

NEPAL ELECTRICITY AUTHORITY

(An Undertaking of Government of Nepal)
Project Management Directorate

LAPSIPHEDI & CHANGUNARAYAN SUBSTATION CONSTRUCTION PROJECT



(A Component of
Power Transmission and Distribution Efficiency Enhancement Project)

BIDDING DOCUMENT FOR

**Procurement of Plant for Design, Supply, Installation and Commissioning of Gas insulated
220kV Lapsiphedi Substation and 132kV Changunarayan Substation.**

**Single-Stage, Two-Envelope
Bidding Procedure**

Issued on:	26 May 2017
Invitation for Bids No.:	PMD/PTDEEP/LCSCP-073/74 - 01
ICB No.:	PMD/ PTDEEP/LCSCP-073/74 - 01
Employer:	Nepal Electricity Authority
Country:	Nepal

VOLUME -III OF III

**Lapsiphedi and Changunarayan Substation Construction Project
Project Management Directorate
Matatirtha, Kanchan Basti,
Chandragiri 11, Kathmandu, Nepal**

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SECTION IV PRICE SCHEDULE

Note:

- 1) Bidder is required to quote prices in this Schedule for all the individual items/sub-items.
- 2) The Prices of equipment's are inclusive of type test charges.
- 3) BOQ given is indicative only based on the scope of work as given in Employer's Requirements. The quantities mentioned above may undergo change during detailed engineering to meet the functional requirement and scope of work defined in Employer's Requirements. [The Contractor shall prepare and submit the final BOQ within 90 days of signing of Contract.](#)



NEPAL ELECTRICITY AUTHORITY
PROJECT MANAGEMENT DIRECTORATE
Lapsephedi & Changunarayan Substation Construction Project

Power Transmission and Distribution Efficiency Enhancement Project

PMD/PTDEEP/LCSCP-073/74/01:Design, Supply, Installation and Commissioning of Gas insulated 220kV Lapsiphedhi Substation and 132kV Changunarayan Substation

FC: Foreign Currency

Schedule No.1: Plant and Equipment including Mandatory Spares to be supplied from abroad

LC: Local Currency

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)	Custom, VAT and other taxes
			Unit	Quantity	FC			FC	LC
					Currency#	Unit Rate	Amount	8 = (7) x (5)	9=8
1	2	3	4	5	6	7	8 = (7) x (5)	9=8	10
PART 1	220/132/11kV GIS Lapsephedi Substation								
	PART - A: OWNER ASSESSED QUANTITIES								
A1.1	POWER TRANSFORMER								
1	53.33MVA, 220/√3 / 132/√3 kV Single Phase Power Transformer (without transformer Oil)		Nos.	4					
2	Insulating oil for the above Power Transformer		Lot	4					
3	33kV Current transformer (NCT) for autotransformer		No	1					
A1.2	POWER TRANSFORMER								
1	5 MVA, 132 /11 kV Three Phase Power Transformer (without transformer Oil)		Nos.	1					
2	Insulating oil for the above Power Transformer		Lot	1					
B	Testing & Maintenance Equipments								
1	Oil Storage tank of 20KL		Nos.	2					
2	Transformer Oil Filtration plant (6KLPH)		No	1					
C	LT Transformer								
1	315KVA 11/0.400 Kv		Nos.	2					
D	245 KV EQUIPMENTS								
DI	245KV GIS Equipment								
1.1	245kV, SF6 GIS Bus Bars Module [Module description as per Technical Project specification]		Sets	2					
1.2	245kV, SF6 GIS Bus Coupler bay Module [Module description as per Technical Project specification]		Sets	1					
1.3	245kV, SF6 GIS Line bay Module [Module description as per Technical Project specification]		Sets	2					
1.4	245kV, SF6 GIS spare Line feeder bay Module as per section project		Sets	1					
1.5	2145kV, SF6 GIS ICT bay Module [Module description as per Technical Project specification]		Sets	1					

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1	2	3	4	5	6	7	8 = (7) x (5)	9=8	10
1.6	SF6 Gas Insulated Bus Duct (GIB) outside GIS Hall alongwith associated support structure and accessories								
1.6.1	OPTION-I 2000A, 40kA for 1 sec. Single Phase		Mtr.	360					
1.6.2	OPTION-II 2000A, 40kA, 1sec three phase		Mtr.	120					
	Note : Bidder is required to quote for either option-I or Option-II								
1.7	220kV, SF6 to Air Bushing alongwith associated support structure for Connecting GIS to AIS alongwith support structure								
1.7.1	2000A, 40kA for 1 sec. Single Phase		Nos.	13					
D.2	245KV Outdoor Equipment								
1.0	216 KV Surge Arrester (1-phase)		Nos.	13					
2.0	245kV Capacitive Voltage Transfromer for line		Nos.	9					
3.0	245kV Bus Post Insulator (1-Phase) (Except for wave trap)		Nos.	15					
E	145kV Equipment								
E.1	145KV GIS Equipment								
1.1	145kV, SF6 GIS Bus Bars Module [Module description as per Technical Project specification]		Sets	2					
1.2	145kV, SF6 GIS Bus Coupler bay Module [Module description as per Technical Project specification]		Set	1					
1.3	145kV, SF6 GIS Line bay Module [Module description as per Technical Project specification]		Sets	2					
1.4	145kV, SF6 GIS Spare Line bay Module [Module description as per Technical Project specification]		Sets	1					
1.5	145kV, SF6 GIS ICT feeder bay Module as per section project for 220/132 kV Transformer		Sets	1					
1.6	145kV, SF6 GIS ICT feeder bay Module as per section project for 132/11 kV Transformer		Sets	1					
1.7	SF6 Gas Insulated Bus Duct (GIB) outside GIS hall including Bus Duct support structure and associated accessories								
1.7.1	OPTION-I 1250A, 31.5kA for 1 sec. Single Phase		Mtr.	300					
1.7.2	OPTION-II 1250A, 31.5A, 1sec three phase		Mtr.	100					
	Note : Bidder is required to quote for either option-I or Option-II								
1.8	145kV, SF6/Air Bushing for Connecting GIS to AIS alongwith support structure								
1.8.1	1250A, 31.5kA, 1sec single phase		Set	16					
E.2	145kV EQUIPMENT (AIS)								
1.0	120 kV Surge Arrestors (1-Phase)		Nos.	16					
2.0	8800pF, 145 kV Capacitive Voltage Transformer (1-Phase)		Nos.	9					
3.0	145KV Bus Post Insulator		Nos.	9					

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F	11 KV EQUIPMENT								
1.0	9 kV Surge Arrester (1 ph.)		Nos	6					
G	11kV, 25 kA (3 Phase) Indoor switch gear panel								
1.0	11 kV Indoor VCB Switchgear								
1.1	11kV 2000A Incomer		Nos	2					
1.2	11kV 1250A Outgoing		Nos	4					
1.3	11kV 2000A Buscoupler		Nos	1					
1.4	11kV 2000A Trunking		Nos	1					
H	Testing & Maintenance Equipment for GIS								
1	SF6 Gas processing Unit		Set	1					
2	Partial Discharge Monitoring System		Set	1					
3	Dew Point Meter		Set	1					
4	SF6 Gas Leak Detector		Set	1					
5	Portable Ladder with adustable height as per TS		Nos.	1					
6	EOT crane for 220kV GIS Hall		Set	1					
7	EOT crane for 132kV GIS Hall		Set	1					
I	RELAY PANELS (WITH AUTOMATION)								
1	245kV								
1.1	Circuit Breaker Relay Panel								
1.1.1	CB Relay Panel With Auto Reclose		Nos.	3					
1.1.2	CB Relay Panel Without Auto Reclose		Nos.	2					
1.2	Line Protection Panel		Nos.	3					
1.3	Transformer Protection Panel (For both HV & MV side)		Nos.	1					
1.4	Bus Coupler Protection Panel		Nos.	1					
1.5	Bus Bar Protection Panel		set	1					
2	145kV								
1.1	Circuit Breaker Relay Panel								
1.1.1	CB Relay Panel With Auto Reclose		Nos.	3					
1.1.2	CB Relay Panel Without Auto Reclose		Nos.	3					
1.2	Line Protection Panel		Nos.	3					
1.3	Transformer Protection Panel (For both HV & MV side)		Nos.	1					
1.4	BusCoupler Protection Panel		Nos.	1					
1.5	Bus Bar Protection Panel		set	1					

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3	Other/Common equipments Pertaining to C & R System								
3.1	Time Synchronisation Equipment		No.	1					
3.2	Relay Test kit		No.	1					
J	SUBSTATION AUTOMATION								
1	Substation Automation System as per Technical Specification:								
1.1	220kV System		Nos.	5					
1.2	132 kV System		Nos.	6					
1.3	BCU for auxiliary system		set	1					
1.4	11 kV HT Indoor Switchgear		Nos.	7					
K	Digital Protection Coupler & PBAX								
1	Digital Protection Coupler		Nos	12					
2	PBAX with following configuration as per TS		Set	1					
2.1	2 wire subscriber interface card with capacity 32 local subscribers (along with 32 nos. Instruments)								
2.2	4 wire E & M interface card with capacity 8 nos. trunks (For PLCC)								
2.3	E-1 interface with 2 trunks G-703								
2.4	2 wire interface with 1 trunk (For PSTN)								
3	4 wire telephone equipment		No	1					
L	LT Switchgear (As per Technical specification)								
1	400V Main switchboard		Set	1					
2	400V ACDB		Set	1					
3	400V MLDB		Set	1					
4	400V Emergency LDB		Set	1					
5	220V DCDB		Sets	1					
6.0	48V DCDB		Set	1					
M	Batteries								
1	220V								
	i 600 AH		Nos	2					
2	48V								
	i 600AH		Nos	2					

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N	Float Cum Boost Battery Charger								
1	220V Float Cum Boost Battery Charger								
	i 80A/80A		Nos	2					
2	48V Float Cum Boost Battery Charger								
	i 80A/80A		Nos	2					
O	Diesel Generator with control Panel								
a	250 kVA		Set	1					
P	Fire Protection System								
1	Portable /Trolley/Wheel mounted extinguishers								
1.1	9 litre water type		Nos	2					
1.2	50 litre foam type		Nos	2					
1.3	4.5 kg CO ₂ type		Nos	6					
1.4	4.5 kg Dry Chemical Power (DCP) type		Nos	2					
2.0	Smoke detection system		Set	1					
3.0	Fire detection and Alarm System		Set	1					
Q	Cables along with clamps, glands, lugs and straight joints etc.								
1.0	11kV HT 3C, 300 Sq.mm Aluminum Cable alongwith accessories and termination equipments for termination of 11 kV Line		KM	2					
2.0	11kV HT 3C, 300 Sq.mm Aluminum Cable alongwith accessories and termination equipments for termination of 11 kV LT Transformer		KM	0.25					
3.0	11kV HT Cu Cable (3CX300 SQmm) for 11k kV side of 132/11 kV Transformer alongwith accessories and termination equipments		KM	0.25					
4	Power Cables - (1.1kV grade)								
4.1	3.5Cx300 sqmm (XLPE) cable for filter Machine along with 2 nos outdoor receptacles -250A		KM	0.25					
R	Air conditioning								
1	High wall type split AC unit of 2 TR capacities for control room, relay room and battery room		Nos.	25					
S	STEEL STRUCTURES (Tower,Gantry structures& Equipment support structures)								
1.0	Lattice/pipe Structure for towers,beams and equipments including peak plates/pack washers and guest paltes including foundation bolts(nuts,washers,MS plate welded at the bottom)								
1.1	Lattice structure & foundation bolts		MT	55					
1.2	Pipe Structure including Foundation Bolts .		MT	20					
1.3	Fastners for towers,beams and equipment support strcutures		MT	3					

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T	Communication Equipment (detail as per TS)								
1	Transmission Equipment								
1.1	SDH Equipment (STM- 4 MADM, upto 3 MSP protected directions)								
1.1	Base Equipment (Common cards, Cross-connect/control cards, Optical base cards, Power supply cards, power cabling, other hardware & accessories including sub-racks, patch cords, DDF etc. fully equipped excluding (II) and (III) below)		No.	4					
1.1.	Optical Interface/SFP² for								
1.1.1	S4.1		Nos.	12					
1.1.2	L4.2		Nos.	4					
1.2	Tributary Cards								
1.2.1	E1 Interface card (Minimum 16 interfaces per card)		Nos.	4					
1.2.2	Ethernet interfaces 10/100 Mbps with Layer-2 switching (Minimum 4 interfaces per card.)		No.	8					
1.3	Integration at Optical level at Existing S/S & LDC with Existing equipment (Existing equipment at DXC – 5000 of Alstom Make)		set	2					
2	Termination Equipment								
2.1	Drop/Insert Multiplexer Base Equipment (Common cards, Power supply cards, power cabling, other hardware & accessories including sub-racks, etc. fully equipped excluding subscriber line interface cards)		Nos.	3					
2.2	Subscriber Line Interface Cards								
2.2.1	2 wire (sub/sub) voice channel cards (min 8 channels per card)		Nos.	2					
2.2.2	2 wire (sub/Exch) voice channel cards (min 8 channels per card)		Nos.	1					
2.2.3	4 wire (E&M) voice channel cards (min 8 channels per card)		Nos.	3					
2.2.4	Asynchronous Sub Channels data cards (minimum 4 channels per card)		No.	3					
2.2.5	Synchronous data card (NX64kbps)		Nos.	3					
3	Equipment Cabinets								
3.1	For Drop/Insert Multiplexer		No.	3					
3.2	For SDH Equipment		No.	2					
4	TMN – Craft Terminal for SDH & PDH Equipments								
4.1	Hardware		set	1					
4.2	Software		set	1					
5	Main Distribution Frame (100 pairs)		no	3					
6.0	Test Equipment as per TS		set	1					
	SUB TOTAL PART-A								

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	PART-B: VENDOR ASSESSED QUANTITIES								
A	Erection Hardware :-Insulator strings, Disc Insulators, Hardware, conductor, bus-bar materials, cable trays, clamps, spacers, connectors including connectors for Auto Transformer, Junction box, earthwire, earthing material risers, buried cable trenches/pipe of equipment & lighting, all accessories etc. for the following:								
1	220 kV DM-type layout for GIS termination arrangement!								
1.1	Line Bay		Set	2					
1.2	Spare Line bay		set	1					
1.3	Transformer Bay		Sets	1					
2	132 kV DM-type layout for GIS termination arrangement!								
1.1	Line Bay		Sets	2					
1.2	Spare Line bay		set	1					
1.3	Transformer Bay		Sets	2					
B	Bus post insulators, Spacers, equipment support structures, conductor(s), Al tube, clamp, connectors required for arrangement of Neutral formation for one transformer bank for making connection arrangement to connect spare unit in place of any other unit without physical shifting complete in all respect		Sets	1					
C	Air conditioning & ventilation System								
1	Ventilation & Airconditioning system (as per technical specification)								
1.1	220kV GIS Hall		LS	1					
1.2	132 kV GIS Hall		LS	1					
D	Illumination System								
1.1	Substation Lighting								
1.1.1	Control Room cum administrative building illumination		LS	1					
1.1.2	220kV GIS Building		LS	1					
1.1.3	132kV GIS Building		LS	1					
1.2	Security Room		LS	1					
1.3	Fire fighting Room		LS	1					
1.4	Outdoor Switchyard Lighting		LS	1					

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1.5	Street Lighting		LS	1					
1.6	Occupancy sensor		LS	1					
1.7	Township Area Lighting		LS	1					
E	Fire Protection System per technical Specification)								
1	Pumping arrangement for HVW system & hydrant system, complete with all piping, valves, fittings,etc. inside pump house								
2	Hydrant system, complete U/G piping and accessories etc. outside the Pump House.								
3	HVW spray system, Hydrant system and complete U/G & O/G piping and accessories etc. out side the pump house for Transformer :								
3.1	53.33 MVA, 220/132 kV Single Phase Auto Transformer		nos	4					
3.2	5 MVA,132/11 kV Three phase transformer		nos	1					
F	POWER & CONTROL CABLES								
1	1.1 kV LV Cables								
1.1	Power Cables(PVC)- (1.1kV grade)		LS	1					
1.2	Control Cable (PVC)- (1.1kV grade)		LS	1					
1.3	Cable glands, lugs & straight through joints for Power & Control cables		LS	1					
G	Visual Monitoring System for watch & ward as per technical specification		LS	1					
H	Earthing and lightning protection including necessary connectors/connections, risers etc. complete in all respect(but excluding LM structures for Lightning protection)								
1.0	Earth Conductor (copper)		LS	1					
2.0	Earth Rod (copper clad steel)		LS	1					
3.0	Equipment for lightning protection		LS	1					
H	SUBSTATION AUTOMATION								
1	Integration of all 220/132kV Bays under present scope with the SCADA of SIEMENS (SINAUT Spectrum) at Load Dispatch Centre, Kathmandu including supply of Hardware, Software, accessories etc. as per TS Section Project.		LS	1					
	SUB TOTAL PART-B								

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PART-C: MANDATORY SPARES (Break up of Lumpsum quantity shall be as per Annexure-I, Section Project of Technical Specification).									
I.	Transformer(220/132 kV)								
1.1	Oil cooler pump with motor		Set	1					
1.2	Cooler Fan with motor		No.	1					
1.3	Local & Remote WTI with sensing device & contact (each type)		Set	1					
1.4	Buchholz relay complete with contacts (Main tank)		Set	1					
1.5	Magnetic oil level gauge		No.	1					
1.6	Starters, contactors, switches & relays for electrical control panels (one set of each type)		Set	1					
1.7	Remote tap position Indicator		No.	1					
1.8	Oil Flow indicator with flow switch		Set	1					
1.9	245kV Bushing with metal parts and gaskets and lifting tools		Nos.	1					
1.10	145 kV Bushing with metal parts and gaskets and lifting tools		Nos.	1					
1.11	36kV Bushing with metal parts and gaskets and lifting tools		Nos.	1					
1.12	Spare insulating oil to be handed over to after commissioning for O&M requirement		KL	10					
2	Transformer(132/11 kV)								
2.1	Cooler Fan with motor		No.	1					
2.2	Local & Remote WTI with sensing device & contact (each type)		Set	1					
2.3	Buchholz relay complete with contacts (Main tank)		Set	1					
2.4	Magnetic oil level gauge		No.	1					
2.5	Starters, contactors, switches & relays for electrical control panels (one set of each type)		Set	1					
2.6	Remote tap position Indicator		No.	1					
2.7	Oil Flow indicator with flow switch		Set	1					
2.8	145kV Bushing with metal parts and gaskets and lifting tools		Nos.	1					
2.9	12 kV Bushing with metal parts and gaskets and lifting tools		Nos.	1					
2.10	Spare insulating oil to be handed over to POWERGRID after commissioning for O&M requirement		KL	10					

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3	GIS(220 KV & 132 KV)								
3.1	General								
3.1.1	SF6 gas Pressure Relief Devices, 1Nos. of each type		Set	1					
3.1.2	SF6 Pressure gauge cum switch OR Density monitors and pressure switch as applicable (1 no. of each type)		Set	1					
3.1.3	Coupling device for pressure gauge cum switch for connecting Gas handling plant		Set	1					
3.1.4	Rubber Gaskets, "O" Rings and Seals for SF6 gas of each type		Set	1					
3.1.5	Molecular filter for SF6 gas with filter bags(20% of total weight)		Set	1					
3.1.6	All types of Control Valves for SF6 gas of each type		Set	1					
3.1.7	SF6 gas (20 % of total gas quantity)		Set	1					
3.1.8	All types of coupling for SF6 gas (1 no. of each type)		Set	1					
3.1.9	Pipe length (Copper or Steel as applicable) for SF6 Circuit of each type		Set	1					
3.1.10	Covers with all accessories necessary to close a compartment in case of dismantling of any part of the Enclosure to ensure the sealing of this compartment								
3.1.10.1	For 3 Phase Enclosure if applicable		No.	1					
3.1.10.2	For Single phase enclosure if applicable		No.	1					
3.1.11	Locking device to keep the Dis-connectors (Isolators) and Earthing switches in close or open position in case of removal of the driving Mechanism		Set	1					
3.1.12	Bus Support insulator of each type for 3 phase/single phase enclosure.		No.	1					
3.1.13	SF6 to air bushing (220kV & 132kV - 1 No. of each type & rating) as applicable		Set	1					
3.2	245KV SF6 CIRCUIT BREAKER:								
3.2.1	Complete Circuit Breaker pole of each type & rating complete with interrupter, main circuit enclosure and Marshalling Box with operating mechanism		No.	1					
3.2.2	Rubber gaskets, 'O' rings and seals for SF6 gas (1 No. of each type)		Set	1					
3.2.3	Trip coil assembly with resistor as applicable		Set	1					
3.2.4	Closing coil assembly with resistor as applicable.		Set	1					
3.2.5	Relays, Power contactors, push buttons, timers & MCBs etc (1 No. of each type & rating)		Set	1					
3.2.6	Closing coil assembly (including valve, if applicable)		Set	1					
3.2.7	Trip coil assembly (including valve, if applicable)		Set	1					
3.2.8	Auxiliary switch assembly of each type		Set	1					

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3.3	145KV SF6 CIRCUIT BREAKER:								
3.3.1	Complete Circuit Breaker pole of each type & rating complete with interrupter, main circuit enclosure and Marshalling Box with operating mechanism		No.	1					
3.3.2	Rubber gaskets, 'O' rings and seals for SF6 gas (1 No. of each type)		Set	1					
3.3.3	Trip coil assembly with resistor as applicable		Set	1					
3.3.4	Closing coil assembly with resistor as applicable .		Set	1					
3.3.5	Relays, Power contactors, push buttons, timers & MCBs etc (1 No. of each type & rating)		Set	1					
3.3.6	Closing coil assembly (including valve, if applicable)		Set	1					
3.3.7	Trip coil assembly (including valve, if applicable)		Set	1					
3.3.8	Auxiliary switch assembly of each type		Set	1					
3.4	245KV ISOLATORS :								
3.4.1	Complete set of 3-phase dis-connector including main circuit, enclosure, driving mechanism		Set	1					
3.4.2	3-phase Earthing switch including main circuit, enclosure, driving mechanism.		Set	1					
3.4.3	Copper contact fingers for dis-connector male & female contact for one complete (3 phase) dis-connector of each type and rating		Set	1					
3.4.4	Copper contact fingers for earthing switch male & female contacts, for one complete (3 phase) earthing switch of each type and rating		Set	1					
3.4.5	Open / Close contactor assembly, timers, key interlock for one complete (3 phase) dis-connector and (3 phase) earthing switch of each rating (1 No. of each type and rating)		Set	1					
3.4.6	Push button switch - (1 No. of each type & rating) as applicable		Set	1					
3.4.7	Limit switch and Aux. Switches for complete 3 phase equipment								
3.4.7.1	For isolator		Set	1					
3.4.7.2	For earth switch		Set	1					
3.5	145KV ISOLATORS :								
3.5.1	Complete set of 3-phase dis-connector including main circuit, enclosure, driving mechanism		Set	1					
3.5.2	3-phase Earthing switch including main circuit, enclosure, driving mechanism.		Set	1					
3.5.3	Copper contact fingers for dis-connector male & female contact for one complete (3 phase) dis-connector of each type and rating		Set	1					
3.5.4	Copper contact fingers for earthing switch male & female contacts, for one complete (3 phase) earthing switch of each type and rating		Set	1					
3.5.5	Open / Close contactor assembly, timers, key interlock for one complete (3 phase) dis-connector and (3 phase) earthing switch of each rating (1 No. of each type and rating)		Set	1					

Schedule No.1: Plant and Equipment including Mandatory Spares to be supplied from abroad

LC: Local Currency

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)	Custom, VAT and other taxes
			Unit	Quantity	FC			FC	LC
					Currency#	Unit Rate	Amount		
1	2	3	4	5	6	7	8 = (7) x (5)	9=8	10
3.5.6	Push button switch - (1 No. of each type & rating) as applicable		Set	1					
3.5.7	Limit switch and Aux. Switches for complete 3 phase equipment								
3.5.7.1	For isolator		Set	1					
3.5.7.2	For earth switch		Set	1					
3.6	245KV CURRENT TRANSFORMER								
3.6.4	Gas insulated complete CT of each type and rating with enclosure.		No.	1					
3.6.2	Secondary bushing of each type		Set	1					
3.7	145KV CURRENT TRANSFORMER								
3.7.1	Gas insulated complete CT of each type and rating with enclosure.		No.	1					
3.7.2	Secondary bushing of each type		Set	1					
4	245kV Voltage Transformer								
4.1	Gas insulated complete PT of each type and rating with enclosure.		No.	1					
5	145 kV Voltage Transformer								
5.1	Gas insulated complete PT of each type and rating with enclosure.		No.	1					
6	AIS Capacitive Voltage Transformer								
6.1	220kV,4400pF CVT (excluding support structure/ common JB)		No.	1					
6.2	132kV, 8800pF CVT (excluding support structure/ common JB)		No.	1					
7	AIS Surge Arrestors								
7.1	216kV Surge Arrestor with insulating base, terminal connector , Surge counter & accessories (excluding support structure)		Set	1					
7.2	120kV Surge Arrestor with insulating base, terminal connector , Surge counter & accessories (excluding support structure)		Set	1					
8	DG Set								
8.1	Self starter assembly		No.	1					
8.2	AVR (Auto Voltage Regulator)/ AVR card		Set	1					

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			Unit	Quantity	FC			FC	LC
					Currency#	Unit Rate	Amount		
1	2	3	4	5	6	7	8 = (7) x (5)	9=8	10
9	Battery Charger								
9.1	220V Battery Chargers								
9.1.1	Set of Control Cards		Set	1					
9.1.2	Set of relays		Set	1					
9.1.3	Rectifier transformer		No.	1					
9.1.4	Thyristor/ Diode		Set	1					
9.1.5	Fuses of Thyristor with indicators		Set	6					
9.2	48V Battery Chargers								
9.2.1	Set of Control Cards		Set	1					
9.2.2	Set of relays		Set	1					
9.2.3	Rectifier transformer		No.	1					
9.2.4	Thyristor/ Diode		Set	1					
9.2.5	Fuses of Thyristor with indicators		Set	6					
10	Relay & Protection								
10.1	Line Protection Panel								
10.1.1	Numerical distance relay (1 no. of each type)		Set	1					
10.2	Transformer Protection Panel								
10.2.1	Transformer differential protection		No.	1					
10.2.2	Restricted earth fault protection relay with non-linear resistor		No.	1					
10.2.3	Directional over current & E/F Protection Relay		no	1					
10.3	COMMON SPARES								
103.1	Power supply module for Bus Bar protection.		No.	1					
10.3.2	Bay unit module		Set	1					
10.4	Breaker protection Relay								
10.4.1	Breaker failure relay		No.	1					
10.4.2	Trip circuit supervision relay		Nos.	2					
10.4.3	Self reset trip relay (relay of each type)		Set	1					
10.4.4	Hand reset trip relay(relay of each type)		Set	1					
10.4.5	Timer relay(relay of each type)		Set	1					
10.4.6	DC supervision relay(relay of each type)		Set	1					
10.4.7	Flag relays(relay of each type)		Set	1					
10.4.8	Auxiliary relays(relay of each type)		Set	1					

Schedule No.1: Plant and Equipment including Mandatory Spares to be supplied from abroad

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					Currency#	Unit Rate	Amount		
1	2	3	4	5	6	7	8 = (7) x (5)	9=8	10
11	Digital protection Coupler		LS	1					
12	Sub-Station Automation System								
12.1	Bay control unit (IED) of each type		Set	1					
12.2	Ethernet switch of each type		Set	1					
13	LT Transformer								
13.1	Bushings (Each type)		Set	1					
13.2	Diaphragm for pressure relief vent		No.	1					
13.3	Silica gel container		No.	1					
13.4	Set of Valves (Each Type)		Set	1					
13.5	Buchholz relay (if applicable)		No.	1					
14	Illumination System		LS	1					
14.1	5% of each type of lighting fixture supplied								
15	Erection Hardware		LS	1					
15.1	5% spares of the actual quantities for Insulator strings & hardwares, clamps & connectors (including equipment connectors), spacers, corona bell and welding sleeves,								
16	Telecommunication Equipments								
16.1	Transmission Equipment								
16.1.1	SDH Equipment (STM- 4 MADM, upto 3 MSP protected directions)								
16.1.1.1	Common cards, Power supply cards, power cabling, other hardware & accessories (each)		Set	1					
16.2	Optical Interface/SFP for								
16.2.1	S1.1		No.	1					
16.2.2	S4.1		No.	1					
16.2.3	L4.2		No.	1					
16.3	Tributary Cards								
16.3.1	E1 Interface card (Minimum 16 interfaces per card)		No.	1					
16.3.2	Ethernet interfaces 10/100 Mbps with Layer-2 switching (Minimum 4 interfaces per card.)		No.	1					

Schedule No.1: Plant and Equipment including Mandatory Spares to be supplied from abroad

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1	2	3	4	5	6	7	8 = (7) x (5)	9=8	10
16.4	Termination Equipment								
16.4.1	Drop & Insert Multiplexer		Set	1					
16.4.2	Common cards, Power supply cards, power cabling, other hardware & accessories (each)								
16.5	Subscriber Line Interface Cards								
16.5.1	2 wire (sub/sub) voice channel cards (min 8 channels per card)		No.	1					
16.5.2	2 wire (Sub/Exch) voice channel cards (min 8 channels per card)		No.	1					
16.5.3	4 wire (E&M) voice channel cards (min 8 channels per card)		No.	1					
16.5.4	Asynchronous Sub Channels data cards, minimum 4 channels per card		No.	1					
16.5.5	Synchronous data card (NX64kbps)		No.	1					
16.6	Pre Connectorized Optical Fiber Patch Cords (10 Mtrs) – Pack of Six Patch Cords		Set	1					
17	LT Indoor Switchgear		LS	1					
17.1	Each type of MCB, MCCB, ELCB								
18	MV Indoor Swtichgear								
	(11) kV Switchgear								
18.1	11kV Vacuum Interrupter for Incomer and Outgoing		No.	3					
18.2	Tripping Coils		No.	3					
18.3	Closing Coils		Set	3					
18.4	Spring Charging Motor		Set	1					
18.5	Protection Relays								
18.5.1	3 phase Overcurrent Relay, for 11kV side one of each type		Nos.	1					
18.5.2	Ground Fault Relay, for 11kV side, oe of each type		Nos.	1					
18.6	Ammeter, Nos one of each rating		Nos.	1					
18.7	Voltmeter, Nos		Nos.	1					
18.8	kVA Meter, each		Nos.	1					
18.9	CTs of each type		set	1					
18.10	Operating Handle		No.	1					
18.11	Indicating lamps and fuses (100% of used), Lot		LS	1					
19	Fire Fighting								
19.1	Recommended Spares		Set	1					
	SUB-TOTAL-C								
	Total For PART 1 Lapsephedi Substation [(Part-A+ Part-B+ Part C)								

Schedule No.1: Plant and Equipment including Mandatory Spares to be supplied from abroad

LC: Local Currency

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					Currency#	Unit Rate	Amount		
1	2	3	4	5	6	7	8 = (7) x (5)	9=8	10
PART 2	132/11 kV Changunarayan S/S								
	PART -A: OWNER ASSESSED QUANTITIES								
A	POWER TRANSFORMER								
1	31.5/45 MVA, 132/11 kV Three Phase Power Transformer (without transformer Oil)		Nos.	1					
2	Insulating oil for the above Power Transformer		Lot	1					
3	Oil Storage tank of 20KL		Nos.	1					
B	LT Transformer								
1	315 KVA 11/0.400 Kv		Nos.	2					
C	145kV Equipment								
1.0	145KV GIS Equipment								
1.0	145kV, SF6 GIS Bus Bars Module [Module description as per Technical Project specification]		Sets	2					
1.2	145kV, SF6 GIS Bus Coupler bay Module [Module description as per Technical Project specification]		Set	1					
1.3	145kV, SF6 GIS Line bay Module [Module description as per Technical Project specification]		Sets	6					
1.3	145kV, SF6 GIS Spare Line bay Module [Module description as per Technical Project specification]		Sets	1					
1.4	145kV, SF6 GIS ICT feeder bay Module for Transformer [Module description as per Technical Project specification]		Sets	2					
1.5	SF6 Gas Insulated Bus Duct (GIB) outside GIS hall including Bus Duct support structure and associated accessories								
1.5.1	OPTION-I								
	1250A, 31.5kA for 1 sec. Single Phase		Mtr.	600					
1.5.2	OPTION-II								
	1250A, 31.5kA, 1sec three phase		Mtr.	200					
	Note : Bidder is required to quote for either option-I or Option-II								
1.6	145kV, SF6 to Air Bushing alongwith associated support structure								
1.6.1	1250A, 31.5kA, 1sec single phase		Set	27					
D	145kV EQUIPMENT (AIS)								
1.0	120 kV Surge Arrestors (1-Phase)		Nos.	27					
2.0	8800pF, 145 kV Capacitive Voltage Transformer (1-Phase)		Nos.	21					
3.0	145KV Bus Post Insulator		Nos.	21					
F	11 KV EQUIPMENT								
1.0	11 kV Isolator (3-phase)-HDB								
1.1.1	400A, 25kA for 3 sec, Isolator without E/s (Beam Mounted)		Set	8					
2.0	9 kV Surge Arrester (1 ph.)		Nos	12					

Schedule No.1: Plant and Equipment including Mandatory Spares to be supplied from abroad

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					Currency#	Unit Rate	Amount		
1	2	3	4	5	6	7	8 = (7) x (5)	9=8	10
G	11 kV Indoor VCB Switchgear								
1.1	11kV 2000A Incomer		Nos	2					
1.2	11kV 1250A Outgoing		Nos	10					
1.3	11kV 2000A Buscoupler		nos	1					
1.4	11kV 2000A Trunking		no	1					
H	Testing & Maintenance Equipment for GIS								
1.1	SF6 Gas processing Unit		Set	1					
1.2	Partial Discharge Monitoring System for 145kV GIS System as per Technical Specification, GIS		Set	1					
1.3	Dew Point meter for 145kV GIS System		Set	1					
1.4	SF6 Gas Leak Detector for 145kV GIS System		Set	1					
1.5	EOT crane for 145kV GIS Hall		Nos.	1					
1.6	SF6 Gas Analyser		Set	1					
I	RELAY PANELS (WITH AUTOMATION)								
1	145kV								
1.1	Circuit Breaker Relay Panel								
1.1.1	CB Relay Panel With Auto Reclose		Nos.	7					
1.1.2	CB Relay Panel Without Auto Reclose		Nos.	3					
1.2	Line Protection Panel		Nos.	7					
1.3	Transformer Protection Panel (For both HV & MV side)		Nos.	2					
1.4	Bus Bar Protection Panel		set	1					
3	Other/Common equipments Pertaining to C & R System								
3.1	Time Synchronisation Equipment		No.	1					
3.2	Relay Test kit		No.	1					
J	SUBSTATION AUTOMATION								
1	Substation Automation System as per Technical Specification:								
1.1	132 kV System		Nos.	10					
1.2	BCU for auxiliary system		set	1					
1.3	(11) kV HT Indoor Switchgear		Nos	13					

Schedule No.1: Plant and Equipment including Mandatory Spares to be supplied from abroad

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					Currency#	Unit Rate	Amount		
1	2	3	4	5	6	7	8 = (7) x (5)	9=8	10
K	Digital Protection Coupler & PBAX								
1	Digital Protection Coupler		Nos	16					
2	PBAX with following configuration as per TS		Set	1					
2.1	2 wire subscriber interface card with capacity 32 local subscribers (along with 32 nos. Instruments)								
2.2	4 wire E & M interface card with capacity 8 nos. trunks (For PLCC)								
2.3	E-1 interface with 2 trunks G-703								
2.4	2 wire interface with 1 trunk (For PSTN)								
L	LT Switchgear (As per Technical specification)								
1	400V Main switchboard		Set	1					
2	400V ACDB		Set	1					
3	400V MLDB		Set	1					
4	400V Emergency LDB		Set	1					
5	220V DCDB		Sets	1					
6.0	48V DCDB		Set	1					
M	Batteries								
1	110V								
1.1	600		Nos	1					
2	48V								
2.1	600		Nos	1					
N	Float Cum Boost Battery Charger								
1	100V Float Cum Boost Battery Charger								
1.1	45A/45A		Nos	2					
2	48V Float Cum Boost Battery Charger								
2.1	45A/45A		Nos	2					
O	Diesel Generator with control Panel								
1	100 kVA		Set	1					
P	Fire Protection System								
1	Portable /Trolley/Wheel mounted extinguishers								
1.1	9 litre water type		Nos	2					
1.2	50 litre foam type		Nos	2					
1.3	4.5 kg CO ₂ type		Nos	6					
1.4	4.5 kg Dry Chemical Power (DCP) type		Nos	2					
2.0	Smoke detection system		Set	1					
3.0	Fire detection and Alarm System		Set	1					

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1	2	3	4	5	6	7	8 = (7) x (5)	9=8	10
Q	Cables along with clamps, glands, lugs and straight joints etc.								
1.0	11kV HT Cable 3C, 300Sq.mm Aluminum alongwith accessories and termination equipments for termination of 11 kV line		KM	1.5					
2.0	11kV HT Cable 3C, 300 Sq.mm. Aluminum alongwith accessories and termination equipments for termination of 11 kV LT Transformer		KM	0.25					
3.0	11kV HT Cable (1CX800 SQmm) Copper for 11k kV side of 132/11 kV Transformer alongwith accessories and termination equipments		KM	1					
4	Power Cables - (1.1kV grade)								
4.1	3.5Cx300 sqmm (XLPE) cable for filter Machine along with 2 nos outdoor receptacles -250A		KM	0.25					
R	Air conditioning								
1	High wall type split AC unit of 2 TR capacities for control room, relay room and battery room		Nos.	20					
S	STEEL STRUCTURES (Tower,Gantry structures& Equipment support structures)								
1.0	Lattice/pipe Structure for towers,beams and equipments including peak plates/pack washers and guest paltes including foundation bolts(nuts,washers,MS plate welded at the bottom)								
1.1	Lattice stucture & foundation bolts		MT	80					
1.2	Fastners for towers,beams and equipment support strcures		MT	5					
	SUB TOTAL PART-A								
	PART-B: VENDOR ASSESSED QUANTITIES								
A	Erection Hardware :-Insulator strings, Disc Insulators, Hardware, conductor, bus-bar materials, cable trays, clamps, spacers, connectors including conectors for Auto Transformer , Junction box, earthwire, earthing material risers, buried cable trenches/pipe of equipment & lighting, all accessories etc. for the following:								
1	132 kV DM-type layout for GIS termination arrangemnt								
1.1	Line Bay		Sets	6					
1.2	Spare Line Bay			1					
1.3	Transformer Bay		Sets	2					
B	Ventilation & heating System								
1	Ventilation & heating system (as per technical specification)								
1.1	132 kV GIS Hall		LS	1					

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1	2	3	4	5	6	7	8 = (7) x (5)	9=8	10
C	Illumination System								
1.1	Substation Lighting								
1.1.1	Control Room cum administrative building illumination		LS	1					
1.1.2	132kV GIS Building		LS	1					
1.2	Fire Fighting Room		LS	1					
1.3	Security Room		LS	1					
1.4	Outdoor Switchyard Lighting		LS	1					
1.5	Street Lighting		LS	1					
1.6	Occupancy sensor		LS	1					
D	Fire Protection System per technical Specification)								
1	Pumping arrangement for HVW system & hydrant system, complete with all piping, valves, fittings,etc. inside pump house		set	1					
2	Hydrant system, complete U/G piping and accessories etc. outside the Pump House.		set	1					
3	HVW spray system, Hydrant system and complete U/G & O/G piping and accessories etc. out side the pump house for Transformer :								
3.1	45 MVA, 132/11 kV Three Phase Transformer		nos	1					
F	POWER & CONTROL CABLES								
1	1.1 kV LV Cables								
1.1	Power Cables(PVC)- (1.1kV grade)		LS	1					
1.2	Control Cable (PVC)- (1.1kV grade)		LS	1					
1.3	Cable glands, lugs & straight through joints for Power & Control cables		LS	1					
G	Visual Monitoring System for watch & ward as per technical specification		LS	1					
H	Earthing and lightning protection including necessary connectors/connections, risers etc. complete in all respect								
1.0	Earth Conductor (copper)		LS	1					
2.0	Earth Rod (copper clad steel)		LS	1					
3.0	Equipment for lightning protection		LS	1					
I	SUBSTATION AUTOMATION								
1	Integration of all 132/11kV Bays under present scope with the SCADA of SIEMENS (SINAUT Spectrum) at Load Dispatch Centre, Kathmandu including supply of Hardware, Software, accessories etc. as per TS Section Project.		LS	1					
	SUB TOTAL PART-B								

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PART-C: MANDATORY SPARES (Break up of Lumpsum quantity shall be as per Annexure-I, Section Project of Technical Specification).									
I.	Transformer(132/11 kV) 45 MVA		LS	1					
1.1	Oil cooler pump with motor		Set						
1.2	Cooler Fan with motor		No.	1					
1.3	Local & Remote WTI with sensing device & contact (each type)		Set	1					
1.4	Buchholz relay complete with contacts (Main tank)		Set	1					
1.5	Magnetic oil level gauge		No.	1					
1.6	Starters, contactors, switches & relays for electrical control panels (one set of each type)		Set	1					
1.7	Remote tap position Indicator		No.	1					
1.8	Oil Flow indicator with flow switch		Set	1					
1.9	145kV Bushing with metal parts and gaskets and lifting tools		Nos.						
1.10	12 kV Bushing with metal parts and gaskets and lifting tools		Nos.						
1.11	Spare insulating oil to be handed over to POWERGRID after commissioning for O&M requirement		KL	10					
II	GIS(132 KV)								
1	General								
1.1	SF6 gas Pressure Relief Devices, 1Nos. of each type		Set	1					
1.2	SF6 Pressure gauge cum switch OR Density monitors and pressure switch as applicable (1 no. of each type)		Set						
1.3	Coupling device for pressure gauge cum switch for connecting Gas handling plant		Set	1					
1.4	Rubber Gaskets, "O" Rings and Seals for SF6 gas of each type		Set	1					
1.5	Molecular filter for SF6 gas with filter bags(20% of total weight)		Set	1					
1.6	All types of Control Valves for SF6 gas of each type		Set						
1.7	SF6 gas (20 % of total gas quantity)		Set	1					
1.8	All types of coupling for SF6 gas (1 no. of each type)		Set	1					
1.9	Pipe length (Copper or Steel as applicable) for SF6 Circuit of each type		Set	1					
1.10	Covers with all accessories necessary to close a compartment in case of dismantling of any part of the Enclosure to ensure the sealing of this compartment								
1.10.1	For 3 Phase Enclosure if applicable		No.	1					
1.10.2	For Single phase enclosure if applicable		No.	1					

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			Unit	Quantity	FC			FC	LC
					Currency#	Unit Rate	Amount		
1	2	3	4	5	6	7	8 = (7) x (5)	9=8	10
1.11	Locking device to keep the Dis-connectors (Isolators) and Earthing switches in close or open position in case of removal of the driving Mechanism		Set	1					
1.12	Bus Support insulator of each type for 3 phase/single phase enclosure.		No.						
1.13	SF6 to air bushing (220kV & 132kV - 1 No. of each type & rating) as applicable		Set						
2	145KV SF6 CIRCUIT BREAKER:								
2.1	Complete Circuit Breaker pole of each type & rating complete with interrupter, main circuit enclosure and Marshalling Box with operating mechanism		No.						
2.2	Rubber gaskets, 'O' rings and seals for SF6 gas (1 No. of each type)		Set						
2.3	Trip coil assembly with resistor as applicable		Set	1					
2.4	Closing coil assembly with resistor as applicable .		Set	1					
2.5	Relays, Power contactors, push buttons, timers & MCBs etc (1 No. of each type & rating)		Set	1					
2.6	Closing coil assembly (including valve, if applicable)		Set	1					
2.7	Trip coil assembly (including valve, if applicable)		Set	1					
2.8	Auxiliary switch assembly of each type		Set	1					
3	145KV ISOLATORS :								
3.1	Complete set of 3-phase dis-connector including main circuit, enclosure, driving mechanism		Set						
3.2	3-phase Earthing switch including main circuit, enclosure, driving mechanism.		Set						
3.3	Copper contact fingers for dis-connector male & female contact for one complete (3 phase) dis-connector of each type and rating		Set						
3.4	Copper contact fingers for earthing switch male & female contacts, for one complete (3 phase) earthing switch of each type and rating		Set						
3.5	Open / Close contactor assembly, timers, key interlock for one complete (3 phase) dis-connector and (3 phase) earthing switch of each rating (1 No. of each type and rating)		Set	1					
3.6	Push button switch - (1 No. of each type & rating) as applicable		Set	1					
3.7	Limit switch and Aux. Switches for complete 3 phase equipment								
3.7.1	For isolator		Set	1					
3.7.2	For earth switch		Set	1					
4	145KV CURRENT TRANSFORMER								
4.1	Gas insulated complete CT of each type and rating with enclosure.		No.	1					
4.2	Secondary bushing of each type		Set	1					

Schedule No.1: Plant and Equipment including Mandatory Spares to be supplied from abroad

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)	Custom, VAT and other taxes
			Unit	Quantity	FC			FC	LC
					Currency#	Unit Rate	Amount		
1	2	3	4	5	6	7	8 = (7) x (5)	9=8	10
5	145 kV Voltage Transformer								
5.1	Gas insulated complete PT of each type and rating with enclosure.		No.	1					
III	132kV CVT								
1	132kV, 8800pF CVT (excluding support structure/ common JB)		No.	1					
IV	120kV LA								
1	120kV Surge Arrestor with insulating base, terminal connector , Surge counter & accessories (excluding support structure)		Set	1					
V	DG Set								
1	Self starter assembly		No.	1					
2	AVR (Auto Voltage Regulator)/ AVR card		Set	1					
VI	Battery Charger								
1	220V Battery Chargers								
1.1	Set of Control Cards		Set						
1.2	Set of relays		Set						
1.3	Rectifier transformer		No.						
1.4	Thyristor/ Diode		Set	1					
1.5	Fuses of Thyristor with indicators		Set	6					
2	48V Battery Chargers								
2.1	Set of Control Cards		Set						
2.2	Set of relays		Set						
2.3	Rectifier transformer		No.						
2.4	Thyristor/ Diode		Set	1					
2.5	Fuses of Thyristor with indicators		Set	6					
VII	Relay & Protection								
1	Line Protection Panel								
1.1	Numerical distance relay (1 no. of each type)		Set						

Schedule No.1: Plant and Equipment including Mandatory Spares to be supplied from abroad

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)	Custom, VAT and other taxes
			Unit	Quantity	FC			FC	LC
					Currency#	Unit Rate	Amount		
1	2	3	4	5	6	7	8 = (7) x (5)	9=8	10
2	Transformer Protection Panel								
2.1	Transformer differential protection		No.						
2.2	Restricted earth fault protection relay with non-linear resistor		No.						
2.3	Directional over current & E/F Protection Relay		no						
3	COMMON SPARES								
3.1	Power supply module for Bus Bar protection.		No.						
3.2	Bay unit module		Set						
3.3	Breaker protection Relay								
3.3.1	Breaker failure relay		No.						
3.3.2	Trip circuit supervision relay		Nos.						
3.3.3	Self reset trip relay (relay of each type)		Set	1					
3.3.4	Hand reset trip relay(relay of each type)		Set	1					
3.3.5	Timer relay(relay of each type)		Set	1					
3.3.6	DC supervision relay(relay of each type)		Set						
3.3.7	Flag relays(relay of each type)		Set						
3.3.8	Auxiliary relays(relay of each type)		Set						
VIII	Digital protection Coupler		LS	1					
IX	Sub-Station Automation System								
1	Bay control unit (IED) of each type		Set	1					
2	Ethernet switch of each type		Set	1					
X	LT Transformer		LS	1					
1	Bushings (Each type)		Set	1					
2	Diaphragm for pressure relief vent		No.	1					
3	Silica gel container		No.	1					
4	Set of Valves (Each Type)		Set	1					
5	Buchholz relay (if applicable)		No.	1					

Schedule No.1: Plant and Equipment including Mandatory Spares to be supplied from abroad

LC: Local Currency

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)	Custom, VAT and other taxes
			Unit	Quantity	FC			FC	LC
					Currency#	Unit Rate	Amount		
1	2	3	4	5	6	7	8 = (7) x (5)	9=8	10
XI	Illumination System		LS	1					
1	5% of each type of lighting fixture supplied								
XII	Erection Hardware		LS	1					
1	5% spares of the actual quantities for Insulator strings & hardware, clamps & connectors (including equipment connectors), spacers, corona bell and welding sleeves,								
XIII	Telecommunication Equipments								
1	Transmission Equipment								
1.1	SDH Equipment (STM- 4 MADM, upto 3 MSP protected directions)								
1.1.1	Common cards, Power supply cards, power cabling, other hardware & accessories (each)		Set						
1.2	Optical Interface/SFP for								
1.2.1	S1.1		No.						
1.2.2	S4.1		No.						
1.2.3	L4.2		No.						
1.3	Tributary Cards								
1.3.1	E1 Interface card (Minimum 16 interfaces per card)		No.						
1.3.2	Ethernet interfaces 10/100 Mbps with Layer-2 switching (Minimum 4 interfaces per card.)		No.						
1.4	Termination Equipment								
1.4.1	Drop & Insert Multiplexer		Set						
1.5	Common cards, Power supply cards, power cabling, other hardware & accessories (each)								
1.5.1	Subscriber Line Interface Cards								
1.5.1.1	2 wire (sub/sub) voice channel cards (min 8 channels per card)		No.						
1.5.1.2	2 wire (Sub/Exch) voice channel cards (min 8 channels per card)		No.						
1.5.1.3	4 wire (E&M) voice channel cards (min 8 channels per card)		No.						
1.5.1.4	Asynchronous Sub Channels data cards, minimum 4 channels per card		No.						
1.5.1.5	Synchronous data card (NX64kbps)		No.						
1.6	Pre Connectorized Optical Fiber Patch Cords (10 Mtrs) – Pack of Six Patch Cords		Set						

Schedule No.1: Plant and Equipment including Mandatory Spares to be supplied from abroad

LC: Local Currency

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)	Custom, VAT and other taxes
			Unit	Quantity	FC			FC	LC
					Currency#	Unit Rate	Amount		
1	2	3	4	5	6	7	8 = (7) x (5)	9=8	10
XIV	LT Indoor Switchgear		LS	1					
1	Each type of MCB, MCCB, ELCB								
XV	Fire Fighting		LS	1					
1	Recommended Spares		Set	1					
16	MV Indoor Swtichgear								
1	11 kV Switchgear								
1.1	11kV Vacuum Interrupter for Incomer and Outgoing		No.	3					
1.2	Tripping Coils		No.	3					
1.3	Closing Coils		Set	3					
1.4	Spring Charging Motor		Set	1					
1.5	Protection Relays								
1.5.1	3 phase Overcurrent Relay, for 11kV side one of each type		Nos.	1					
1.5.2	Ground Fault Relay, for 11kV side, oe of each type		Nos.	1					
1.6	Ammeter, Nos one of each rating		Nos.	1					
1.7	Voltmeter, Nos		Nos.	1					
1.8	kVA Meter, each		Nos.	1					
1.9	CTs of each type		set	1					
1.10	Operating Handle		No.	1					
1.11	Indicating lamps and fuses (100% of used), Lot		LS	1					
	SUB-TOTAL-C								
	Total for PART 2 132/22(11)kV Changunarayan Substation (III) (Part-A+ Part-B+ Part C)								
	Total for Schedule 1 (Total of column 9 to be carried forward to Schdule 5: Grand Summary)								

Schedule No.1: Plant and Equipment including Mandatory Spares to be supplied from abroad

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)	Custom, VAT and other taxes
			Unit	Quantity	FC			FC	LC
					Currency#	Unit Rate	Amount		
1	2	3	4	5	6	7	8 = (7) x (5)	9=8	10

Note : 1) Bidder is required to quote prices in this Schedule for all the individual items/sub-items.

2.) The Prices of equipments are inclusive of type test charges

3.) BOQ given above is indicative only based on the scope of work as given in Employer's Requirements. The quantities mentioned above may undergo change during detailed engineering to meet the functional requirement
Specify currency in accordance with BDS ITB Clause 32.1, Part-I of the Bidding Documents.

* Strike-out whichever is not applicable.

Name of Bidder:
Signature of Bidder:
(Printed Name)

Date:

NEPAL ELECTRICITY AUTHORITY

PROJECT MANAGEMENT DIRECTORATE

Lapsephedi & Changunarayan Substation Construction Project

Power Transmission and Distribution Efficiency Enhancement Project

PMD/PTDEEP/LCSCP-073/74/01:Design, Supply, Installation and Commissioning of Gas insulated 220kV Lapsiphedi Substation and 132kV Changunarayan Substation

Schedule No.2: Plant and Equipment including Mandatory Spares Parts to be supplied from within Nepal

LC: Local Currency (ALL Price in Local Currency)

Item No.	Item description	Unit	Quantity	Ex-Factory Price (Excluding VAT) in LC		Inland transportation to site in LC		Total Amount (Excluding Taxes)	VAT and other taxes
				Unit Rate	Amount	Unit Rate	Amount		
1	2	3	4	5	6 = (4) x (5)	7	8=(4)x(7)	9=6+8	10
PART 1	220/132/11kV GIS Lapsephedi Substation								
PART 1	Total for 220/132/11kV Lapsephedi Substation (I) (Part-A+ Part-B+ Part C)								
PART 2	132/11 kV Changunarayan S/S								
	Total for PART 2: 132/11kV Changunarayan Substation (II) (Part-A+ Part-B+ Part C)								
	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.

2.) The Prices of equipments are inclusive of type test charges

Specify currency in accordance with BDS ITB Clause 32.1, Part-I of the Bidding Documents.

* Strike-out whichever is not applicable.

^a Specify currency in accordance with ITB 19.1 of the BDS.

customs duties and sales and other taxes already paid on previously imported items.

Name of Bidder:

Date:

NEPAL ELECTRICITY AUTHORITY

PROJECT MANAGEMENT DIRECTORATE

Lapsephedi & Changunarayan Substation Construction Project

Power Transmission and Distribution Efficiency Enhancement Project

PMD/PTDEEP/LCSCP-073/74/01:Design, Supply, Installation and Commissioning of Gas insulated 220kV Lapsiphedhi Substation and 132kV Changunarayan Substation

Schedule No. 4 (a): Installation and Other Services

(a): Installation and Construction Charges

Sl. No.	Item Description	Installation Charges								
		Country of Origin	Type & Designation	Unit	Qty.	Portion in Foreign Currency			Portion in Nepalese Currency (in NPR)	
						Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
PART 1	220/132/11kV GIS Lapsephedi Substation									
	PART - A: OWNER ASSESSED QUANTITIES									
A1.1	POWER TRANSFORMER									
1	53.33MVA, 220/√3 / 132/√3 kV Single Phase Power Transformer (without transformer Oil)			Nos.	4					
2	Insulating oil for the above Power Transformer			Lot	4					
3.0	33kV Current transformer (NCT) for autotransformer			No	1					
A1.2	POWER TRANSFORMER									
1	5 MVA, 132 /11 kV Three Phase Power Transformer (without transformer Oil)			Nos.	1					
2	Insulating oil for the above Power Transformer			Lot	1					
C)	LT Transformer									
1	315KVA 11/0.400 Kv			Nos.	2					
D	245 KV EQUIPMENTS									
D.1	245KV GIS Equipment									
1.1	245kV, SF6 GIS Bus Bars Module [Module description as per Technical Project specification]			Sets	2					
1.2	245kV, SF6 GIS Bus Coupler bay Module [Module description as per Technical Project specification]			Sets	1					
1.3	245kV, SF6 GIS Line bay Module [Module description as per Technical Project specification]			Sets	2					
1.4	245kV, SF6 GIS spare Line feeder bay Module as per section project			Sets	1					
1.5	2145kV, SF6 GIS ICT bay Module [Module description as per Technical Project specification]			Sets	1					

Schedule No. 4 (a): Installation and Other Services

(a): Installation and Construction Charges

Sl. No.	Item Description	Installation Charges								
		Country of Origin	Type & Designation	Unit	Qty.	Portion in Foreign Currency			Portion in Nepalese Currency (in NPR)	
						Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
1.6	SF6 Gas Insulated Bus Duct (GIB) outside GIS Hall alongwith associated support structure and accessories									
1.6.1	OPTION-I									
	2000A, 40kA for 1 sec. Single Phase			Mtr.	360					
1.6.2	OPTION-II									
	2000A, 40kA, 1sec three phase			Mtr.	120					
	Note : Bidder is required to quote for either option-I or Option-II									
1.7	220kV, SF6 to Air Bushing alongwith associated support structure for Connecting GIS to AIS alongwith support structure									
1.7.1	2000A, 40kA for 1 sec. Single Phase			Nos.	13					
D.2	245KV Outdoor Equipment									
1.1	216 KV Surge Arrester (1-phase)			Nos.	13					
1.2	245kV Capacitive Voltage Transfromer			Nos.	9					
1.3	245kV Bus Post Insulator (1-Phase) (Except for wave trap)			Nos.	15					
E	145kV Equipment									
E.1	145KV GIS Equipment									
1.1	145kV, SF6 GIS Bus Bars Module [Module description as per Technical Project specification]			Sets	2					
1.2	145kV, SF6 GIS Bus Coupler bay Module [Module description as per Technical Project specification]			Set	1					
1.3	145kV, SF6 GIS Line bay Module [Module description as per Technical Projet specification]			Sets	2					
1.4	145kV, SF6 GIS Spare Line bay Module [Module description as per Technical Projet specification]			Sets	1					
1.5	145kV, SF6 GIS ICT feeder bay Module as per section project for 220/132 kV Transformer			Sets	1					
1.6	145kV, SF6 GIS ICT feeder bay Module as per section project for 132/11 kV Transformer			Sets	1					

Schedule No. 4 (a): Installation and Other Services

(a): Installation and Construction Charges

Sl. No.	Item Description	Installation Charges								
		Country of Origin	Type & Designation	Unit	Qty.	Portion in Foreign Currency			Portion in Nepalese Currency (in NPR)	
						Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
1.7	SF6 Gas Insulated Bus Duct (GIB) outside GIS hall including Bus Duct support structure and associated accessories									
1.7.1	OPTION-I 2000A, 40kA for 1 sec. Single Phase			Mtr	300					
1.7.2	OPTION-II 2000A, 40kA, 1sec three phase			Mtr	100					
	Note : Bidder is required to quote for either option-I or Option-II									
1.8	145kV, SF6/Air Bushing for Connecting GIS to AIS alongwith support structure									
1.8.1	1250A, 31.5kA, 1sec single phase			Set	16					
E.2	145kV EQUIPMENT (AIS)									
1.0	120 kV Surge Arrestors (1-Phase)			Nos.	16					
2.0	8800pF, 145 kV Capacitive Voltage Transformer (1-Phase)			Nos.	9					
3.0	145KV Bus Post Insulator			Nos.	9					
F	11 KV EQUIPMENT									
1.0	9 kV Surge Arrester (1 ph.)			Nos	6					
G	11kV, 25 kA (3 Phase) Indoor switch gear panel									
1.0	11 kV Indoor VCB Switchgear									
1.1	11kV 2000A Incomer			Nos	2					
1.2	11kV 1250A Outgoing			Nos	4					
1.3	11kV 2000A Buscoupler			Nos	1					
1.4	11kV 2000A Trunking			Nos	1					
H	Testing & Maintenance Equipment for GIS									
1.1	SF6 Gas processing Unit			Set	1					
1.2	Partial Discharge Monitoring System			Set	1					
1.3	EOT crane for 220kV GIS Hall			Set	1					
1.4	EOT crane for 132kV GIS Hall			Set	1					

Schedule No. 4 (a): Installation and Other Services

(a): Installation and Construction Charges

Sl. No.	Item Description	Installation Charges								
		Country of Origin	Type & Designation	Unit	Qty.	Portion in Foreign Currency			Portion in Nepalese Currency (in NPR)	
						Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
I	RELAY PANELS (WITH AUTOMATION)									
1	245kV									
1.1	Circuit Breaker Relay Panel									
1.1.1	CB Relay Panel With Auto Reclose			Nos.	3					
1.1.2	CB Relay Panel Without Auto Reclose			Nos.	2					
1.2	Line Protection Panel			Nos.	3					
1.3	Transformer Protection Panel (For both HV & MV side)			Nos.	1					
1.4	Bus Bar Protection Panel			set	1					
2	145kV									
2.1	Circuit Breaker Relay Panel									
2.1.1	CB Relay Panel With Auto Reclose			Nos.	3					
2.1.2	CB Relay Panel Without Auto Reclose			Nos.	3					
2.2	Line Protection Panel			Nos.	3					
2.3	Transformer Protection Panel (For both HV & MV side)			Nos.	1					
2.4	Bus Bar Protection Panel			set	1					
3	Other/Common equipments Pertaining to C & R System									
3.1	Time Synchronisation Equipment			No.	1					
3.2	Relay Test kit			No.	1					
J	SUBSTATION AUTOMATION									
1	Substation Automation System as per Technical Specification:									
1.1	220kV System			Nos.	5					
1.2	132 kV System			Nos.	6					
1.3	BCU for auxiliary system			set	1					
1.4	11 kV HT Indoor Switchgear			Nos.	7					

Schedule No. 4 (a): Installation and Other Services

(a): Installation and Construction Charges

Sl. No.	Item Description	Installation Charges								
		Country of Origin	Type & Designation	Unit	Qty.	Portion in Foreign Currency			Portion in Nepalese Currency (in NPR)	
						Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
K	Digital Protection Coupler & PBAX									
1	Digital Protection Coupler			Nos	12					
2	PBAX with following configuration as per TS			Set	1					
2.1	2 wire subscriber interface card with capacity 32 local subscribers (along with 32 nos. Instruments)									
2.2	4 wire E & M interface card with capacity 8 nos. trunks (For PLCC)									
2.3	E-1 interface with 2 trunks G-703									
2.4	2 wire interface with 1 trunk (For PSTN)									
3	4 wire telephone equipment			Set	1					
L	LT Switchgear (As per Technical specification)									
1	400V Main switchboard			Set	1					
2	400V ACDB			Set	1					
3	400V MLDB			Set	1					
4	400V Emergency LDB			Set	1					
5	220V DCDB			Sets	1					
6.0	48V DCDB			Set	1					
M	Batteries									
1	220V									
1.1	600 AH			Nos	2					
2	48V									
2.1	600AH			Nos	2					
N	Float Cum Boost Battery Charger									
1	220V Float Cum Boost Battery Charger									
1.1	80A/80A			Nos	2					
2	48V Float Cum Boost Battery Charger									
2.1	80A/80A			Nos	2					
O	Diesel Generator with control Panel									
1	250 KVA			Set	1					

Schedule No. 4 (a): Installation and Other Services

(a): Installation and Construction Charges

Sl. No.	Item Description	Installation Charges								
		Country of Origin	Type & Designation	Unit	Qty.	Portion in Foreign Currency			Portion in Nepalese Currency (in NPR)	
						Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
P	Fire Protection System									
1	Portable /Trolley/Wheel mounted extinguishers									
1.1	9 litre water type			Nos	2					
1.2	50 litre foam type			Nos	2					
1.3	4.5 kg CO ₂ type			Nos	6					
1.4	4.5 kg Dry Chemical Power (DCP) type			Nos	2					
2.0	Smoke detection system			Set	1					
3.0	Fire detection and Alarm System			Set	1					
Q	Cables along with clamps, glands, lugs and straight joints etc.									
1.0	11kV HT 3C, 300 Sq.mm Aluminum Cable alongwith accessories and termination equipments for termination of 11 kV Line			KM	2					
2.0	11kV HT 3C, 300 Sq.mm Aluminum Cable alongwith accessories and termination equipments for termination of 11 kV LT Transformer			KM	0.25					
3.0	11kV HT Cu Cable (3CX300 SQmm) for 11k kV side of 132/11 kV Transformer alongwith accessories and termination equipments			KM	0.25					
4	Power Cables - (1.1kV grade)									
4.1	3.5Cx300 sqmm (XLPE) cable for filter Machine along with 2 nos outdoor receptacles -250A			KM	0.25					
R	Air conditioning									
1	High wall type split AC unit of 2 TR capacities for control room, relay room and battery room			Nos.	25					
S	STEEL STRUCTURES (Tower,Gantry structures& Equipment support structures)									
1.0	Lattice/pipe Structure for towers,beams and equipments including peak plates/pack washers and guest paltes including foundation bolts(nuts,washers,MS plate welded at the bottom)									
1.1	Lattice structure & foundation bolts			MT	55					
1.2	Pipe Structure including Foundation Bolts .			Mt	20					
1.3	Fastners for towers,beams and equipment support strcutures			MT	3					

Schedule No. 4 (a): Installation and Other Services

(a): Installation and Construction Charges

Sl. No.	Item Description	Installation Charges								
		Country of Origin	Type & Designation	Unit	Qty.	Portion in Foreign Currency			Portion in Nepalese Currency (in NPR)	
						Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
T	Communication Equipment (detail as per TS)									
1	Transmission Equipment									
1.1	SDH Equipment (STM- 4 MADM, upto 3 MSP protected directions)									
1.1.1	Base Equipment (Common cards, Cross-connect/control cards, Optical base cards, Power supply cards, power cabling, other hardware & accessories including sub-racks, patch cords, DDF etc. fully equipped excluding (II) and (III) below)			No.	4					
1.2	Optical Interface/SFP# for									
1.2.1	S4.1			Nos.	12					
1.2.2	L4.2			Nos.	4					
1.3	Tributary Cards									
1.3.1	E1 Interface card (Minimum 16 interfaces per card)			Nos.	4					
1.3.2	Ethernet interfaces 10/100 Mbps with Layer-2 switching (Minimum 4 interfaces per card.)			No.	8					
1.4	Integaration at Optical level at Existing S/s & LDC with Existing equipment (Existing equipment at is DXC – 5000 of Alstom Make)			set	2					
2	Termination Equipment									
2.1	Drop/Insert Multiplexer									
	Base Equipment (Common cards, Power supply cards, power cabling, other hardware & accessories including sub-racks, etc. fully equipped excluding subscriber line interface cards)			Nos.	3					
2.2	Subscriber Line Interface Cards									
2.2.1	2 wire (sub/sub) voice channel cards (min 8 channels per card)			Nos.	2					
2.2.2	2 wire (sub/Exch) voice channel cards (min 8 channels per card)			Nos.	1					
2.2.3	4 wire (E&M) voice channel cards (min 8 channels per card)			Nos.	3					
2.3	Asynchronous Sub Channels data cards (minimum 4 channels per card)			No.	3					
2.4	Synchronous data card (NX64kbps)			Nos.	3					
3	Equipment Cabinets									
3.1	For Drop/Insert Multiplexer			No.	3					
3.2	For SDH Equipment			No.	2					
4	TMN – Craft Terminal for SDH & PDH Equipments									
4.1	Hardware			set	1					
4.2	Software			set	1					

Schedule No. 4 (a): Installation and Other Services

(a): Installation and Construction Charges

Sl. No.	Item Description	Installation Charges								
		Country of Origin	Type & Designation	Unit	Qty.	Portion in Foreign Currency			Portion in Nepalese Currency (in NPR)	
						Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
5	Main Distribution Frame (100 pairs)			no	3					
6.0	Test Equipment as per TS			set	1					
SUB TOTAL PART-A										
PART-B: VENDOR ASSESSED QUANTITIES										
A	Erection Hardware :-Insulator strings, Disc Insulators, Hardware, conductor, bus-bar materials, cable trays, clamps, spacers, connectors including conectors for Auto Transformer , Junction box, earthwire, earthing material risers, buried cable trenches/pipe of equipment & lighting, all accessories etc. for the following:									
1	220 kV DM-type layout for GIS termination arrangement									
1.1	Line Bay			Set	2					
1.2	Spare Line bay			set	1					
1.3	Transformer Bay			Sets	1					
2	132 kV DM-type layout for GIS termination arrangement									
2.1	Line Bay			Sets	2					
2.2	Spare Line bay			set	1					
2.3	Transformer Bay			Sets	2					
B	Bus post insulators, Spacers, equipment support structures, conductor(s), Al tube, clamp, connectors required for arrangement of Neutral formation for one transformer bank for making connection arrangement to connect spare unit in place of any other unit without physical shifting complete in all respect			Sets	1					
C	Air conditioning & ventilation System									
1	Ventilation & Airconditioning system (as per technical specification)									
1.1	220kV GIS Hall			LS	1					

Schedule No. 4 (a): Installation and Other Services

(a): Installation and Construction Charges

Sl. No.	Item Description	Installation Charges								
		Country of Origin	Type & Designation	Unit	Qty.	Portion in Foreign Currency			Portion in Nepalese Currency (in NPR)	
						Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
1.2	132 kV GIS Hall			LS	1					
D	Illumination System									
1.1	Substation Lighting									
1.1.1	Control Room cum administrative building illumination			LS	1					
1.1.2	220kV GIS Building			LS	1					
1.1.3	132kV GIS Building			LS	1					
1.2	Security Room			LS	1					
1.3	fire Fighting Room			LS	1					
1.4	Outdoor Switchyard Lighting			LS	1					
1.5	Street Lighting			LS	1					
1.6	Occupancy sensor			LS	1					
1.7	Township Area Lighting			LS	1					
E	Fire Protection System per technical Specification)									
1	Pumping arrangement for HVW system & hydrant system, complete with all piping, valves, fittings,etc. inside pump house			set	1					
2	Hydrant system, complete U/G piping and accessories etc. outside the Pump House.			set	1					
3	HVW spray system, Hydrant system and complete U/G & O/G piping and accessories etc. out side the pump house for Transformer :									
3.1	53.33 MVA, 220/132 kV Single Phase Auto Transformer			nos	4					
3.2	5 MVA,132/11 kV Three phase transformer			nos	1					
F	POWER & CONTROL CABLES									
1	1.1 kV LV Cables									
1.1	Power Cables(PVC)- (1.1kV grade)			LS	1					
1.2	Control Cable (PVC)- (1.1kV grade)			LS	1					
1.3	Cable glands, lugs & straight through joints for Power & Control cables			LS	1					

Schedule No. 4 (a): Installation and Other Services

(a): Installation and Construction Charges

Sl. No.	Item Description	Installation Charges								
		Country of Origin	Type & Designation	Unit	Qty.	Portion in Foreign Currency			Portion in Nepalese Currency (in NPR)	
						Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6

Schedule No. 4 (a): Installation and Other Services

(a): Installation and Construction Charges

Sl. No.	Item Description	Installation Charges								
		Country of Origin	Type & Designation	Unit	Qty.	Portion in Foreign Currency			Portion in Nepalese Currency (in NPR)	
						Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
G	Visual Monitoring System for watch & ward as per technical specification			LS	1					
H	Earthing and lightning protection including necessary connectors/connections, risers etc. complete in all respect(but excluding LM structures for Lightning protection)									
1.0	Earth Conductor (copper)			LS	1					
2.0	Earth Rod (copper clad steel)			LS	1					
3.0	Equipment for lightning protection			LS	1					
I	SUBSTATION AUTOMATION									
1	Integration of all 220/132kV Bays under present scope with the SCADA of SIEMENS (SINAUT Spectrum) at Load Dispatch Centre, Kathmandu including supply of Hardware, Software, accessories etc. as per TS Section Project.			LS	1					
SUB TOTAL PART-B										
PART-C: Civil Works										
1.0	Excavation in all types of soil and rock including backfilling disposal etc. for all leads and lifts			Cu.M	50,000					
2.0	Providing and laying of Plain Cement Concrete (PCC) (1:4:8)			Cu.M	1350					
3.0	Providing and laying of Plain Cement Concrete (PCC) (1:2:4)			Cu.M	490					
4.0	Providing and laying of Reinforced Cement Concrete Design Mix M25 including pre cast, shuttering, Grouting of pockets & underpinning but excluding steel reinforcement			Cu.M	4900					
5.0	Providing and laying Plain Cement Concrete 1:5:10 (1 cement : 5 sand : 10 Stone aggregate)			Cu.M	600					
6.0	Steel Reinforcement (Fe 500)			MT	375					
7.0	Stone filling (40 mm size) over grating of transformer/ reactor foundation			Cu.M	40					
8.0	Misc. Structural steel including rails, embedments, edge protection angles, gratings etc. but excluding the reinforcement steel and steel for lattice and pipe structures.			MT	72					
9.0	Stone spreading including antiweed treatment in switchyard excluding PCC			Sq. M.	5000					

Schedule No. 4 (a): Installation and Other Services

(a): Installation and Construction Charges

Sl. No.	Item Description	Installation Charges								
		Country of Origin	Type & Designation	Unit	Qty.	Portion in Foreign Currency			Portion in Nepalese Currency (in NPR)	
						Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
10.0	All civil works for following buildings as per technical specification and approved drawings but excluding excavation, PCC, RCC and reinforcement steel (Fe-500), which shall be measured and paid seperately under respective items of BPS :									
10.1	Fire fighting pump house building (excluding external finish)			Sq. M.	98					
10.2	Water Tank (excluding external finish)			LS	1					
10.3	Township (Quarters)									
10.3.1	B Type			Sq. M.	500					
10.3.2	C Type			Sq. M.	600					
10.3.3	D Type			Sq. M.	210					
10.4	Security Room			Sq. M.	20					
10.5	Parking Shed (for 10 Cars)			LS	2					
11.0	External finish as per specification for following buildings:									
11.1	Fire fighting pump house building (excluding external finish)			Sq. M.	98					
11.2	Water Tank (excluding external finish)			LS	1					
11.3	Township (Quarters)									
11.3.1	B Type			Sq. M.	500					
11.3.2	C Type			Sq. M.	600					
11.3.3	D Type			Sq. M.	210					
11.4	Security Room			Sq. M.	20					
11.5	Parking Shed (for 10 Cars)			LS	2					
12.0	BUILDINGS									
12.1	CONTROL ROOM BULIDING									
	All Civil works including finishing, internal cable trench, 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. (Including 11kV switchgear room)			Sq. M.	750					
12.2	220 KV GIS HALL									
	All Civil works including finishing, internal cable trench, 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.			Sq. M.	450					

Schedule No. 4 (a): Installation and Other Services

(a): Installation and Construction Charges

Sl. No.	Item Description	Installation Charges								
		Country of Origin	Type & Designation	Unit	Qty.	Portion in Foreign Currency			Portion in Nepalese Currency (in NPR)	
						Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
12.3	132 KV GIS HALL									
	All Civil works including finishing, internal cable trench, 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.			Sq. M.	400					
13.0	Concrete road as per drawing except reinforcement & concrete									
	(a) Road 3.75m wide			Sq.M.	3000					
14.0	Construction of rail cum road as per drawing including all items such as excavation, compaction, rolling, watering, WBM etc but excluding concrete, reinforcement and structural steel.									
	a) Section having four rails			Sq.M.	280					
15.0	Chain link fencing as per technical sepcification and approved drawing excluding concrete			RM	300					
16.0	Switchyard Gate excluding Concrete			Nos.	2					
17.0	Septic tank and soak pit (for 50 users) complete as per technical specification and approved drawing excluding concrete & reinforcement which shall be measured and paid seperately under respective items of BPS .			LS	3					
18.0	Supplying & laying hume pipe of grade (NP-3) excluding concrete and reinforcement									
18.1	250mm dia			RM	150					
18.2	300mm dia			RM	120					
18.2	450mm dia			RM	80					
18.2	600mm dia			RM	40					
18.2	900mm dia			RM	10					
19.0	Supplying and erecting dewatering pumps									
19.1	5 HP			Nos.	2					
19.2	0.5 HP			Nos.	2					
20.0	Drains Excluding Concrete									
20.1	Section A-A (300 mm wide X depth up to 600mm)			RM	200					
20.2	Section B-B (450 mm wideX depth from 600 mm to 900 mm)			RM	100					
20.3	Section C-C (600 mm wide X depth from 900 mm to 1200 mm)			RM	80					
20.4	Section D-D (750 mm wide X depth from 1200 mm to 1500mm)			RM	20					

Schedule No. 4 (a): Installation and Other Services

(a): Installation and Construction Charges

Sl. No.	Item Description	Installation Charges								
		Country of Origin	Type & Designation	Unit	Qty.	Portion in Foreign Currency			Portion in Nepalese Currency (in NPR)	
						Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
21.0	External water supply from borewell/main water supply point to Fire water Tank, control room building, township buildings									
21.1	80 mm Dia GI pipe			RM	100					
21.2	50 mm Dia GI pipe			RM	80					
21.3	40mm Dia GI pipe			RM	60					
21.4	25mm Dia GI pipe			RM	40					
22.0	External sewerage system including all item such as excavation, piping, pipe fittings, manholes, gali trap, gali chamber etc.									
22.1	250 mm Dia.			RM	50					
22.2	150 mm Dia.			RM	50					
23.0	All civil works for Boundary wall including excavation, concrete, reinforcement steel ,structural steel, plaster, painting, barbed wire and concertina coil etc all complete as per technical specification (2.5 m high brick masonry wall and 0.5 m high angle support on top).			RM	1200					
24.0	Main boundary wall Gate (Steel) including all works complete as per technical specification			LS	1					
25.0	Site levelling									
25.1	Earth work in excavation and filling in all types of soils including soft/disintegrated rock with all leads and lifts within sub station boundary			Cu. M	50000					
25.2	Earth work in filling with borrowed earth with all leads and lifts including royalty,taxes etc			Cu. M	5000					
26.0	All civil works for security room as per TS including septic tank and soak pit. Internal and external finish, sanitary and plumbing works, plinth protection etc. to complete the building are included in the item.			Sq. m.	9					
27.0	Construction of retaining wall with random rubble masonry 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 masonry 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			Cu. M	11000					

Schedule No. 4 (a): Installation and Other Services

(a): Installation and Construction Charges

Sl. No.	Item Description	Installation Charges								
		Country of Origin	Type & Designation	Unit	Qty.	Portion in Foreign Currency			Portion in Nepalese Currency (in NPR)	
						Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
28	Soil Investigation as per TS			LS	1					
29	Detail Survey, Contour Mapping			LS	1					
30	Approach Road (outside boundary) - Construction of black top (Bituminous/asphalt) road with wideblack top pavement and 1.3 m wide earthen shoulders on either side of road, Water bound macadam of suitable thickness as per design below pavement shall be laid as per technical specification.			Sq. m.	15000					
31	Supplying -Providing stone work packed in steel wire crats as per design and drawing to be developed by the contractor for all leads and lifts along the boundary wall and other places as required			Cu.M	24000					
32	Local sand filling around and under DG set foundation and other foundations as applicable			Cu.M	300					
33	Stone soling below foundations wherever specified in aproved drawings during detailed Engineering			Cu.M	200					
	SUB-TOTAL-C									
	Total for 220 /132/11kV Lapsephedi Substation (I) (Part-A+ Part-B+ Part C)									

Schedule No. 4 (a): Installation and Other Services

(a): Installation and Construction Charges

Sl. No.	Item Description	Installation Charges								
		Country of Origin	Type & Designation	Unit	Qty.	Portion in Foreign Currency			Portion in Nepalese Currency (in NPR)	
						Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
PART 2	132/11 kV Changunarayan S/S									
	PART -A: OWNER ASSESSED QUANTITIES									
A	POWER TRANSFORMER									
1.1	31.5/45 MVA, 132/11 kV Three Phase Power Transformer (without transformer Oil)			Nos.	1					
1.2	Insulating oil for the above Power Transformer			Lot	1					
B	LT Transformer									
1.1	315 KVA 11/0.400 kV			Nos.	2					
E	145kV Equipment									
E.1	145KV GIS Equipment									
1.1	145kV, SF6 GIS Bus Bars Module [Module description as per Technical Project specification]			Sets	2					
1.2	145kV, SF6 GIS Bus Coupler bay Module [Module description as per Technical Project specification]			Set	1					
1.3	145kV, SF6 GIS Line bay Module [Module description as per Technical Project specification]			Sets	6					
1.3	145kV, SF6 GIS Spare Line bay Module [Module description as per Technical Project specification]			Sets	1					
1.4	145kV, SF6 GIS ICT feeder bay Module for Transformer [Module description as per Technical Project specification]			Sets	2					
1.5	SF6 Gas Insulated Bus Duct (GIB) outside GIS hall including Bus Duct support structure and associated accessories									
1.5.1	<u>OPTION-I</u>			Mtr	600					
	<u>2000A, 40kA for 1 sec. Single Phase</u>									
1.5.2	<u>OPTION-II</u>									
	<u>2000A, 40kA, 1sec three phase</u>			Mtr	200					
1.6	145kV, SF6 to Air Bushing alongwith associated support structure									
a)	1250A, 31.5kA, 1sec single phase			Set	27					

Schedule No. 4 (a): Installation and Other Services

(a): Installation and Construction Charges

Sl. No.	Item Description	Installation Charges								
		Country of Origin	Type & Designation	Unit	Qty.	Portion in Foreign Currency			Portion in Nepalese Currency (in NPR)	
						Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
E.2	145kV EQUIPMENT(AIS)									
1.0	120 kV Surge Arrestors (1-Phase)			Nos.	27					
2.0	8800pF, 145 kV Capacitive Voltage Transformer (1-Phase)			Nos.	21					
3.0	145KV Bus Post Insulator			Nos.	21					
F	11 KV EQUIPMENT									
1.0	11 kV Isolator (3-phase)-HDB									
1.1	400A, 25kA for 3 sec, Isolator without E/s (Beam Mounted)			Set	8					
2.0	9 kV Surge Arrester (1 ph.)			Nos	12					
G	(11) kV Indoor VCB Switchgear									
1.0	(11)kV 2000A Incomer			Nos	2					
2.0	(11)kV 1250A Outgoing			Nos	10					
3.0	(11)kV 2000A Buscoupler			nos	1					
4.0	(11)kV 2000A Trunking			no	1					
H	Testing & Maintenance Equipment for GIS									
1.1	SF6 Gas processing Unit			Set	1					
1.2	Partial Discharge Monitoring System for 145kV GIS System as per Technical Specification, GIS			Set	1					
1.3	EOT crane for 145kV GIS Hall			Nos.	1					
I	RELAY PANELS (WITH AUTOMATION)									
1	145kV									
1.1	Circuit Breaker Relay Panel									
1.1.1	CB Relay Panel With Auto Reclose			Nos.	7					
1.1.2	CB Relay Panel Without Auto Reclose			Nos.	3					
1.2	Line Protection Panel			Nos.	7					
1.3	Transformer Protection Panel (For both HV & MV side)			Nos.	2					
1.4	Bus Bar Protection Panel			set	1					
1.5	Other/Common equipments Pertaining to C & R System									
1.5.1	Time Synchronisation Equipment			No.	1					
1.5.2	Relay Test kit			No.	1					

Schedule No. 4 (a): Installation and Other Services

(a): Installation and Construction Charges

Sl. No.	Item Description	Installation Charges								
		Country of Origin	Type & Designation	Unit	Qty.	Portion in Foreign Currency			Portion in Nepalese Currency (in NPR)	
						Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
J	SUBSTATION AUTOMATION									
1	Substation Automation System as per Technical Specification:									
1.1	132 kV System			Nos.	10					
1.2	BCU for auxiliary system			set	1					
1.3	11 kV HT Indoor Switchgear			Nos	13					
K	Digital Protection Coupler & PBAX									
1.1	Digital Protection Coupler			Nos	16					
1.2	PBAX with following configuration as per TS			Set	1					
1.2.1	2 wire subscriber interface card with capacity 32 local subscribers (along with 32 nos. Instruments)									
1.2.2	4 wire E & M interface card with capacity 8 nos. trunks (For PLCC)									
1.2.3	E-1 interface with 2 trunks G-703									
1.2.4	2 wire interface with 1 trunk (For PSTN)									
L	LT Switchgear (As per Technical specification)									
1	400V Main switchboard			Set	1					
2	400V ACDB			Set	1					
3	400V MLDB			Set	1					
4	400V Emergency LDB			Set	1					
5	220V DCDB			Sets	1					
6.0	48V DCDB			Set	1					
M	Batteries									
1	110V									
1.1	600			Nos	2					
2	48V									
2.1	600			Nos	2					

Schedule No. 4 (a): Installation and Other Services

(a): Installation and Construction Charges

Sl. No.	Item Description	Installation Charges								
		Country of Origin	Type & Designation	Unit	Qty.	Portion in Foreign Currency			Portion in Nepalese Currency (in NPR)	
						Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
N	Float Cum Boost Battery Charger									
1	100V Float Cum Boost Battery Charger									
1.1	90A/90A			Nos	2					
2	48V Float Cum Boost Battery Charger									
2.1	90A/90A			Nos	2					
O	Diesel Generator with control Panel									
1	100 kVA			Set	1					
P	Fire Protection System									
1	Portable /Trolley/Wheel mounted extinguishers									
1.1	9 litre water type			Nos	2					
1.2	50 litre foam type			Nos	2					
1.3	4.5 kg CO ₂ type			Nos	6					
1.4	4.5 kg Dry Chemical Power (DCP) type			Nos	2					
2.0	Smoke detection system			Set	1					
3.0	Fire detection and Alarm System			Set	1					
Q	Cables along with clamps, glands, lugs and straight joints etc.									
1.0	11kV HT Cable 3C, 300Sq.mm Aluminum alongwith accessories and termination equipments for termination of 11 kV line			KM	1.5					
2.0	11kV HT Cable 3C, 300 Sq.mm. Aluminum alongwith accessories and termination equipments for termination of 11 kV LT Transformer			KM	0.25					
3.0	11kV HT Cable (1CX800 SQmm) Copper for 11k kV side of 132/11 kV Transformer alongwith accessories and termination equipments			KM	1					
4	Power Cables - (1.1kV grade)									
4.1	3.5Cx300 sqmm (XLPE) cable for filter Machine along with 2 nos outdoor receptacles -250A			KM	0.25					
R	Air conditioning									
1	High wall type split AC unit of 2 TR capacities for control room, relay room and battery room			Nos.	20					

Schedule No. 4 (a): Installation and Other Services

(a): Installation and Construction Charges

Sl. No.	Item Description	Installation Charges								
		Country of Origin	Type & Designation	Unit	Qty.	Portion in Foreign Currency			Portion in Nepalese Currency (in NPR)	
						Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
S	STEEL STRUCTURES (Tower,Gantry structures& Equipment support structures)									
1.0	Lattice/pipe Structure for towers,beams and equipments including peak plates/pack washers and guest paltes including foundation bolts(nuts,washers,MS plate welded at the bottom)									
1.1	Lattice stucture & foundation bolts			MT	80					
1.2	Fastners for towers,beams and equipment support strcutures			MT	5					
SUB TOTAL PART-A										
PART-B: VENDOR ASSESSED QUANTITIES										
A	Erection Hardware :-Insulator strings, Disc Insulators, Hardware, conductor, bus-bar materials, cable trays, clamps, spacers, connectors including conectors for Auto Transformer , Junction box, earthwire, earthing material risers, buried cable trenches/pipe of equipment & lighting, all accessories etc. for the following:									
1	132 kV DM-type layout for GIS termination arrangement									
1.1	Line Bay			Sets	6					
1.2	Spare Line Bay			Sets	1					
1.3	Transformer Bay			Sets	2					
B	Ventilation & heating System									
1	Ventilation & heating system (as per technical specification)									
1.1	132 kV GIS Hall			LS	1					
C	Illumination System									
1	Substation Lighting									
1.1	Control Room cum administrative building illumination			LS	1					
1.2	132kV GIS Building			LS	1					
2	Fire Fighting Room			LS	1					

Schedule No. 4 (a): Installation and Other Services

(a): Installation and Construction Charges

Sl. No.	Item Description	Installation Charges								
		Country of Origin	Type & Designation	Unit	Qty.	Portion in Foreign Currency			Portion in Nepalese Currency (in NPR)	
						Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
3	Security Room			LS	1					
4	Outdoor Switchyard Lighting			LS	1					
5	Street Lighting			LS	1					
6	Occupancy sensor			LS	1					
D	Fire Protection System per technical Specification)									
1	Pumping arrangement for HVW system & hydrant system, complete with all piping, valves, fittings, etc. inside pump house			set	1					
2	Hydrant system, complete U/G piping and accessories etc. outside the Pump House.			set	1					
3	HVW spray system, Hydrant system and complete U/G & O/G piping and accessories etc. out side the pump house for Transformer :									
3.1	45 MVA, 132/11 kV Three Phase Transformer			nos	1					
E	POWER & CONTROL CABLES									
1	1.1 kV LV Cables									
1.1	Power Cables(PVC)- (1.1kV grade)			LS	1					
1.2	Control Cable (PVC)- (1.1kV grade)			LS	1					
1.3	Cable glands, lugs & straight through joints for Power & Control cables			LS	1					
F	Visual Monitoring System for watch & ward as per technical specification			LS	1					
G	Earthing and lightning protection including necessary connectors/connections, risers etc. complete in all respect									
1.0	Earth Conductor (copper)			LS	1					
2.0	Earth Rod (copper clad steel)			LS	1					
3.0	Equipment for lightning protection			LS	1					

Schedule No. 4 (a): Installation and Other Services

(a): Installation and Construction Charges

Sl. No.	Item Description	Installation Charges								
		Country of Origin	Type & Designation	Unit	Qty.	Portion in Foreign Currency			Portion in Nepalese Currency (in NPR)	
						Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
H	SUBSTATION AUTOMATION									
1	Integration of all 132/11kV Bays under present scope with the SCADA of SIEMENS (SINAUT Spectrum) at Load Dispatch Centre, Kathmandu including supply of Hardware, Software, accessories etc. as per TS Section Project.			LS	1					
	SUB TOTAL PART-B									
	PART-C: Civil Works									
1.0	Excavation in all types of soil and rock including backfilling disposal etc. for all leads and lifts			Cu.M	10,000					
2.0	Providing and laying of Plain Cement Concrete (PCC) (1:4:8)			Cu.M	670					
3.0	Providing and laying of Plain Cement Concrete (PCC) (1:2:4)			Cu.M	260					
4.0	Providing and laying of Reinforced Cement Concrete Design Mix M25 including pre cast, shuttering, Grouting of pockets & underpinning but excluding steel reinforcement			Cu.M	2500					
5.0	Providing and laying Plain Cement Concrete 1:5:10 (1 cement : 5 sand : 10 Stone aggregate)			Cu.M	375					
6.0	Steel Reinforcement (Fe 500)			MT	270					
7.0	Stone filling (40 mm size) over grating of transformer/ reactor foundation			Cu.M	30					
8.0	Misc. Structural steel including rails, embedments, edge protection angles, gratings etc. but excluding the reinforcement steel and steel for lattice and pipe structures.			MT	28					
9.0	Stone spreading including antiweed treatment in switchyard excluding PCC			Sq. M.	8000					
10.0	All civil works for following buildings as per technical specification and approved drawings but excluding excavation, PCC, RCC and reinforcement steel (Fe-500), which shall be measured and paid separately under respective items of BPS :									
10.1	Fire fighting pump house building (excluding external finish)			Sq. M.	98					
10.2	Water Tank (excluding external finish)			LS	1					
10.3	Security room			Sq. M.	20					
10.4	Parking Shed (for 10 Cars)			LS	1					

Schedule No. 4 (a): Installation and Other Services

(a): Installation and Construction Charges

Sl. No.	Item Description	Installation Charges								
		Country of Origin	Type & Designation	Unit	Qty.	Portion in Foreign Currency			Portion in Nepalese Currency (in NPR)	
						Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
11.0	External finish as per specification for following buildings:									
11.1	Fire fighting pump house building (excluding external finish)			Sq. M.	98					
11.2	Water Tank (excluding external finish)			LS	1					
11.3	Security room			Sq. M.	20					
11.4	Parking Shed (for 10 Cars)			LS	1					
12.0	BUILDINGS									
12.1	CONTROL ROOM BULIDING									
	All Civil works including finishing, internal cable trench, 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.			Sq.m	750					
12.2	132 KV GIS HALL									
	All Civil works including finishing, internal cable trench, 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.			Sq.m	500					
13.0	Concrete road as per drawing except reinforcement & concrete									
	(a) Road 3.75m wide			Sq.m	1500					
14.0	Construction of rail cum road as per drawing including all items such as excavation, compaction, rolling, watering, WBM etc but excluding concrete, reinforcement and structural steel.									
	a) Section having four rails			Sq.m	125					
15.0	Chain link fencing as per technical sepcification and approved drawing excluding concrete			RM	200					
16.0	Switchyard Gate excluding Concrete			Nos.	2					
17.0	Septic tank and soak pit (for 50 users) complete as per technical specification and approved drawing excluding concrete & reinforcement which shall be measured and paid seperately under respective items of BPS .			LS	3					

Schedule No. 4 (a): Installation and Other Services

(a): Installation and Construction Charges

Sl. No.	Item Description	Installation Charges								
		Country of Origin	Type & Designation	Unit	Qty.	Portion in Foreign Currency			Portion in Nepalese Currency (in NPR)	
						Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
18.0	Supplying & laying hume pipe of grade (NP-3) excluding concrete and reinforcement									
18.1	250mm dia			RM	150					
18.2	300mm dia			RM	120					
18.3	450mm dia			RM	80					
18.4	600mm dia			RM	40					
18.5	900mm dia			RM	10					
19.0	Supplying and erecting dewatering pumps									
19.1	5 HP			Nos.	2					
19.2	0.5 HP			Nos.	2					
20.0	Drains Excluding Concrete									
20.1	Section A-A (300 mm wide X depth up to 600mm)			RM	200					
20.2	Section B-B (450 mm wideX depth from 600 mm to 900 mm)			RM	100					
20.3	Section C-C (600 mm wide X depth from 900 mm to 1200 mm)			RM	80					
20.4	Section D-D (750 mm wide X depth from 1200 mm to 1500mm)			RM	20					
21	Dismantling of existing fence			RM						
22.0	External water supply from borewell/main water supply point to Fire water Tank, control room building, township buildings									
22.1	(i) 80 mm Dia GI pipe			RM	100					
22.2	(ii) 50 mm Dia GI pipe			RM	80					
22.3	(iii) 40mm Dia GI pipe			RM	60					
22.4	(iii) 25mm Dia GI pipe			RM	40					
23.0	External sewerage system including all item such as excavation, piping, pipe fittings, manholes, gali trap, gali chamber etc.									
23.1	(i) 250 mm Dia.			RM	50					
23.2	(i) 150 mm Dia.			RM	50					
24.0	All civil works for Boundary wall including excavation, concrete, reinforcement steel ,structural steel, plaster, painting, barbed wire and concertina coil etc all complete as per technical specification (2.5 m high brick masonry wall and 0.5 m high angle support on top).			RM	500					
25.0	Main boundary wall Gate (Steel) including all works complete as per technical specification			LS	1					

Schedule No. 4 (a): Installation and Other Services

(a): Installation and Construction Charges

Sl. No.	Item Description	Installation Charges								
		Country of Origin	Type & Designation	Unit	Qty.	Portion in Foreign Currency			Portion in Nepalese Currency (in NPR)	
						Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
26.0	Site levelling									
26.1	Earth work in excavation and filling in all types of soils including soft/disintegrated rock with all leads and lifts within sub station boundary			Cu. M	10000					
26.2	Earth work in filling with borrowed earth with all leads and lifts including royalty,taxes etc			Cu. M	2000					
27.0	All civil works for security room as per TS including septic tank and soak pit. Internal and external finish, sanitary and plumbing works, plinth protection etc. to complete the building are included in the item.			Sq. m.	9					
28.0	Construction of retaining wall with random rubble masonry 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 masonry 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			Cu. M	2500					
29	Soil Investigation as per TS			LS	1					
30	Detail Survey, Contour mapping			LS	1					
31	Approach Road-Strengthening of existing approach road as per TS (2.5 cm thick pre-mix carpet, 100 mm thick WBM, filling the pot holes with WBM) including cross drainage works but excluding concrete, RCC hume pipes and reinforcement steel which shall be measured and paid under respective items of BPS			Sq. m.	4000					
32	Supplying -Providing stone work packed in steel wire crats as per design and drawing to be developed by the contractor for all leads and lifts along the boundary wall and other places as required			Cu.M	4000					
33	Local sand filling around and under DG set foundation and other foundations as applicable			Cu.M	300					
34	Stone soling below foundations wherever specified in approved drawings during detailed Engineering			Cu.M	200					
	SUB-TOTAL-C									
	Total for /132/11kV CHANGUNARAYAN Substation (II) (Part-A+ Part-B+ Part C)									
	Total for Schedule 4(Total of column 9 and 11 to be carried forward to Schedule 5: Grand Summary)									

Schedule No. 4 (a): Installation and Other Services

(a): Installation and Construction Charges

Sl. No.	Item Description	Installation Charges								
		Country of Origin	Type & Designation	Unit	Qty.	Portion in Foreign Currency			Portion in Nepalese Currency (in NPR)	
						Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6

Specify currency in accordance with ITB Clause 12.1 and corresponding BDS

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

Date:

NEPAL ELECTRICITY AUTHORITY
PROJECT MANAGEMENT DIRECTORATE
Lapsephedi & Changunarayan Substation Construction Project

Power Transmission and Distribution Efficiency Enhancement Project

PMD/PTDEEP/LCSCP-073/74/01:Design, Supply, Installation and Commissioning of Gas insulated 220kV Lapsiphedi Substation and 132kV Changunarayan Substation

Schedule No. 4 : Installation and Other Services (Common for all)

(b):Training Charges for training to be imparted abroad

Sl. No.	Description	Item for which training is to be imparted.	Country where training is to be imparted	Nos. of Trainee	Training duration in days	Total Training Charges	
						Currency	Total Training Charges
1	2		3	4	5	6	7 = 4x5 x 6
A	Training to Owners personnel on Design , testing and Maintenance aspect as per Section Project, Technical Specification at manufacturer's works	i) Control & Protection and Substation Automation System		3	5 days		
		ii) GIS		3	5 days		
		iii) Telecommunication Equipment (SDH ,MUX & NMS (Craft Terminal))		3	5 days		
		iv)Transformer		3	5 days		
Total for Training Charges							
Total for Schedule 4 (Total of column 7 to be carried forward to Schedule 5: Grand Summary)							

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.

NEPAL ELECTRICITY AUTHORITY
PROJECT MANAGEMENT DIRECTORATE
Lapsephedi & Changunarayan Substation Construction Project

Power Transmission and Distribution Efficiency Enhancement Project

PMD/PTDEEP/LCSCP-073/74/01:Design, Supply, Installation and Commissioning of Gas insulated 220kV Lapsiphedhi Substation and 132kV Changunarayan Substation

Schedule No. 4 : Installation and Other Services *(Common for all)*

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

Sl. No.	Description of the Test	Item for which training is to be imparted.	Training duration in days	Currency	Training Charges for Contractors Trainers	
					Unit rate	Total Training Charges
1	2	3	4	5	6	7 = 4x 6
a)	On Job training on operation, maintenance and testing & commissioning aspect at one Location in Nepal as per section Project, Technical Specification	i) Control & Protection	5			
		ii) Substation Automation System including integration aspect of existing SCADA (of Siemens suppliedSINAUT Spectrum Software) at Load Dispatch Center	5			
		iii. GIS	5			
		iv) Telecommunication Equipment (SDH ,MUX & NMS (Craft Terminal))	5			
		v. TRANSFORMERS	5			
Total for Training Charges						
Total for Schedule 4 (Total of column 7 to be carried forward to Schedule 5: Grand						

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.

NEPAL ELECTRICITY AUTHORITY
PROJECT MANAGEMENT DIRECTORATE
Lapsephedi & Changunarayan Substation Construction Project

Power Transmission and Distribution Efficiency Enhancement Project

PMD/PTDEEP/LCSCP-073/74/01:Design, Supply, Installation and Commissioning of Gas insulated 220kV Lapsipedi Substation and 132kV Changunarayan Substation

Schedule No. 4 : Installation and Other Services (Common for all)

(d): Maintenance Charges

SI No	Description	Unit	Qty.	Total Maintenance Charges	
				Currency	Total Maintenance Charges
	1	2	3	4	5
1	Maintenance Charges for Communication Equipments including SDH & MUX. for One (1) year during Warranty period	Year	1		
2	Maintenance Charges for Communication Equipments including SDH & MUX. for Six (6) years after Warranty period	Year	6		
	Total Maintenance Charges for Communication Equipment Package (Total Schedule 4c)				
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)

Date:

NEPAL ELECTRICITY AUTHORITY
PROJECT MANAGEMENT DIRECTORATE
Lapsephedi & Changunarayan Substation Construction Project

Power Transmission and Distribution Efficiency Enhancement Project

PMD/PTDEEP/LCSCP-073/74/01:Design, Supply, Installation and Commissioning of Gas insulated 220kV Lapsipedi Substation and 132kV Changunarayan Substation

Schedule No. 5: Grand Summary

Sl. No.	Description	Part 1: Lapsephedi Substation		Part 2: Changunarayan Substation		Total	
		Total Price Foreign ()*	Total Price Local ()*	Total Price Foreign ()*	Total Price Local ()*	Total Price Foreign ()*	Total Price Local ()*
1	TOTAL SCHEDULE NO. 1	1	2	3	4	5	6
	Plant and Equipment including Mandatory Spares to be supplied from abroad, including Type Test Charges for Type Tests to be conducted abroad.						
2	TOTAL SCHEDULE NO. 2						
	Plant and Equipment including Mandatory Spares Parts to be supplied from within Nepal including Type Test Charges						
3	TOTAL SCHEDULE NO. 3						
	Design Services						
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						
	GRAND TOTAL [1+2+3+4(a)+4(b)+4 (c) +4 (d) + 4 (e)]						

NEPAL ELECTRICITY AUTHORITY
PROJECT MANAGEMENT DIRECTORATE
Lapsephedi & Changunarayan Substation Construction Project

Power Transmission and Distribution Efficiency Enhancement Project

PMD/PTDEEP/LCSCP-073/74/01:Design, Supply, Installation and Commissioning of Gas insulated 220kV Lapsipedi Substation and 132kV Changunarayan 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 Manufacturer	Part No.	Number of Units in each set	Total No. of Sets to be provided	Unit Price	Total Price	Remarks

Date:

Signature: _____
Printed Name: _____
Designation: _____
Common Seal: _____