RELAY AND PROTECTION PANELS (WITH AUTOMATION)							-		
1	400kV							-		
1.1	Circuit Breaker Relay Panel							-		
а	CB Relay Panel With Auto Reclose			4	Sets			-		
b	CB Relay Panel With out Auto Reclose			4	Sets			-		
1.2	Line Protection Panel			4	Sets			-		
1.3	Transformer Protection Panel (For both HV & MV side) as per Specification			1	Sets			-		
1.4	Bus Bar Protection Panel		-					-		
а	400kV (Duplicate Bus Bar Protection)			1	Set			-		
b	Augmentation of existing 220 kV bus bar protection scheme (For 1 Nos. of ICT bays as specified)			1	Lot			-		
2	Other/Common equipments Pertaining to C & R System							-		
а	Time synchronisation equipment			1	Nos.			-		
b	Special Relay Test kit			1	Nos.			-		
	Sub Total (I)							-		
								-		
J	SUBSTATION AUTOMATION							-		
1	Complete Substation automation system/ Augumentation Substation automation system- including hardware and software for the substation alongwith associated equipments for the following Main bays to be automated as per Technical Specification:							-		
a	400 kV System			9	Nos.			-		
b	220 kV System		1		Nos.			-		
С	For Auxiliary system			1	Set			-		
2	Augumentations/Intregations of Operator Workstations (HMI) and all necessary accessories and software. In the present scope, bidder shall include BCUs required for 400 kV bays including all necessary hardware and software to integrate with the existing Substation Automation System including up-dation of system database, displays, and development of additional displays and reports all complete as per requirement.			1	Lot			-		
3	Integration of all 400/220kV 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			-		

Item	Description	Country of origin	Type & Designation	Estim	ated			Installat	ion Charges	
No.				Quantity	Unit	Portion	in Foreign Cu	rrency(FC)	Portion in Nepales	e Currency (in NPR)
					•	Currency#	Unit Rate	Total Amount	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	(7	(8)	(9)=(5)x(8)	10	(11)=(5)x(10)
	Sub Total (J)							-		
								-		
к	Visual monitoring system (VMS) system							-		
a)	Visual monitoring system (VMS) as specified/required complete in all respect including HF Cable, Other necessary cabling and power supply system			1	Lot			-		
	Sub Total (K)							-		
								-		
L	LT Switchgear							-		
а	400V Main switchboard			1	Set			-		
	400V ACDB			1	Set			-		
с	400V MLDB			1	Set			-		
d	400V Emergency LDB 220V DCDB			1	Set Sets			-		
e f	48V/50V DCDB			1	Sets			-		
1	Sub Total (L)			1	Sets			-		
								-		
м	Batteries							-		
a	220V							-		
i	600 AH			2	Nos			-		
b	48V							-		
i	600 AH			2	Nos			-		
	Sub Total (M)							-		
								-		
	Float Cum Boost Battery Charger									
а	220V Float Cum Boost Battery Charger									
i	80A/80A			2	Nos					
b	48V Float Cum Boost Battery Charger									
i	80A/80A			2	Nos					
	Sub Total (N)									
	Fire Protection System							-		
a	Portable /Trolley/Wheel mounted extinguishers			5	Nos			-		
ii	9 litre water type 50 litre foam type			2	Nos			-		
	4.5 kg CO ₂ type			2 8	Nos			-		
				8 5	Nos			-		
iv b	4.5 kg Dry Chemical Power (DCP) type Smoke detection system			5	Set			-		
	Fire detection and Alarm System			1	Set			-		
	Hydrant system, complete U/G piping and accessories etc. from existing HVW/Fire Hydrant point				001			-		
d	from Fire Fighting Pump House							-		
i	400 kV Substation			1	Set			-		
e	HVW spray system, Hydrant system and complete U/G & O/G piping and accessories etc. out side the pump house for Transformer / Reactor :							-		
i	53.33 MVA, 400/220 KV, 1-phase Autotransformer			4	nos			-		

ltem No.	Description	Country of origin	Type & Designation	Estim	ated			Installat	ion Charges	
NO.				Quantity	Unit	Portion	in Foreign Cu	rrency(FC)	Portion in Nepalese	Currency (in NPR)
						Currency#	Unit Rate	Total Amount	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	(7	(8)	(9)=(5)x(8)	10	(11)=(5)x(10)
	Sub Total (O)							-		
								-		
Р	Air conditioning & Ventilation System							-		
а	High wall type split AC unit of 2 TR capacity for Air conditioning (AC) for LCC room of GIS Hall, Battery Room, Panel room cum administrative building			16	Nos			-		
b	Ventillation system for 400 kV GIS Hall			1	Lot			-		
	Sub Total (P)							-		
								-		
Q	Cables along with clamps, glands, lugs and straight joints etc.									
1	220 kV Cable									
1.1	220 kV grade 1 core, 1200sq.mm.XLPE insulated copper cable as per technical specification			1.50	km					
1.2	Cable end termination(s) on Gantry/Tower as per technical specification			6	nos					
	Sub Total (Q)									
	Fabrication, galvanising and supply of STEEL STRUCTURES (400kV Double Dead End Transmission Tower,Column, Gantry structures& Equipment support structures)							-		
	Lattice/pipe Structure for tower,Colums,beams and equipments including peak plates/pack washers and guest paltes including foundation bolts(nuts,washers,MS plate welded at the bottom)									
а	Lattice stucture & foundation bolts			274	MT			-		
	Pipe Structure including Foundation Bolts .			27	MT					
С	Fastners for tower,Columns,beams and equipment support structures			3	MT			-		
	Sub Total (R)							-		
s	Earthing and lightning protection including necesaary connectors/connections, risers etc. complete in all respect (but excluding LM structures for Lightning protection)							-		
i	Earth Conductor (copper)			1	LS			-		
	Earth Rod (copper clad steel)			1	LS			-		
	Equipment for lightning protection			1	LS			-		
	Sub Total (S)							-		
т	Illumination System							-		
a I	Illumination System for GIS Hall and Control Building Complete as per Specification			1	LS			-		
a C	Switchvard lighting			1	LS			-		
	Street lighting			1	LS			-		
, , , , , , , , , , , , , , , , , , ,	Sub Total (T)							-		
								-		

Item	Description	Country of origin	Type & Designation	Estim	ated			Installa	tion Charges	
No.				Quantity	Unit	Portion	in Foreign Cu	irrency(FC)	Portion in Nepales	e Currency (in NPR)
						Currency#	Unit Rate	Total Amount	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	(7	(8)	(9)=(5)x(8)	10	(11)=(5)x(10)
U	POWER & CONTROL CABLES							-		
а	Power Cables(PVC) - (1.1kV grade)			1	LS			-		
	Power Cables (XLPE) - (1.1kV grade)			1	LS			-		
	Control Cable (PVC) - (1.1kV grade)			1	LS LS			-		
d	Cable glands, lugs & straight through joints for Power & Control cables Sub Total (U)			1	15			-		
								-		
v	Communication & Associated System							-		
a	Interfacing of SAS to Existing Communication & Associated System			1	Lot			-		
	Giga - Ethernet interfaces 10/100/1000 Mbps with Layer-2 switching Card									
b	(Minimum 4 interfaces per Card.)			2	Nos.			-		
	Sub Total (V)							-		
								-		
w	EOT Crane							-		
1	EOT crane with suitable double Runway rails including trolley runway with conductors, fixtures, insulations size suitable to operate as and when required, complete with all accessories and slings			1	Set					
	as detailed in the specifications.				361					
	Sub Total (W)							-		
								-		
	Digital Protection Coupler Digital Protection Coupler				Nee			-		
	Sub Total (V)			4	Nos			-		
								-		
	Civil Construction Works (As per technical specifications)							-		
	SECTION: A : NEA ASSESSED QUANTITIES							-		
1.0	Excavation in all types of soil and rock including backfilling disposal etc. for all leads and lifts			12500	Cu.Mtr.			-		
2.0	Providing and laying of Plain Cement Concrete (PCC) (1:4:8)			800	Cu.Mtr.			-		
3.0	Providing and laying of Plain Cement Concrete (PCC) (1:2:4)			75	Cu.Mtr.			-		
4.0	Providing and laying of Reinforced Cement Concrete Design Mix (M25) including pre cast, shuttering, Grouting of pockets & underpinning but excluding steel reinforcement.			3080	Cu.Mtr.			-		
5.0	Providing and laying Plain Cement Concrete 1:5:10 (1 cement : 5 sand : 10 Stone aggregate)			440	Cu.Mtr.			-		
6.0	Steel Reinforcement (Fe 500)			280	MT			-		
7.0	Miscellaneous Structural steel used for rails, plates for rail fixing, gratings, gratings supports etc for transformer /reactor foundation,cable supportstand earthing cleats, chequered plates, embedments, edge protection angles for cable trenches but excluding the reinforcement steel and steel for lattice and pipe structures which shall be paid seperately.			40	МТ			-		
8.0	Stone filling (40mm) over grating of Transformer /reactor Foundation			420	Cu.Mtr.			-		
9.0	Stone spreading including antiweed treatment in switchyard but excluding PCC.			5600	Sq. Mtr.			-		
10.00	Supplying & laying hume pipe with collarsof grade (NP-3) but excluding reinforcement steel & concrete of bed/support/encasing of hume pipes which shall be paid seperately							-		

ltem	Description	Country of origin	Type & Designation	Estim	ated			Installat	ion Charges	
No.				Quantity	Unit	Portion	in Foreign C	urrency(FC)	Portion in Nepales	e Currency (in NPR)
				,		Currency#	Unit Rate	Total Amount	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	(7	(8)	(9)=(5)x(8)	10	(11)=(5)x(10)
i)	250mm dia				RM			-		
ii)	300mm dia				RM			-		
iii)	450mm dia				RM			-		
iv)	600mm dia			25	RM			-		
11.00	Concrete road (including all crossings) as per technical specification and approved drawing but ecluding reinforcement & concrete							-		
a.	Concrete Road			600	Sq. m.			-		
12.0	Construction of rail-cum-raod as per technical specification and approved drawing including all items such as excavation, compaction, rolling, watering, WBM, etc but excluding concrete, reinforcement and structural steel which shall be paid seperately							-		
a.	Section having four rails			250	Sq. m.			-		
13.0	Chain link fencing as per technical specification and approved drawing but excluding concrete which shall be paid seperately			600	RM			-		
14.0	switch yard Gate excluding concrete			2	No			-		
15.0	Dismantling & rerection of existing fence including sorting and stacking of serviceable & non- serviceable materials and disposal of debris as per the direction of engineer-in-charge			30	RM			-		
16.00	Supplying and erecting dewatering pumps							-		
a.	5 HP			2	Nos.			-		
b.	0.5 HP			4	Nos.			-		
17.00	Drain including culverts but excluding concrete ,hume pipes & reinforcement steel which shall be paid seperately							-		
a.	Туре АА			800				-		
b.	Туре ВВ			160				-		
C.	Type CC				RM			-		
d.	Type DD			20	RM			-		
18.00	External water supply as per technical from borewell to GIS Building including all items like excavation,pipes,fittings,jointings,valves,chambers/manholes etc							-		
a.	80mm Dia GI Pipe			150				-		
b.	25mm Dia GI Pipe			50	RM			-		
19.00	External sewerage system including all item such as excavation, piping, pipe fittings, manholes, gali trap, gali chamber etc.							-		
а	(i) 150 mm Dia.			100	RM			-		
20.0	Stone soling below foundations wherever specified in approved drawings during detailed engineering			90	Cu.Mtr.			-		
21	Site levelling							-		
i	Earth work in excavation and filling in all types of soils including soft/disintegrated rock with all leads and lifts within sub station boundary			60000	Cu.Mtr.			-		
ii	Earth work in filling with borrowed earth with all leads and lifts including royalty, taxes etc			2000	Cu.Mtr.					

ltem No.	Description		Type & Designation	Estim	ated	Installation Charges					
NO.				Quantity	Unit	Portion	in Foreign Cu	irrency(FC)	Portion in Nepalese	Currency (in NPR)	
						Currency#	Unit Rate	Total Amount	Unit Rate	Total Charges	
(1)	(2)	(3)	(4)	(5)	(6)	(7	(8)	(9)=(5)x(8)	10	(11)=(5)x(10)	
22	Construction of retaining wall with random rubble masonary in cement sand mortar (1:6) including levelling up with cement concrete (1:6:12), providing weep holes of PVC pipes (150 mm dia) with necessary filter material at the mouth of weep holes, 50 mm thick cement concrete (1:2:4) copping on the top of wall, 100 mm thick PCC (1:4:8) below RR masonary work, excavation of foundation for all lifts up to 3m above lower level. Item of excavation, PCC (1:2:4 & 1:4:8) shall be measured and paid seperately under respective items of BPS			2000	Cu.Mtr.						
23	PRE ENGINEERED BUILDINGS										
i)	400 KV GIS BUILDING All civil works related to pre-engineered 400 kV GIS Building to be supplied as per schedule 1 including internal cable trench, finishing(external & Internal) etc. complete as per technical specification and approved drawings, excluding excavation, PCC, RCC and reinforcement steel which shall be measured and paid seperately under respective items of BPS.										
(a)	GIS Hall			700	Sq. M.						
(b)	AHU/ Panels Room			500	Sq. M.						
24	Geotechnical /Soil Investigation			1	LS			-			
	Total for Schedule 4(Total of column 9 and 11 to be carried forward to Schedule 5: Grand Su	mmary)						-			

Name of Bidder: Signature of Bidder: (Printed Name) (Designation) (Common Seal)

Date:

400 kV(GIS)/220kV (GIS) Lapsiphedi Substation Schedule No. 4 : Installation and Other Services (b):Training Charges for training to be imparted abroad (Common for all three substations)

SI. No.	Description	Item for which training is to be imparted.	Country where training is to be imparted	Nos. of Trainee	Training duration in days	Currency	Training charge per Trainee per day	Total Training Charges
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)=(5)x(6)x(8)
	None							
	Total for Training Charges							-

REMARKS:

1. Training at Manufacturer's works: The Contractor shall include in the training charges payment of per Diem allowance to NEA trainees @ USD 100 per day per trainee for the duration of training abroad towards accommodation, meals and other incidental expenses and to and fro economy class air ticket from Nepal to place of training. The duration of training shall be excluding travelling period.

Name of Bidder: Signature of Bidder: (Printed Name) (Designation) (Common Seal)

400 kV(GIS)/220kV (GIS) Lapsiphedi Substation

Schedule No. 4 : Installation and Other Services

(c):Training Charges for training to be imparted to Employer's Personnel by Bidder's Instructor in Nepal (Common for all three substations)

SI. No.	Description of the Test	Item for which training is to be imparted.	Training duration in days	Currency	Per Day Training Charges for Contractors Trainers	Total Training Charges			
(1)	(2)	(3)	(4)	(5)	(6)	(7)=(4)x(6)			
	None								
	Total for Training Charges					-			
Total for Schedule 4 (Total of column 7 to be carried forward to Schedule 5: Grand Summary)									

REMARKS:

Name of Bidder: Signature of Bidder: (Printed Name) (Designation) (Common Seal)

NEPAL ELECTRICITY AUTHORITY PROJECT MANAGEMENT DIRECTORATE Khimti-Barhabise-Lapsiphedi 400 kV Substation Project

400 kV(GIS)/220kV (GIS) Lapsiphedi Substation Schedule No. 4 : Installation and Other Services (d): Maintenance Charges

				Total	Maintenance Charges			
SI No	Description			Currency	Total Maintenance Charges			
1	None	Year						
2	None	Year						
	Total for Schedule 4 (Total of column 5 to be carried forward to Schedule 5: Grand Summary)							

Name of Bidder: Signature of Bidder: (Printed Name) (Designation) (Common Seal)

NEPAL ELECTRICITY AUTHORITY PROJECT MANAGEMENT DIRECTORATE

Khimti-Barhabise-Lapsiphedi 400 kV Substation Project

400 kV(GIS)/220kV (GIS) Lapsiphedi Substation

Schedule No. 4 : Installation and Other Services

(e) : Type Test Charges for Type Tests to be conducted abroad.

SI. No.	Description of Tests	Testing Location	TEST CHARGES		
			Currency	Amount	
1	2	3	4	5	
	None				
	None				
	Total of Type Tests charges (Total of column 5 to be carried forward to Schedule 5: Grand Summary)				

Name of Bidder: Signature of Bidder: (Printed Name) (Designation) (Common Seal)

Nepal Electricity Authority

Project Management Directorate Khimti-Barhabise-Lapsiphedi 400 kV Substation Project

400 kV(GIS)/220kV (GIS) Lapsiphedi Substation

Schedule No. 6: Recommended Availability/Optional Spares Parts and recommended Test Equipment in line with technical Specifications

Item No.	Name & Description of Parts	Name of Original	Part No.	Number of Units in	Total No. of Sets to	Unit Price	Total Price	Remarks
		Manufacturer		each set	be provided			
	None							

Name of Bidder: Signature of Bidder: (Printed Name) (Designation) (Common Seal)