

NEPAL ELECTRICITY AUTHORITY

(An Undertaking of Government of Nepal)
Project Management Directorate



MARSYANGDI CORRIDOR 220 KV TRANSMISSION LINE PROJECT

BIDDING DOCUMENT FOR

**Procurement of Plant
Design, Supply, Installation and Commissioning
Of Manang-Khudi-Udipur 220 kV Transmission Line and Associated Substations at
Khudi & Manang**

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

Issued on:	5th October 2018
Invitation for Bids No.:	ICB/PMD/MCTLP/018/19-01
ICB No.:	ICB/PMD/MCTLP/018/19-01
Employer:	Nepal Electricity Authority
Country:	Nepal

VOLUME –III OF III

October 2018

**Marsyangdi Corridor 220 kV Transmission Line Project
Project Management Directorate
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NEPAL ELECTRICITY AUTHORITY
PROJECT MANAGEMENT DIRECTORATE
MARSYANGDI CORRIDOR 220 KV TRANSMISSION LINE PROJECT
220KV D/C Manang-Khudi-Udipur Transmission Line & Associated Substations

Schedule Summary

Sl. No.	Description	Part A: Transmission Line		Part B: Substation	
		Total Price Foreign ()*	Total Price Local ()*	Total Price Foreign ()*	Total Price Local ()*
1	TOTAL SCHEDULE NO. 1				
	Plant and Equipment including Mandatory Spares to be supplied from abroad.				
2	TOTAL SCHEDULE NO. 2				
	Plant and Equipment including Mandatory Spares Parts to be supplied from within Nepal				
3	TOTAL SCHEDULE NO. 3				
	Design Services				
4	TOTAL SCHEDULE NO. 4				
	(a) Installation and construction charges				
	(b) Training charges for training to be imparted abroad				
	(c) Training charges for training to be imparted in Nepal				
	(d) Maintenance Charge				
	(e) Type Tests charges for type Tests to be conducted abroad				
5	TOTAL [1+2+3+4]				
	GRAND TOTAL (PART A [5]+ PART B [5])	Foreign	-	Local	-

Name of Bidder:

Date:

Signature of Bidder:

(Printed Name)

(Designation)

(Common Seal)

Volume III

Bid Price Schedule (Part A-Transmission Line)

NEPAL ELECTRICITY AUTHORITY
PROJECT MANAGEMENT DIRECTORATE
MARSYANGDI CORRIDOR 220 KV TRANSMISSION LINE PROJECT
220KV D/C Manang-Khudi-Udipur Transmission Line
Part A: Transmission Line

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

FC: Foreign Currency

LC: Local Currency

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, Clearing, forwarding and transportation to site (Excluding and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)
			Unit	Quantity	FC			FC
					Currency #	Unit Rate	Amount	Amount
1	2	3	4	5	6	7	8=(5)x(7)	9=8
I	Khudi- Udipur Section							
1	Tower Parts							
1.1	Design Review/Design, Fabrication & supply of different types of towers & tower extension parts complete with stubs, step bolts, hangers, D-shackles, bolts & nuts etc but excluding tower accessories such as danger plates, number plates, phase plates, anti-climbing devices							
a	High tensile Steel		MT	601			-	
b	Mild Steel		MT	492			-	
							-	
2	Supply of Earthing of towers						-	
i.	Pipe Type		Nos.	32			-	
ii.	Counterpoise Type		Nos.	16			-	
							-	
3	Supply of following tower accessories						-	
i.	Danger Plate		Nos.	48			-	
ii.	Number Plate		Nos.	48			-	
iii.	Phase Plate (Set of three)		Sets	96			-	
iv.	Circuit Plate(Set of two)		Sets	96			-	
v.	Anti climbing device (Set of four)		Nos.	48			-	
vi.	Bird Guard (Set of three)		Nos.	25			-	
							-	

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220KV D/C Manang-Khudi-Udipur Transmission Line
Part A: Transmission Line

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

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LC: Local Currency

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, Clearing, forwarding and transportation to site (Excluding and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)
			Unit	Quantity	FC			FC
					Currency #	Unit Rate	Amount	Amount
1	2	3	4	5	6	7	8=(5)x(7)	9=8
4	Supply of following Line Materials						-	
4.1	Conductor						-	
i)	HTLS Conductor as per TS		KM	204			-	
							-	
4.2	GS Earthwire						-	
i)	7/3.35mm Earthwire		KM	17			-	
							-	
4.3	Composite Insulators for 220kV line with Twin HTLS conductor						-	
(i)	120kN Composite Long Rod Insulator		Nos	16			-	
(ii)	160kN Composite Long Rod Insulator		Nos	1267			-	
							-	
4.4	Hardware Fittings suitable for Twin ACCC Drake conductor						-	
i)	Single 'I' Suspension PILOT String with necessary Clamp		Sets	16			-	
ii)	Double Tension Insulator String with necessary Clamp		Sets	634			-	
							-	
4.5	Conductor and Earthwire Accessories						-	
i)	Mid span compression joint for twin bundle HTLS conductor		Nos	102			-	
ii)	Repair Sleeve for twin bundle HTLS conductor		Nos	34			-	
iii)	Rigid Spacer for twin bundle HTLS conductor		Nos	907			-	
**iv)	Vibration Damper for HTLS Conductor		Nos	2419			-	
**v)	Bundle Spacer for twin bundle HTLS conductor		Nos	2073			-	

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Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, Clearing, forwarding and transportation to site (Excluding and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)
			Unit	Quantity	FC			FC
					Currency #	Unit Rate	Amount	Amount
1	2	3	4	5	6	7	8=(5)x(7)	9=8
**vi)	Spacer Damper for twin bundle HTLS conductor {as an alternative to item nos. (iv) & (v)}		Nos	2073			-	
vii)	Mid span compression joint for 7/3.35mm GS earthwire		Nos	9			-	
viii)	Flexible Copper Bond for 7/3.35mm GS Earthwire		Nos	96			-	
ix)	Vibration Damper for for 7/3.35mm GS Earthwire		Nos	202			-	
x)	Earthwire Tension Clamp		Nos	101			-	
							-	
4.9	Suplly of Fibre Cable & Accessories						-	
4.9.1	OPGW cable & Accessories						-	
i)	24 Fibre (DWDM) OPGW fibre optic cable		km	20			-	
ii)	Installation Hardware set for above 24 Fibre OPGW Fibre Optic cabling including all cable fittings & accessories as per below :		Sets*	20			-	
iii)	Joint Box		No.	5			-	
							-	
4.9.2	FODP						-	
i)	FODP 48F : Indoor Type, rack mounted with FCPC coupling and pig tails (5 mtrs each).		No.	2			-	
							-	
4.9.3	Fibre Optic approach cable						-	
i)	24 Fibre (DWDM)		Km.	1			-	
ii)	Installation hardware set for above 24 Fibre, Fibre Optic Approach Cable		Set *	1			-	
							-	

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Part A: Transmission Line

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

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Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, Clearing, forwarding and transportation to site (Excluding and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)
			Unit	Quantity	FC			FC
					Currency #	Unit Rate	Amount	Amount
1	2	3	4	5	6	7	8=(5)x(7)	9=8
4.10	Mandatory Spares of OPGW Cabling						-	
4.10.1	OPGW cable & Accessories						-	
i)	24 Fibre (DWDM) OPGW fibre optic cable		Km.	1			-	
ii)	Installation Hardware set for above 24 Fibre OPGW Fibre Optic cabling including all cable fittings & accessories as per below :		Sets*	1			-	
iii)	Joint Box (24 fibre)		No.	2			-	
							-	
4.10.2	Fibre Optic approach cable						-	
i)	24 Fibre (DWDM)		Km.	1			-	
ii)	Installation hardware set for above 24 Fibre, Approach Fibre Optic Cable		Set *	1			-	
							-	
5	Supply of following items for Aviation Requirements						-	
i)	Painting of normal tower above 45 mtr. from ground level		MT	55			-	
ii)	Span markers		Nos.	10			-	
iii)	Obstruction lights (to be provided as per IS 5613)						-	
a)	1 Medium + 2 Low Intensity		Sets	6			-	
b)	1 Medium + 4 Low Intensity		Sets	4			-	

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			Unit	Quantity	FC			FC
					Currency #	Unit Rate	Amount	Amount
1	2	3	4	5	6	7	8=(5)x(7)	9=8
II	Manang-Khudi Section							
1.1	Design Review/Design, Fabrication & supply of different types of towers & tower extension parts complete with stubs, step bolts, hangers, D-shackles, bolts & nuts etc but excluding tower accessories such as danger plates, number plates, phase plates, anti-climbing devices							
	Towers							
a	High tensile Steel		MT	1328				
b	Mild Steel		MT	1087				
2	Supply of Earthing of towers							
i.	Pipe Type		Nos.	62				
ii.	Counterpoise Type		Nos.	30				
3	Supply of following tower accessories							
i.	Danger Plate		Nos.	92				
ii.	Number Plate		Nos.	92				
iii.	Phase Plate (Set of three)		Sets	184				
iv.	Circuit Plate(Set of two)		Sets	92				
v.	Anti climbing device (Set of four)		Sets	92				
4	Supply of following Line Materials							
4.2	Conductor							
i)	ACSR Moose Conductor		KM	378				
4.1	GS Earthwire							
i)	7/3.35mm Earthwire		KM	32				
4.3	Insulators for 220kV line with Twin ACSR Moose conductor							

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Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, Clearing, forwarding and transportation to site (Excluding and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)
			Unit	Quantity	FC			FC
					Currency #	Unit Rate	Amount	Amount
1	2	3	4	5	6	7	8=(5)x(7)	9=8
(i)	120kN Composite Long Rod Insulator		Nos	74				
(ii)	160kN Composite Long Rod Insulator		Nos	2430				
4.4	Hardware Fittings suitable for Twin ACSR Moose conductor							
i)	Single 'I' Suspension PILOT String with necessary Clamp		Sets	74				
ii)	Double Tension Insulator String with necessary Clamp		Sets	1215				
4.8	Conductor and Earthwire Accessories							
i)	Mid span compression joint for ACSR Moose conductor		Nos	193				
ii)	Repair Sleeve for ACSR Moose conductor		Nos	64				
iii)	Rigid Spacer for ACSR Moose conductor		Nos	1223				
**iv)	Vibration Damper for ACSR Moose conductor		Nos	4416			-	
**v)	Bundle Spacer for twin bundle ACSR Moose conductor		Nos	2895			-	
**vi)	Spacer Damper for ACSR Moose conductor {as an alternative to item nos. (iv) & (v)}		Nos	2895				

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Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, Clearing, forwarding and transportation to site (Excluding and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)
			Unit	Quantity	FC			FC
					Currency #	Unit Rate	Amount	Amount
1	2	3	4	5	6	7	8=(5)x(7)	9=8
vii)	Mid span compression joint for 7/3.35mm GS earthwire		Nos	17				
viii)	Flexible Copper Bond for 7/3.35mm GS Earthwire		Nos	129				
ix)	Vibration Damper for for 7/3.35mm GS Earthwire		Nos	387				
x)	Earthwire Tension Clamp		Nos	198				
4.9	Supply of Fibre Cable & Accessories							
4.9.1	OPGW cable & Accessories							
i)	24 Fibre (DWSM) OPGW fibre optic cable		km	40				
ii)	Installation Hardware set for above 24 Fibre OPGW Fibre Optic cabling including all cable fittings & accessories as per below :		Sets*	36				
iii)	Joint Box		No.	10				
4.9.2	FODP							
i)	FODP 48F : Indoor Type, rack mounted with FCPC coupling and pig tails (5 mtrs each).		No.	2				
4.9.3	Fibre Optic approach cable							
i)	24 Fibre (DWSM)		Km.	1				
ii)	Installation hardware set for above 24 Fibre, Fibre Optic Approach Cable		Set *	1				

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Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, Clearing, forwarding and transportation to site (Excluding and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)
			Unit	Quantity	FC			FC
					Currency #	Unit Rate	Amount	Amount
1	2	3	4	5	6	7	8=(5)x(7)	9=8
4.10	Mandatory Spares of OPGW Cabling							
4.10.1	OPGW cable & Accessories							
i)	24 Fibre (DWDM) OPGW fibre optic cable		Km.	2				
ii)	Installation Hardware set for above 24 Fibre OPGW Fibre Optic cabling including all cable fittings & accessories as per below :		Sets*	2				
iii)	Joint Box (24 fibre)		No.	2				
4.10.2	Fibre Optic approach cable							
i)	24 Fibre (DWDM)		Km.	1				
ii)	Installation hardware set for above 24 Fibre, Approach Fibre Optic Cable		Set *	1				
5	Supply of following items for Aviation Requirements							
i)	Painting of normal tower above 45 mtr. from ground level		MT	121				
ii)	Span markers		Nos.	10				
iii)	Obstruction lights (to be provided as per IS 5613)							
a)	1 Medium + 2 Low Intensity		Sets	6				
b)	1 Medium + 4 Low Intensity		Sets	4				

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Part A: Transmission Line

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

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Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, Clearing, forwarding and transportation to site (Excluding and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)
			Unit	Quantity	FC			FC
					Currency #	Unit Rate	Amount	Amount
1	2	3	4	5	6	7	8=(5)x(7)	9=8
6	Miscellaneous Item							
i)	Multifunction Autonomous UAV with Flight Controller, redundant GPS, IMU, with plug and play attachable modules intended for survey as per TS		Set	2				
ii)	UAV for power line stringing and inspection equipped with various intelligent drop systems and all required accessories including 2 mm guide line.		Set	2				
	TOTAL (Total of column 11 and 12 to be carried forward to Schedule No. 5: Grand Summary)						-	

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 except towers, conductors and earthwires.

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

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

* Bidders should quote for one of the options for insulators.

** Bidders should quote for both option (iv) &(v) and (vii) of the options for Spacer damper and spacer and vibration damper separately.

Name of Bidder:

Date:

Signature of Bidder:

(Printed Name)

(Designation)

(Common Seal)

NEPAL ELECTRICITY AUTHORITY
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220KV D/C Manang-Khudi-Udipur Transmission Line
Part A: Transmission Line

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

All prices in Nepalese Local Currency (NRs.)

Item No.	Item description	Estimated		Ex Factory price (Excluding VAT)		Inland transportation up to site		Total Amount (Excluding Taxes)
		Unit	Quantity	Unit Rate	Amount	Unit Rate	Amount	Amount
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(7)
1	Tower Parts							
1.1	Design Review/Design, Fabrication & supply of differents types of towers & tower extension parts complete with stubs, step bolts, hangers, D-shackles, bolts & nuts etc but excluding tower accessories such as danger plates, number plates, phase plates, anti-climbing devices	-	-					
a	High tensile Steel	MT	601					
b	Mild Steel	MT	492					
		-	-					
2	Supply of Earthing of towers	-	-					
i.	Pipe Type	Nos.	32					
ii.	Counterpoise Type	Nos.	16					
		-	-					
3	Supply of following tower accessories	-	-					
i.	Danger Plate	Nos.	48					
ii.	Number Plate	Nos.	48					
iii.	Phase Plate (Set of three)	Sets	96					
iv.	Circuit Plate(Set of two)	Sets	96					
v.	Anti climbing device (Set of four)	Nos.	48					
vi.	Bird Guard (Set of three)	Nos.	25					

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220KV D/C Manang-Khudi-Udipur Transmission Line
Part A: Transmission Line

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

All prices in Nepalese Local Currency (NRs.)

Item No.	Item description	Estimated		Ex Factory price (Excluding VAT)		Inland transportation up to site		Total Amount (Excluding Taxes)
		Unit	Quantity	Unit Rate	Amount	Unit Rate	Amount	Amount
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(7)
		-	-					
4	Supply of following Line Materials	-	-					
4.1	Conductor	-	-					
i)	HTLS Conductor as per TS	KM	204					
		-	-					
4.2	GS Earthwire	-	-					
i)	7/3.35mm Earthwire	KM	17					
		-	-					
4.3	Composite Insulators for 220kV line with Twin HTLS conductor	-	-					
(i)	120kN Composite Long Rod Insulator	Nos	16					
(ii)	160kN Composite Long Rod Insulator	Nos	1,267					
		-	-					
4.4	Hardware Fittings suitable for Twin ACCC Drake conductor	-	-					
i)	Single 'I' Suspension PILOT String with necessary Clamp	Sets	16					
ii)	Double Tension Insulator String with necessary Clamp	Sets	634					
		-	-					

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All prices in Nepalese Local Currency (NRs.)

Item No.	Item description	Estimated		Ex Factory price (Excluding VAT)		Inland transportation up to site		Total Amount (Excluding Taxes)
		Unit	Quantity	Unit Rate	Amount	Unit Rate	Amount	Amount
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(7)
4.5	Conductor and Earthwire Accessories	-	-					
i)	Mid span compression joint for twin bundle HTLS conductor	Nos	102					
ii)	Repair Sleeve for twin bundle HTLS conductor	Nos	34					
iii)	Rigid Spacer for twin bundle HTLS conductor	Nos	907					
**iv)	Vibration Damper for HTLS Conductor	Nos	2,419					
**v)	Bundle Spacer for twin bundle HTLS conductor	Nos	2,073					
**vi)	Spacer Damper for twin bundle HTLS conductor {as an alternative to item nos. (iv) & (v)}	Nos	2,073					
vii)	Mid span compression joint for 7/3.35mm GS earthwire	Nos	9					
viii)	Flexible Copper Bond for 7/3.35mm GS Earthwire	Nos	96					
ix)	Vibration Damper for for 7/3.35mm GS Earthwire	Nos	202					
x)	Earthwire Tension Clamp	Nos	101					
		-	-					
4.9	Suplly of Fibre Cable & Accessories	-	-					
4.9.1	OPGW cable & Accessories	-	-					
i)	24 Fibre (DWSM) OPGW fibre optic cable	km	20					

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Part A: Transmission Line

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

All prices in Nepalese Local Currency (NRs.)

Item No.	Item description	Estimated		Ex Factory price (Excluding VAT)		Inland transportation up to site		Total Amount (Excluding Taxes)
		Unit	Quantity	Unit Rate	Amount	Unit Rate	Amount	Amount
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(7)
ii)	Installation Hardware set for above 24 Fibre OPGW Fibre Optic cabling including all cable fittings & accessories as per below :	Sets*	20					
iii)	Joint Box	No.	5					
		-	-					
4.9.2	FODP	-	-					
i)	FODP 48F : Indoor Type, rack mounted with FCPC coupling and pig tails (5 mtrs each).	No.	2					
		-	-					
4.9.3	Fibre Optic approach cable	-	-					
i)	24 Fibre (DWSM)	Km.	1					
ii)	Installation hardware set for above 24 Fibre, Fibre Optic Approach Cable	Set *	1					
		-	-					
4.10	Mandatory Spares of OPGW Cabling	-	-					
4.10.1	OPGW cable & Accessories	-	-					
i)	24 Fibre (DWSM) OPGW fibre optic cable	Km.	1					
ii)	Installation Hardware set for above 24 Fibre OPGW Fibre Optic cabling including all cable fittings & accessories as per below :	Sets*	1					
iii)	Joint Box (24 fibre)	No.	2					
		-	-					

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

All prices in Nepalese Local Currency (NRs.)

Item No.	Item description	Estimated		Ex Factory price (Excluding VAT)		Inland transportation up to site		Total Amount (Excluding Taxes)
		Unit	Quantity	Unit Rate	Amount	Unit Rate	Amount	Amount
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(7)
4.10.2	Fibre Optic approach cable	-	-					
i)	24 Fibre (DWSM)	Km.	1					
ii)	Installation hardware set for above 24 Fibre, Approach Fibre Optic Cable	Set *	1					
		-	-					
5	Supply of following items for Aviation Requirements	-	-					
i)	Painting of normal tower above 45 mtr. from ground level	MT	55					
ii)	Span markers	Nos.	10					
iii)	Obstruction lights (to be provided as per IS 5613)	-	-					
a)	1 Medium + 2 Low Intensity	Sets	6					
b)	1 Medium + 4 Low Intensity	Sets	4					
II	Manang-Khudi Section							
1.1	Design Review/Design, Fabrication & supply of differents types of towers & tower extension parts complete with stubs, step bolts, hangers, D-shackles, bolts & nuts etc but excluding tower accessories such as danger plates, number plates, phase plates, anti-climbing devices	-	-					
	Towers	-	-					
a	High tensile Steel	MT	1,328					
b	Mild Steel	MT	1,087					
		-	-					

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220KV D/C Manang-Khudi-Udipur Transmission Line
Part A: Transmission Line

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

All prices in Nepalese Local Currency (NRs.)

Item No.	Item description	Estimated		Ex Factory price (Excluding VAT)		Inland transportation up to site		Total Amount (Excluding Taxes)
		Unit	Quantity	Unit Rate	Amount	Unit Rate	Amount	Amount
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(7)
2	Supply of Earthing of towers	-	-					
i.	Pipe Type	Nos.	62					
ii.	Counterpoise Type	Nos.	30					
		-	-					
3	Supply of following tower accessories	-	-					
i.	Danger Plate	Nos.	92					
ii.	Number Plate	Nos.	92					
iii.	Phase Plate (Set of three)	Sets	184					
iv.	Circuit Plate(Set of two)	Sets	92					
v.	Anti climbing device (Set of four)	Sets	92					
		-	-					
4	Supply of following Line Materials	-	-					
4.2	Conductor	-	-					
i)	ACSR Moose Conductor	KM	378					
		-	-					
4.1	GS Earthwire	-	-					
i)	7/3.35mm Earthwire	KM	32					
		-	-					

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Part A: Transmission Line

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

All prices in Nepalese Local Currency (NRs.)

Item No.	Item description	Estimated		Ex Factory price (Excluding VAT)		Inland transportation up to site		Total Amount (Excluding Taxes)
		Unit	Quantity	Unit Rate	Amount	Unit Rate	Amount	Amount
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(7)
4.3	Insulators for 220kV line with Twin ACSR Moose conductor	-	-					
(i)	120kN Composite Long Rod Insulator	Nos	74					
(ii)	160kN Composite Long Rod Insulator	Nos	2,430					
		-	-					
4.4	Hardware Fittings suitable for Twin ACSR Moose conductor	-	-					
i)	Single 'I' Suspension PILOT String with necessary Clamp	Sets	74					
ii)	Double Tension Insulator String with necessary Clamp	Sets	1,215					
		-	-					
4.8	Conductor and Earthwire Accessories	-	-					
i)	Mid span compression joint for ACSR Moose conductor	Nos	193					
ii)	Repair Sleeve for ACSR Moose conductor	Nos	64					
iii)	Rigid Spacer for ACSR Moose conductor	Nos	1,223					
**iv)	Vibration Damper for ACSR Moose conductor	Nos	4,416					
**v)	Bundle Spacer for twin bundle ACSR Moose conductor	Nos	2,895					
**vi)	Spacer Damper for ACSR Moose conductor {as an alternative to item nos. (iv) & (v)}	Nos	2,895					
vii)	Mid span compression joint for 7/3.35mm GS earthwire	Nos	17					
viii)	Flexible Copper Bond for 7/3.35mm GS Earthwire	Nos	129					

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Part A: Transmission Line

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

All prices in Nepalese Local Currency (NRs.)

Item No.	Item description	Estimated		Ex Factory price (Excluding VAT)		Inland transportation up to site		Total Amount (Excluding Taxes)
		Unit	Quantity	Unit Rate	Amount	Unit Rate	Amount	Amount
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(7)
ix)	Vibration Damper for for 7/3.35mm GS Earthwire	Nos	387					
x)	Earthwire Tension Clamp	Nos	198					
		-	-					
4.9	Supply of Fibre Cable & Accessories	-	-					
4.9.1	OPGW cable & Accessories	-	-					
i)	24 Fibre (DWSM) OPGW fibre optic cable	km	40					
ii)	Installation Hardware set for above 24 Fibre OPGW Fibre Optic cabling including all cable fittings & accessories as per below :	Sets*	36					
iii)	Joint Box	No.	10					
		-	-					
4.9.2	FODP	-	-					
i)	FODP 48F : Indoor Type, rack mounted with FCPC coupling and pig tails (5 mtrs each).	No.	2					
		-	-					
4.9.3	Fibre Optic approach cable	-	-					
i)	24 Fibre (DWSM)	Km.	1					
ii)	Installation hardware set for above 24 Fibre, Fibre Optic Approach Cable	Set *	1					
		-	-					

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220KV D/C Manang-Khudi-Udipur Transmission Line
Part A: Transmission Line

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

All prices in Nepalese Local Currency (NRs.)

Item No.	Item description	Estimated		Ex Factory price (Excluding VAT)		Inland transportation up to site		Total Amount (Excluding Taxes)
		Unit	Quantity	Unit Rate	Amount	Unit Rate	Amount	Amount
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(7)
4.10	Mandatory Spares of OPGW Cabling	-	-					
4.10.1	OPGW cable & Accessories	-	-					
i)	24 Fibre (DWSM) OPGW fibre optic cable	Km.	2					
ii)	Installation Hardware set for above 24 Fibre OPGW Fibre Optic cabling including all cable fittings & accessories as per below :	Sets*	2					
iii)	Joint Box (24 fibre)	No.	2					
		-	-					
4.10.2	Fibre Optic approach cable	-	-					
i)	24 Fibre (DWSM)	Km.	1					
ii)	Installation hardware set for above 24 Fibre, Approach Fibre Optic Cable	Set *	1					
		-	-					
5	Supply of following items for Aviation Requirements	-	-					
i)	Painting of normal tower above 45 mtr. from ground level	MT	121					
ii)	Span markers	Nos.	10					
iii)	Obstruction lights (to be provided as per IS 5613)	-	-					
a)	1 Medium + 2 Low Intensity	Sets	6					
b)	1 Medium + 4 Low Intensity	Sets	4					
		-	-					

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220KV D/C Manang-Khudi-Udipur Transmission Line
Part A: Transmission Line

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

All prices in Nepalese Local Currency (NRs.)

Item No.	Item description	Estimated		Ex Factory price (Excluding VAT)		Inland transportation up to site		Total Amount (Excluding Taxes)
		Unit	Quantity	Unit Rate	Amount	Unit Rate	Amount	Amount
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(7)
6	Miscellaneous Item							
i)	Multifunction Autonomous UAV with Flight Controller, redundant GPS, IMU, with plug and play attachable modules intended for survey as per TS	Set	2					
ii)	UAV for power line stringing and inspection equipped with various intelligent drop systems and all required accessories including 2 mm guide line.	Set	2					
	TOTAL (Total of column 11 and 12 to be carried forward to Schedule No. 5: Grand Summary)							

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 except towers, conductors and earthwires.

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

4) For Bought out items, all applicable taxes, duties and levies except Octroi/ Entry tax are to be included in the Ex works price

* Bidders should quote for one of the options for insulators.

** Bidders should quote for both option (iv) &(v) and (vii) of the options for Spacer damper and spacer and vibration damper separately.

Name of Bidder:

Date:

Signature of Bidder:

(Printed Name)

(Designation)

(Common Seal)

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220KV D/C Manang-Khudi-Udipur Transmission Line
Part A: Transmission Line

Schedule-3: Design Services

Item No.	Item Description	Estimated		Unit Prices			Total Prices	
				Local Currency portion	Foreign Currency Portion		LC	FC
		Quantity	Unit	NRs	Currency	Unit Rate		
1	2	3	4	5	6	7	8=(3)x(5)	8=(3)x(7)
A	Design Review of DB, DC, DD, DD Special & MD TowersTowers for Khudi-Udipur section with HTLS conductor	1	Lot					
B	Design of DD Special, MD Towers Design Review of DB, DC &DD Towers for Manang-Khudi section with ACSR Moose conductor	1	Lot					
	Total (Total of column 7 and 8 to be carried forward to Schedule No. 5: Grand Summary)							

Name of Bidder:

Signature of Bidder:

(Printed Name)

(Designation)

(Common Seal)

Date:

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220KV D/C Manang-Khudi-Udipur Transmission Line
Part A: Transmission Line

Schedule No. 4: Installation Services**(a): Installation and Construction Charges**

Sl. No.	Item Description	Unit	Qty.	Installation Charges				
				Portion in Foreign Currency			Portion in Nepali Currency (in NRs)	
				Currency*	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	(7)=(4)X(6)	(8)	(9)=(4)X(8)
I	Khudi Udipur Section							
1	Survey							
i.	Detailed survey including route alignment, profiling, tower spotting	KM	16					
ii.	Check Survey	KM	16					
iii.	Cadastral Survey including land parcel data preparation	KM	16					
2	Detailed soil Investigation							
i.	All kind of soil except FR & HR	Loc.	7					
ii.	Fissured/soft rock	Loc.	3					
iii.	Hard rock	Loc.	2					
3	Benching							
i)	All kind of soil except FR & HR	Cum.	3357					
ii)	Fissured Rock	Cum.	2286					
iii)	Hard Rock	Cum.	1000					
4	Work associated with tower foundations.							
4.1	Excavation Volume							
i)	Dry Foundation	Cum.	2433					
ii)	Wet Foundation	Cum.	3458					
iii)	Partially Submerged Foundation	Cum.	3633					
iv)	Fully Submerged Foundation	Cum.	3814					

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220KV D/C Manang-Khudi-Udipur Transmission Line
Part A: Transmission Line

Schedule No. 4: Installation Services**(a): Installation and Construction Charges**

Sl. No.	Item Description	Unit	Qty.	Installation Charges				
				Portion in Foreign Currency			Portion in Nepali Currency (in NRs)	
				Currency*	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	(7)=(4)X(6)	(8)	(9)=(4)X(8)
v)	Wet Black Cotton Foundation	Cum.	4494					
vi)	Dry Fissured Rock	Cum.	2340					
vii)	Wet Fissured Rock	Cum.	2700					
viii)	Submerged Fissured Rock	Cum.	3448					
ix)	Hard Rock Foundation	Cum.	156					
ix)	Sandy Soil Foundation	Cum.	1819					
4.2	Foundation Concrete M20							
i)	Dry Foundation	Cum.	370					
ii)	Wet Foundation	Cum.	504					
iii)	Partially Submerged Foundation	Cum.	527					
iv)	Fully Submerged Foundation	Cum.	549					
v)	Wet Black Cotton Foundation	Cum.	642					
vi)	Dry Fissured Rock	Cum.	375					
vii)	Wet Fissured Rock	Cum.	424					
viii)	Submerged Fissured Rock	Cum.	527					
ix)	Hard Rock Foundation	Cum.	137					
ix)	Sandy Soil Foundation	Cum.	296					
4.3	Lean Concrete M10							
i)	Dry Foundation	Cum.	40					
ii)	Wet Foundation	Cum.	57					

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220KV D/C Manang-Khudi-Udipur Transmission Line
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Schedule No. 4: Installation Services**(a): Installation and Construction Charges**

Sl. No.	Item Description	Unit	Qty.	Installation Charges				
				Portion in Foreign Currency			Portion in Nepali Currency (in NRs)	
				Currency*	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	(7)=(4)X(6)	(8)	(9)=(4)X(8)
iii)	Partially Submerged Foundation	Cum.	59					
iv)	Fully Submerged Foundation	Cum.	62					
v)	Wet Black Cotton Foundation	Cum.	73					
vi)	Dry Fissured Rock	Cum.	41					
vii)	Wet Fissured Rock	Cum.	47					
viii)	Submerged Fissured Rock	Cum.	60					
ix)	Hard Rock Foundation	Cum.	6					
ix)	Sandy Soil Foundation	Cum.	31					
4.4	Total Reinforcement Weight							
i)	Dry Foundation	MT	40					
ii)	Wet Foundation	MT	54					
iii)	Partially Submerged Foundation	MT	56					
iv)	Fully Submerged Foundation	MT	58					
v)	Wet Black Cotton Foundation	MT	67					
vi)	Dry Fissured Rock	MT	40					
vii)	Wet Fissured Rock	MT	45					
viii)	Submerged Fissured Rock	MT	55					
ix)	Hard Rock Foundation	MT	9					
ix)	Sandy Soil Foundation	MT	32					

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Part A: Transmission Line

Schedule No. 4: Installation Services**(a): Installation and Construction Charges**

Sl. No.	Item Description	Unit	Qty.	Installation Charges				
				Portion in Foreign Currency			Portion in Nepali Currency (in NRs)	
				Currency*	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	(7)=(4)X(6)	(8)	(9)=(4)X(8)
5	Erection of following types of towers & tower extension parts complete with stubs, step bolts, hangers, D-shackles, bolts & nuts etc but excluding tower accessories such as danger plates, number plates, phase plates, anti-climbing devices							
i)	Tension Tower DB	MT	164					
ii)	Tension Tower DC	MT	216					
iii)	Tension Tower DD	MT	520					
iv)	Special Tower	MT	92.8					
6	Installation of Earthing of towers							
i.	Pipe Type	Nos.	32					
ii.	Counterpoise Type	Nos.	16					
7	Installation of following tower accessories							
i.	Danger Plate	Nos.	48					
ii.	Number Plate	Nos.	48					
iii.	Phase Plate (Set of three)	Sets	96					
iv.	Circuit Plate(Set of two)	Sets	96					
v.	Anti climbing device	Nos.	48					
vi.	Bird Guard	Nos.	25					
8	Protection of tower footing							
i)	Random rubble stone masonry including excavation (1:5 cementconcrete)	Cu.m.	1076					
ii)	Stone bound in galvanising wire netting including excavation	Cu.m.	646					
iii)	Back filling and levelling of volumes enclosed by revetment	Cu.m.	968					

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220KV D/C Manang-Khudi-Udipur Transmission Line
Part A: Transmission Line

Schedule No. 4: Installation Services**(a): Installation and Construction Charges**

Sl. No.	Item Description	Unit	Qty.	Installation Charges				
				Portion in Foreign Currency			Portion in Nepali Currency (in NRs)	
				Currency*	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	(7)=(4)X(6)	(8)	(9)=(4)X(8)
iv)	M15 Conc. Nominal Mix 1:2:4 for top seal cover	Cu.m.	108					
9	Installation of insulator strings complete with arcing horns & necessary hardware, installing of bundle conductor including fixing of conductor accessories, installing & stringing of one earthwire including fixing of earthwire/ OPGW accessories (Twin bundle Conductor) .							
(i)	Normal Stretch (Double Ckt. Portion)	kms	17					
10	Optical Fibre Cabling							
A.	OPGW cable & Accessories							
(a)	24 Fibre (DWSM) OPGW fibre optic cable		20					
(b)	Installation Hardware set for above 24 Fibre OPGW Fibre Optic cabling including all cable fittings & accessories except joint box		20					
(c)	Joint box (24 Fibres)		5					
B.	FODP							
(a)	FODP 48F : Indoor Type, rack mounted with FCPC coupling and pig tails		2					

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Schedule No. 4: Installation Services**(a): Installation and Construction Charges**

Sl. No.	Item Description	Unit	Qty.	Installation Charges				
				Portion in Foreign Currency			Portion in Nepali Currency (in NRs)	
				Currency*	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	(7)=(4)X(6)	(8)	(9)=(4)X(8)
C.	Fibre Optic approach cable							
(a)	24 Fibre (DWDM)		1					
(b)	Installation hardware set for above 24 Fibre, Fibre Optic Approach Cable		1					
II	Manang-Khudi Section							
1	Survey							
i.	Detailed survey including route alignment, profiling, tower spotting	KM	8					
ii.	Check Survey	KM	30					
iii.	Cadastral Survey including land parcel data preparation	KM	30					
2.1	Detailed soil Investigation							
i.	All kind of soil except FR & HR	Loc.	17					
ii.	Fissured/soft rock	Loc.	10					
iii.	Hard rock	Loc.	2					
3	Benching							
i)	All kind of soil except FR & HR	Cum.	19651					
ii)	Fissured Rock	Cum.	8488					
iii)	Hard Rock	Cum.	156					
4	Work associated with tower foundations.							
4.1	Excavation Volume							
i)	Dry Foundation	Cum.	2433					

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Schedule No. 4: Installation Services**(a): Installation and Construction Charges**

Sl. No.	Item Description	Unit	Qty.	Installation Charges				
				Portion in Foreign Currency			Portion in Nepali Currency (in NRs)	
				Currency*	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	(7)=(4)X(6)	(8)	(9)=(4)X(8)
ii)	Wet Foundation	Cum.	3458					
iii)	Partially Submerged Foundation	Cum.	3633					
iv)	Fully Submerged Foundation	Cum.	3814					
v)	Wet Black Cotton Foundation	Cum.	4494					
vi)	Dry Fissured Rock	Cum.	2340					
vii)	Wet Fissured Rock	Cum.	2700					
viii)	Submerged Fissured Rock	Cum.	3448					
ix)	Hard Rock Foundation	Cum.	156					
x)	Sandy Soil Foundation	Cum.	1819					
4.2	Foundation Concrete M20							
i)	Dry Foundation	Cum.	370					
ii)	Wet Foundation	Cum.	504					
iii)	Partially Submerged Foundation	Cum.	527					
iv)	Fully Submerged Foundation	Cum.	549					
v)	Wet Black Cotton Foundation	Cum.	642					
vi)	Dry Fissured Rock	Cum.	375					
vii)	Wet Fissured Rock	Cum.	424					
viii)	Submerged Fissured Rock	Cum.	527					
ix)	Hard Rock Foundation	Cum.	137					
x)	Sandy Soil Foundation	Cum.	296					
4.3	Lean Concrete M10							

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Schedule No. 4: Installation Services
(a): Installation and Construction Charges

Sl. No.	Item Description	Unit	Qty.	Installation Charges				
				Portion in Foreign Currency			Portion in Nepali Currency (in NRs)	
				Currency*	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	(7)=(4)X(6)	(8)	(9)=(4)X(8)
i)	Dry Foundation	Cum.	40					
ii)	Wet Foundation	Cum.	57					
iii)	Partially Submerged Foundation	Cum.	59					
iv)	Fully Submerged Foundation	Cum.	62					
v)	Wet Black Cotton Foundation	Cum.	73					
vi)	Dry Fissured Rock	Cum.	41					
vii)	Wet Fissured Rock	Cum.	47					
viii)	Submerged Fissured Rock	Cum.	60					
ix)	Hard Rock Foundation	Cum.	6					
x)	Sandy Soil Foundation	Cum.	31					
4.3	Total Reinforcement Weight							
i)	Dry Foundation	MT	40					
ii)	Wet Foundation	MT	54					
iii)	Partially Submerged Foundation	MT	56					
iv)	Fully Submerged Foundation	MT	58					
v)	Wet Black Cotton Foundation	MT	67					
vi)	Dry Fissured Rock	MT	40					
vii)	Wet Fissured Rock	MT	45					
viii)	Submerged Fissured Rock	MT	55					
ix)	Hard Rock Foundation	MT	9					
x)	Sandy Soil Foundation	MT	32					
5	Erection of following types of towers & tower extension parts complete							

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Schedule No. 4: Installation Services

(a): Installation and Construction Charges

Sl. No.	Item Description	Unit	Qty.	Installation Charges				
				Portion in Foreign Currency			Portion in Nepali Currency (in NRs)	
				Currency*	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	(7)=(4)X(6)	(8)	(9)=(4)X(8)
5.1	Tension Tower DB	MT	345					
5.2	Tension Tower DC	MT	231					
5.3	Tension Tower DD	MT	1524					
5.4	Special Tower	MT	315					
6	Installation of Earthing of towers							
i.	Pipe Type	Nos.	62					

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Schedule No. 4: Installation Services**(a): Installation and Construction Charges**

Sl. No.	Item Description	Unit	Qty.	Installation Charges				
				Portion in Foreign Currency			Portion in Nepali Currency (in NRs)	
				Currency*	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	(7)=(4)X(6)	(8)	(9)=(4)X(8)
ii.	Counterpoise Type	Nos.	30					
7	Installation of following tower accessories							
i.	Danger Plate	Nos.	92					
ii.	Number Plate	Nos.	92					
iii.	Phase Plate (Set of three)	Sets	184					
iv.	Circuit Plate(Set of two)	Sets	92					
v.	Anti climbing device	Nos.	92					
vi.	Bird Guard							
8	Protection of tower footing							
i)	Random rubble stone masonry including excavation (1:5 cementconcrete)	Cu.m.	2778					
ii)	Stone bound in galvanising wire netting including excavation	Cu.m.	1667					
iii)	Back filling and levelling of volumes enclosed by revetment	Cu.m.	2500					
iv)	M15 Conc. Nominal Mix 1:2:4 for top seal cover	Cu.m.	278					

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Schedule No. 4: Installation Services**(a): Installation and Construction Charges**

Sl. No.	Item Description	Unit	Qty.	Installation Charges				
				Portion in Foreign Currency			Portion in Nepali Currency (in NRs)	
				Currency*	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	(7)=(4)X(6)	(8)	(9)=(4)X(8)
9	Installation of insulator strings complete with arcing horns & necessary hardware, installing of bundle conductor including fixing of conductor accessories, installing & stringing of one earthwire including fixing of earthwire/ OPGW accessories (Twin bundle Conductor) .							
(i)	Normal Stretch (Double Ckt. Portion)	kms	30					
	TOTAL INSTALATION SERVICES (Total of column 8 and 10 to be carried forward to Schedule No. 5: Grand Summary)					-		-

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

2.) 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

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

Φ Strike out if not applicable

Name of Bidder:

Date:

Signature of Bidder:

(Printed Name)

(Designation)

(Common Seal)

NEPAL ELECTRICITY AUTHORITY
PROJECT MANAGEMENT DIRECTORATE
MARSYANGDI CORRIDOR 220 KV TRANSMISSION LINE PROJECT
220KV D/C Manang-Khudi-Udipur Transmission Line
Part A: Transmission Line

Schedule No. 4 : Installation and Other Services

(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	Unit Rate	Total Training Charges
1	2	3	4	5	6	7	8	9 = 5 x 6 x 8
A	Project Management Professional (PMP) Training	Project Procurement Management, Project Risk Management, Project scheduling, Project Cost Management, Project HR management, Ethics and Professional Conduct		2	14			
B	Procurement Training focusing on FIDIC Condition of Contract	FIDIC Condition of Contract, Procurement of goods, Plant and Equipment, Best Procurement Practices, Integrity in Procurement		7	7			
Total for Training Charges (Total of column 7 to be carried forward to Schedule No. 5: Grand Summary)								

Name of Bidder:

Date:

Signature of Bidder:

(Printed Name)

(Designation)

(Common Seal)

NEPAL ELECTRICITY AUTHORITY
PROJECT MANAGEMENT DIRECTORATE
MARSYANGDI CORRIDOR 220 KV TRANSMISSION LINE PROJECT
220KV D/C Manang-Khudi-Udipur Transmission Line
Part A: Transmission Line

Schedule No. 4 : Installation and Other Services

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

Sl. No.	Description of the Test	Item for which training is to be imparted.	Training duration in days	Training Charges for Contractors	
				Currency	Total Training Charges
1	2	3	4	5	6
1	HTLS Conductor Installation, O&M for 20 Supervisors	HTLS Conductor Installation Operation and Maintenance	21		
2	UAV hands on operation and training for Transmission line stringing, O & M for 10 persons		12		
3	UAV hands on operation and training to conduct the survey of Transmission line for 10 persons		12		
	Total for Training Charges (total of column 6 To be carried forward to Schedule 5: Grand Summary)				

Name of Bidder:

Date:

Signature of Bidder:

(Printed Name)

(Designation)

(Common Seal)

NEPAL ELECTRICITY AUTHORITY
PROJECT MANAGEMENT DIRECTORATE
MARSYANGDI CORRIDOR 220 KV TRANSMISSION LINE PROJECT
220KV D/C Manang-Khudi Transmission Line
Part A: Transmission Line

Schedule No. 4 : Installation and Other Services**(d): Maintenance Charges**

Sl No	Description	Unit	Qty.	Total Maintenance Charges	
				Currency	Total Maintenance Charges
	Not Applicable				
	Total Maintenance Charges (To be carried forward to Schedule 5: Grand Summary)				

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

NEPAL ELECTRICITY AUTHORITY
PROJECT MANAGEMENT DIRECTORATE
MARSYANGDI CORRIDOR 220 KV TRANSMISSION LINE PROJECT
220KV D/C Manang-Khudi-Udipur Transmission Line
Part A: Transmission Line

Schedule No. 4 : Installation and Other Services**(e): Type Test charges for Type Tests to be conducted abroad**

Sl. No.	Description of Tests	Country of Testing	Unit	Qty.	Currency #	Unit Rate	Amount
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)=(5x (7)
1	On complete HTLS Conductor		No.	1			
a)	DC resistance test on stranded conductor		No.	1			
b)	UTS test on stranded conductor		No.	1			
c)	Radio interference voltage test (dry)		No.	1			
d)	Corona extinction voltage test (dry)		No.	1			
e)	Stress- Strain test on stranded conductor and core at room temperature		No.	1			
f)	Stress-strain test on stranded conductor and core at elevated temperature		No.	1			
g)	High temperature endurance & creep test on stranded conductor		No.	1			
h)	Sheaves Test		No.	1			
i)	Axial Impact Test		No.	1			
j)	Radial Crush Test		No.	1			
k)	Torsional Ductility Test		No.	1			
l)	Aeolian Vibration Test		No.	1			
m)	Temperature Cycle Test		No.	1			
2	On HTLS Conductor Strand/core						
a)	Heat resistance test on Aluminium Alloy strands or core		No.	1			
b)	Bending test on aluminium clad core (if applicable)		No.	1			
c)	Compression test on aluminium clad core (if applicable)		No.	1			
d)	Coefficient of linear expansion on core wire		No.	1			
e)	Strand Brittle fracture test (for composite core only)		No.	1			
f)	Bending test on composite core		No.	1			
3	ACSR MOOSE Conductor as per TS						
a)	UTS Test		No.	1			
b)	DC Resistance Test		No.	1			
c)	Corona & RIV Test		No.	1			

Sl. No.	Description of Tests	Country of Testing	Unit	Qty.	Currency #	Unit Rate	Amount
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)=(5x (7))
4	7/3.35 mm GS Earthwire						
a)	UTS Test		No.	1			
b)	D.C. Resistance Test		No.	1			
5	AACSR Earthwire						
a)	UTS Test		No.	1			
b)	D.C. Resistance Test		No.	1			
6	Insulators						
a)	Type tests on applicable insulator unit and complete insulator strings with hardware fittings, individual hardware fittings for HTLS Conductors as specified in Volume II, Section VIII and for its total combination		Lot	1			
b)	Type Test on Insulator as per TS for ACSR Moose Conductor			1			
7	Proto Type Testing of towers with ACSR Moose Conductor						
a)	Tower Type Special Tower with extension		No.	1			
b)	Tower Type MD Tower with extension		No.	1			
TOTAL (Total of column 7 to be carried forward to Schedule No. 5: Grand Summary)							

Radio interference voltage test (dry)

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

Name of Bidder:

Signature of Bidder:

(Printed Name)

(Designation)

(Common Seal)

NEPAL ELECTRICITY AUTHORITY
PROJECT MANAGEMENT DIRECTORATE
MARSYANGDI CORRIDOR 220 KV TRANSMISSION LINE PROJECT
220KV D/C Manang-Khudi-Udipur Transmission Line

Schedule No. 5: Grand Summary for Part A and Part B

Sl. No.	Description	Part A: Transmission Line	
		Total Price Foreign ()*	Total Price Local ()*
1	TOTAL SCHEDULE NO. 1		
	Plant and Equipment including Mandatory Spares to be supplied from abroad.		
2	TOTAL SCHEDULE NO. 2		
	Plant and Equipment including Mandatory Spares Parts to be supplied from within Nepal		
3	TOTAL SCHEDULE NO. 3		
	Design Services		
4	TOTAL SCHEDULE NO. 4		
	(a) Installation and construction charges		
	(b) Training charges for training to be imparted abroad		
	(c) Training charges for training to be imparted in Nepal		
	(d) Maintenance Charge		
	(e) Type Tests charges for type Tests to be conducted abroad		
	GRAND TOTAL FOR PART A [1+2+3+4]		

Name of Bidder:

Date:

Signature of Bidder:

(Printed Name)

(Designation)

(Common Seal)

Volume III

Bid Price Schedule

(Part B-Substation)

NEPAL ELECTRICITY AUTHORITY
PROJECT MANAGEMENT DIRECTORATE
MARSYANGDI CORRIDOR 220 kV TRANSMISSION LINE PROJECT

(I) 220/132/33kV Manang (new) GIS Substation and (II) 220/132/33kV Khudi (new) GIS Substation

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

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportaion to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)
			Unit	Quantity	Currency	Unit Rate	Amount	FC
1	2	3	4	5	6	7	8=(5) x(7)	9=8
Part-A : EMPLOYER ASSESSED QUANTITIES								
A.1	POWER TRANSFORMER							
A1.1	POWER TRANSFORMER							
a)	33.33MVA , 220/132/33 KV, 1-phase Autotransformer (Excluding insulating oil) with RIP Bushing as per TS		Nos.	4				
b)	Insulating oil for 33.33MVA , 220/132/33 KV, 1-phase Autotransformer (1Lot = Oil for 1 Autotransformers)		Lot	4				
c)	33kV Current transformer (NCT) for autotransformer		No	1				
d)	Nitrogen Injection type Fire Protection sysytem including underground oil tank		Set	4				
A1.2	POWER TRANSFORMER							
a)	30 MVA , 132/33 KV, 3-phase transformer (Excluding insulating oil) with RIP Bushing as per TS.		Nos.	1				
b)	Insulating oil for 30 MVA , 132/33 KV, 3-phase transformer (1Lot = Oil for 1Autotransformers)		Lot	1				
c)	Nitrogen Injection type Fire Protection sysytem including underground oil tank		Set	1				
A1.3	Testing & Maintenance Equipments							
a)	Oil Storage Tank (10KL size)		No.	1				
b)	Transformer Oil Filtration plant (6KLPH)		No	1				
A2	LT TRANSFORMER							
1	630 kVA,33/0.400kV		Nos	2				
B	245 kV equipment							
B1	245KV GIS Equipment							
1.01	245kV, SF6 GIS Bus Bars Module [Module description as per Technical specification]		Set	2				
1.02	245kV, SF6 GIS ICT bay Module [Module description as per Technical specification]		Set	2				
1.03	245kV, SF6 GIS Line bay Module [Module description as per Technical specification]		Set	6				

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

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportaion to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)
			Unit	Quantity	Currency	Unit Rate	Amount	FC
								9=8
1	2	3	4	5	6	7	8=(5) x(7)	9=8
1.04	245kV, SF6 GIS Bus Coupler bay Module [Module description as per Technical specification]		Set	1				
1.05	245 kV Auxiliary Bus to connect spare unit of Transformer [Module description as per Technical specification]		Set	1				
1.06	245kV, 1600A,40kA SF6/Air Bushing for Connecting GIS to AIS alongwith support structure (Single Phase)		Nos	25				
1.08	245kV, 1600A, 1phase SF6 GIS Bus duct alongwith support structure		Mtr	1200				
B2	245KV Outdoor Equipment							
1.1	216 KV Surge Arrester (1-phase)		Nos.	25				
1.2	245kV BPI		Nos.	30				
C	145KV Equipment							
C1	145KV GIS Equipment							
1.01	145kV, SF6 GIS Bus Bars Module [Module description as per Technical specification]		Set	2				
1.02	145kV, SF6 GIS Transformer bay Module [Module description as per Technical specification for 220/132kV ICT]		Set	2				
1.03	145kV, SF6 GIS Transformer bay Module [Module description as per Technical specification for 132/33kV ICT]		Set	1				
1.04	145kV, SF6 GIS Line bay Module [Module description as per Technical specification]		Set	6				
1.05	145kV, SF6 GIS Bus Coupler bay Module [Module description as per Technical specification]		Set	1				
1.06	145 kV Auxiliary Bus to connect spare unit of Transformer [Module description as per Technical specification]		Set	1				
C2	145KV Outdoor Equipment							
1.1	120KV Surge Arrester (1-phase)		Nos.	28				
1.2	145kV BPI		Nos.	30				
C3	132 kV Cu condctor, XLPE cable and accessories							
1.1	132 kV, 1C x 1200 sq.mm Copper, XLPE cable as per Technical specification		Mtr	1500				
1.2	132 kV, 1C x 500 sq.mm Copper, XLPE cable as per Technical specification		Mtr	600				

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

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportaion to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)
			Unit	Quantity	Currency	Unit Rate	Amount	FC
1	2	3	4	5	6	7	8=(5) x(7)	9=8
1.3	132 kV, 1C x 300 sq.mm Copper, XLPE cable as per Technical specification		Mtr	300				
1.4	132 KV Termination kit suitable for 132KV, 1CX 1200 sq.mm XLPE Cable alongwith with support Structure for EHV Cable		Nos	18				
1.5	132 KV Termination kit suitable for 132KV, 1CX 500 sq.mm XLPE Cable alongwith with support Structure for EHV Cable		Nos	7				
1.6	132 KV Termination kit suitable for 132KV, 1CX300 sq.mm XLPE Cable alongwith with support Structure for EHV Cable		Nos	3				
D	36KV Equipment							
D1	36KV GIS Equipment							
1.01	Indoor switchgear panels (GIS type) IP1 type		Set	1				
1.02	Indoor Switchgear Panels (GIS type) IP 2 type		Set	6				
1.03	Indoor switchgear panels (GIS type) IP3 type		Set	1				
1.04	Indoor switchgear panels (GIS type) IP4 Type		Set	1				
D2	36kV XLPE cable and its termination for connection of 33 kV side of 132/33 kV Transformer to 36kV GIS bay and line bays							
(i)	33kV, 1C x 400 sq.mm Copper, XLPE cable as per Technical specification		Mtr	2000				
(ii)	33KV Termination kit suitable for 1C x 400 sq.mm Copper, XLPE cable alongwith with support Structure		Nos	27				
D3	36 KV XLPE 1-Ph cable and its termination for connection of 33 kV side of 630 kVA, 33/0.400KV LT Transformer from available HT external supply							
(i)	36 KV XLPE 3C, 120sqmm Copper, XLPE cable as per Technical Specification		Mtr	500				
(ii)	33KV, 3 Phase termination kit suitable for above cable		Set	3				
D4	36 kV Equipments for LT Transformer							
1.0	36 kV Isolator (3-phase)-HDB							
(i)	1250A, 25 KA, Isolator		No	8				
2.0	30 kV Surge Arrestors (1-Phase)		Nos	24				
3.0	36kV Horn Gap Fuse (3-Phase)		No	1				
4.0	36 kV BPI		Nos	27				
E	Testing & Maintenance Equipment for GIS							
(i)	SF6 Gas filling & evacuating plant							
	For 245kV, 145kV & 36kV GIS		Set	1				

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

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportaion to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)
			Unit	Quantity	Currency	Unit Rate	Amount	FC
								9=8
1	2	3	4	5	6	7	8=(5) x(7)	9=8
(ii)	Partial Discharge Monitoring System for GIS as per Technical Specification							
(a)	For 245kV GIS		Set	1				
(b)	For 145kV GIS		Set	1				
(c)	For 36kV GIS		Set	1				
(iii)	Dew Point meter							
	For 245kV, 145kV & 36kV GIS		Set	1				
(iv)	SF6 Gas Leak Detector							
	For 245kV, 145kV & 36kV GIS		Set	1				
(v)	EOT crane for 245kV GIS Hall		Set	1				
(vi)	EOT crane for 145kV GIS Hall		Set	1				
(vii)	SF6 Gas Analyser		Set	1				
F	72.5kV EQUIPMENT							
1.1	72.5 kV, 1250A, 31.5kA Circuit Breaker (3-phase) with support structure		No.	1				
1.2	72.5 kV, 1250A,31.5kA Isolators with earth switch (3-phase, DBR type)		No.	1				
1.3	72.5kV, 1250A, 31.5 kA with 120% extended rating CT.		Nos.	3				
1.4	72.5kV PT.(1-phase)		Nos.	3				
1.5	72.5 kV BPI (1-phase)		Nos.	6				
G	RELAY PANELS (WITH AUTOMATION)							
1.0	220 kV							
a	Circuit Breaker Relay Panel							
i	With Auto Reclose		Set	6				
ii	With out Auto Reclose		Set	3				
b	Line Protection Panel							
i	For 220 kV Khudi lines		Set	2				
ii	For 220 kV other lines		Set	4				
d	Transformer Protection Panel (For both HV & MV side for 220/132kV ICT)		Set	1				
e	Bus Bar Protection Panel		Set	1				
2.0	132 kV							
a	Circuit Breaker Relay Panel							
ii	With out Auto Reclose		Set	10				
b	Line Protection Panel		Set	6				
d	Transformer Protection Panel (For both HV & MV side for 132/33kV ICT)		Set	1				

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

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportaion to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)
			Unit	Quantity	Currency	Unit Rate	Amount	FC
1	2	3	4	5	6	7	8=(5) x(7)	9=8
e	Bus Bar Protection Panel		Set	1				
H	COMMON EQUIPMENTS							
1.0	Relay Test tool kit		Set	1				
2.0	Time synchronisation equipment		No.	1				
J	SUBSTATION AUTOMATION							
J.1	Complete Substation Automation System (SAS) for substation including hardware and software for the substation & remote control stations alongwith associated equipments for the following bays as per Technical Specification							
a	Main bays to be automated							
i)	220kV system		Bay Nos	9				
ii)	132kV system		Bay Nos	10				
iii)	33kV system		Bay Nos	10				
iv)	BCU for controlling & monitoring of Auxilary System		Set	1				
K	Teleprotection & communication Equipments							
i)	Digital Protection Coupler (220 kV & 132 kV)		Nos	12				
ii)	Digital Protection Coupler(for other end)		Nos	10				
iii)	PBAX with following configuration as per TS		Set	1				
a)	2 wire subscriber interface card with capacity 32 local subscribers (along with 32 nos. Instruments)							
b)	4 wire E & M interface card with capacity 8 nos. trunks (For PLCC)							
c)	E-1 interface with 2 trunks G-703							
d)	2 wire interface with 1 trunk (For PSTN)							
iv)	Testing & Maintenance equipment (print test kit only)		Set	1				
v)	4 wire telephone equipment		No	1				
L	LT Switchgear (As per Technical specification)							
a	415V Main switchboard		Set	1				
b	415V ACDB		Set	1				
c	415V MLDB		Set	1				
d	415V Emergency LDB		Set	1				
e	220V DCDB		Sets	2				
f	48 V DCDB		Sets	2				
M	Batteries							
a	220V							
i	600 AH		Nos	2				

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

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportaion to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)
			Unit	Quantity	Currency	Unit Rate	Amount	FC
1	2	3	4	5	6	7	8=(5) x(7)	9=8
b	48V							
i	600 AH		Nos	2				
N	Float Cum Boost Battery Charger							
a	220V Float Cum Boost Battery Charger							
i	80A/80A		Nos	2				
b	48V Float Cum Boost Battery Charger							
ii	80A/80A		Nos	2				
O	Silent Type Diesel Generator with control Panel							
a	250kVA		Set	1				
P	Fire Protection System							
a	Portable /Trolley/Wheel mounted extinguishers							
i	9 litre water type		Nos	5				
ii	50 litre foam type		Nos	2				
iii	4.5 kg CO ₂ type		Nos	25				
iv	4.5 kg Dry Chemical Power (DCP) type		Nos	5				
Q	Cables along with clamps, glands, lugs and straight joints etc.							
(a)	Power Cables - (1.1kV grade)							
i	3.5Cx300 sqmm (XLPE) cable for filter Machine along with termination arrangement as per TS		KM	1				
R	Air conditioning System for Control room cum administrative building, Township Quarters etc							
a	High wall type split AC unit of 2 TR capacity		Nos	35				
S	Fabrication, galvanising and supply of following Steel Structures including nuts, bolts, all types of washers, packplates, step bolts and gusset plates including foundation bolts.							
(a)	Lattice Structure including Foundation Bolts		MT	135				
(b)	Pipe Structure including Foundation Bolts .		MT	35				
(c)	Fastners and step bolts.(Nuts,Bolts & Washers)		MT	8				
T	Telecom Equipments							
A	SDH Equipment (STM-4 MADM upto 3 MSP protected directions)							

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

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportaion to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)
			Unit	Quantity	Currency	Unit Rate	Amount	FC
1	2	3	4	5	6	7	8=(5) x(7)	9=8
(i)	Base Equipment (Common cards, Cross Connect/control cards, optical base cards, power supply cards, power cabling, other hardware and accessories including sub racks, patch cord, DDF etc fully equiped excluding (ii) & (iii) below		Nos.	1				
(ii)	Optical Interface Cards/SFP#							
a	S4.1 SFP		Nos.	0				
b	L4.1 SFP		Nos.	4				
c	L4.2 SFP		Nos.	0				
(iii)	Tributary cards							
a	E1 Interface card (Min.16 interfaces per card)		Nos.	2				
b	Ethernet Interface 10/100 Base T with Layer-2 switching (Min 4 Interfaces per card)		Nos.	2				
B	Equipment Cabinets		No.	1				
2.0	Network Manager System - Craft Terminal							
a	Hardware		Set\$	1				
b	Software		Set\$	1				
3.0	VOIP telephone instrument with one common switch (min. 4 port)		Set\$	1				
a	Hardware with 2 nos of telephone							
b	Software							
U	PRE-ENGINEERED BUILDINGS							
	220 kV GIS Hall including all supply materials from abroad except civil works and for civil works refer schedule 4(a)							
(a)	220 kV GIS Hall		Sq. M.	800				
(b)	AHU / Panel Room		Sq. M.	200				
	132 kV GIS Hall and Panel Rooms including all supply materials from abroad except civil works and for civil works refer schedule 4(a)							
(a)	132 kV GIS Hall		Sq. M.	450				
(b)	AHU / Panel Room		Sq. M.	150				
	33 kV GIS Hall and Panel Rooms including all supply materials from abroad except civil works and for civil works refer schedule 4(a)							
(a)	33 kV GIS Hall		Sq. M.	150				

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

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportaion to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)
			Unit	Quantity	Currency	Unit Rate	Amount	FC
1	2	3	4	5	6	7	8=(5) x(7)	9=8
(b)	AHU / Panel Room		Sq. M.	50				
V	Misc. Structural steel including rails, embedments, edge protection angles, gratings etc. but excluding the reinforcement steel and steel for lattice and pipe structures.		MT	160				

Part-B: VENDOR ASSESSED QUANTITIES

A	Erection Hardware							
	Insulator strings, Disc Insulators, Hardware, conductor, Al tube, bus-bar materials, cable trays, clamps, spacers, connectors including equipment connectors, Junction box, earthwire, buried cable trenches/pipe equipment & lighting, all accessories etc. for the following:							
a	245kV GIS Termination Arrangement:							
i	Line Bay		Set	6				
ii	Transformer Bay (including 220 kV AIS connection for spare unit with GIS auxiliary bus module)		Set	1				
b	145kV GIS Termination Arrangement:							
i	Line Bay		Set	6				
ii	Transformer Bay (including 132 kV AIS connection for spare unit with GIS auxiliary bus module for 220/132 kV auto Transformer)		Set	1				
iii	Transformer Bay for 132/33 kV Transformer		Set	1				
c	For spare unit of 220/132/33 kV auto transformer connection through auxiliary buses (tertiary & Neutral auxiliary buses only), Neutral formation and delta formation (for one bank): Required 72.5 kV BPI for tertiary auxiliary bus & delta formation, 36 kV BPI for Neutral formation & Neutral auxiliary bus including Al tube, bus-bar materials, clamps, spacers, connectors, including equipment connectors, Earthing of spare unit as per technical specification, as applicable.		Set	1				
d	72.5kV LT Transformer connection		Set	1				
e	33kV LT Transformer connection		Set	1				
f	33kV Transformer bay		Set	1				
g	33kV Line bays		Set	6				
h	Earthing and lightning protection including necesaary connectors/connections, risers etc. complete in all respect(but excluding LM structures for Lightning protection)							

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

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportaion to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)
			Unit	Quantity	Currency	Unit Rate	Amount	FC
								9=8
1	2	3	4	5	6	7	8=(5) x(7)	9=8
i	Earth Conductor (copper)		LS	1				
ii	Earth Rod (copper clad steel)		LS	1				
iii	Equipment for lightning protection		LS	1				
B	Fire Protection System							
a	Pumping arrangement for Hydrant system, complete with all piping, valves, fittings,etc. inside pump house							
i	220/132kV (New) Substation		Set	1				
b	Hydrant system, complete U/G piping and accessories etc. outside the Pump House.							
i	220/132kV (New) Substation		Set	1				
c	Fire & Smoke detection and Alarm System							
(i)	Control room buiding		Set	1				
(ii)	220 kV GIS buiding		Set	1				
(iii)	132 kV GIS buiding		Set	1				
(iv)	33kV GIS buiding		Set	1				
(v)	Fire Fighting Pump House		Set	1				
C	Illumination System							
a	Control room cum administrative building illumination		LS	1				
b	Fire fighting building illumination		LS	1				
c	Switchyard lighting		LS	1				
d	Street lighting		LS	1				
e	Transit Camp illumination		LS	1				
f	245kV, 145 kV and 33 kV GIS Buildings including panel rooms		LS	1				
g	Township quarter (B-Type, 4 nos)		LS	1				
h	Township quarter (C-Type, 4 nos)		LS	1				
i	Township quarter (D-Type, 1 nos)		LS	1				
j	Car parkings		LS	1				
k	Recreation hall & Gym hall for staff community		LS	1				
l	Valley ball court		LS	1				
m	Badminton court		LS	1				
D	Air conditioning & ventilation System							
D.1	Air conditioning system							
(i)	Panel room in 245kV GIS Hall		LS	1				
(ii)	Panel room in 145kV GIS Hall		LS	1				
(iii)	Panel room in 36kV GIS Hall		LS	1				
D.2	Ventilation system							
(i)	245KV GIS hall		LS	1				

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

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportaion to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)
			Unit	Quantity	Currency	Unit Rate	Amount	FC
1	2	3	4	5	6	7	8=(5) x(7)	9=8
(ii)	145KV GIS hall		LS	1				
G	POWER & CONTROL CABLES							
b	Power Cables(PVC)- (1.1kV grade)		LS	1				
b	Power Cables (XLPE)(excluding 3.5Cx300 sqmm (XLPE) cable for filter Machine)- (1.1kV grade)		LS	1				
c	Control Cable (PVC)- (1.1kV grade)		LS	1				
d	Cable glands, lugs & straight through joints for Power & Control cables		LS	1				

Part-C: Mandatory Spares

(i)	Mandatory Spare List for Transformer							
(i)	For 33.33MVA , 220/132/33 KV, 1-phase Autotransformer							
a)	RIP Bushing of each rating with metal parts & gaskets and lifting tools		Set	1				
b)	Cooler fan with Motor		No.	1				
c)	Buchholz Relay(Main Tank) complete with floats and contacts		Set	1				
d)	Local and Remote WTI with sensing device and contact(each)		Set	1				
e)	Magnetic oil level gauge		No.	1				
f)	Strarters, contactors,switches & Relays for Electrical control panels(One ste of each type)		Set	1				
g)	Remote Tap postion Indiator		No.	1				
h)	Spare insulating oil to be handed over to Owner after commisioning for O&M requirement		KL	10				
(ii)	For 30 MVA , 132/33 KV, 3-phase transformer							
a)	RIP Bushing of each rating with metal parts & gaskets and lifting tools		Set	1				
b)	Cooler fan with Motor		No.	1				
c)	Buchholz Relay(Main Tank) complete with floats and contacts		Set	1				
d)	Local and Remote WTI with sensing device and contact(each)		Set	1				
e)	Magnetic oil level gauge		No.	1				
f)	Strarters, contactors,switches & Relays for Electrical control panels(One ste of each type)		Set	1				
g)	Remote Tap postion Indiator		No.	1				
(II)	SPARES FOR 245kV GIS							
A)	General							

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

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportaion to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)
			Unit	Quantity	Currency	Unit Rate	Amount	FC
								9=8
1	2	3	4	5	6	7	8=(5) x (7)	9=8
a.	Bus Bar Sections including Bus Bar Interconnection Modules, Bus Ducts Sections, Compensators/ expansion joints/bellows, Bends, end covers along with enclosure of each type. For each of the above module/enclosure all active parts such as conductor, conductor joints, corona shield etc of each type.		Set	1				
b.	SF6 gas Pressure Relief Device assembly of each type		Set	1				
c.	SF6 Pressure gauge cum switch / Density monitors and pressure switch as applicable, of each type		Set	5				
d.	Coupling device for pressure gauge cum switch for connecting Gas handling plant of each type		Set	2				
e.	Rubber Gaskets, "O" Rings and Seals for SF6 gas of each type		Set	5				
f.	Molecular filter for SF6 gas with filter bags (10 % of total weight)		Set	1				
g.	Control Valves for SF6 gas of each type		Set	3				
h.	SF6 gas (20 % of total gas quantity)		Set	1				
i.	Pipe length (Copper or Steel as applicable) for SF6 Circuit of each type (if applicable)		Set	2				
j.	Locking device to keep the Dis-connectors (Isolators) and Earthing/Fast Earthing switches in close or open position in case of removal of the driving Mechanism		set	2				
k.	UHF PD Sensors of each type along with BNC Connector		Nos.	5				
l.	Support Insulators of each type		Set.	10				
m.	Gas Barriers of each type		Set	1				
n.	SF6 to air bushing of each type & rating complete in all respect		Set	2				
B)	245 KV SF6 CIRCUIT BREAKER:							
a.	Complete (3-Ph or 3X1-phase, as applicable)Circuit Breaker without PIR complete with interrupter, main circuit, enclosure and Marshalling Box with operating mechanism to enable replacement of all applicable type/rating of CB by spare .		Nos.	1				
b.	Rubber gaskets, 'O' rings and seals for SF6 gas (1 No. of each type)		Sets	1				
c.	Trip coil assembly with resistor as applicable		Sets	1				
d.	Closing coil assembly with resistor as applicable .		Sets	1				
e.	Relays, Power contactors, push buttons, timers & MCBs etc (1 No. of each type & rating)		Sets	1				
f.	Closing coil assembly (including valve, if applicable)		Sets	1				

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

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportaion to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)
			Unit	Quantity	Currency	Unit Rate	Amount	FC
1	2	3	4	5	6	7	8=(5) x(7)	9=8
g.	Trip coil assembly (including valve, if applicable)		Sets	1				
h.	Auxiliary switch assembly of each type		Sets	1				
C)	245 KV ISOLATORS :							
a.	Complete set of 3-phase dis-connector of each type including main circuit, enclosure, driving mechanism and support Insulator etc to enable complete replacement of all applicable type/rating of Isolator by spare		Sets	1				
b.	Single Phase/ 3-phase Earthing switch including main circuit, enclosure, driving mechanism.		Sets	1				
c.	Copper contact fingers for dis-connector male & female contact for one complete (3-phase) dis-connector of each type and rating		Sets	1				
d.	Copper contact fingers for earthing switch male & female contacts, for one complete(3-phase) earthing switch of each type and rating		Sets	1				
e.	Open / Close contactor assembly, timers, key interlock for one complete (3 phase) dis-connector and (3 phase) earthing switch (1 No. of each type and rating)		Sets	1				
f.	Push button switch - (1 No. of each type & rating) as applicable		Sets	1				
g.	Limit switch and Aux. Switches for complete 3 phase equipment							
g.1	For isolator		Sets	1				
g.2	For earth switch		Sets	1				
D)	245 KV CURRENT TRANSFORMER							
a.	Gas insulated complete CT of each type and rating with enclosure.		Nos.	1				
b.	Secondary bushing of each type		Sets	1				
E)	245 kV VOLTAGE TRANSFORMER							
a.	Gas insulated complete PT of each type and rating with enclosure.		Nos.	1				
(III)	SPARES FOR 145kV GIS							
A)	General							

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

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportaion to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)
			Unit	Quantity	Currency	Unit Rate	Amount	FC
1	2	3	4	5	6	7	8=(5) x(7)	9=8
a.	Bus Bar Sections including Bus Bar Interconnection Modules, Bus Ducts Sections, Compensators/ expansion joints/bellows, Bends, end covers along with enclosure of each type. For each of the above module/enclosure all active parts such as conductor, conductor joints, corona shield etc of each type.		Set	1				
b.	SF6 gas Pressure Relief Device assembly of each type		Set	1				
c.	SF6 Pressure gauge cum switch / Density monitors and pressure switch as applicable, of each type		Set	5				
d.	Coupling device for pressure gauge cum switch for connecting Gas handling plant of each type		Set	2				
e.	Rubber Gaskets, "O" Rings and Seals for SF6 gas of each type		Set	5				
f.	Molecular filter for SF6 gas with filter bags (10 % of total weight)		Set	1				
g.	Control Valves for SF6 gas of each type		Set	3				
h.	SF6 gas (20 % of total gas quantity)		Set	1				
i.	Pipe length (Copper or Steel as applicable) for SF6 Circuit of each type (if applicable)		Set	2				
j.	Locking device to keep the Dis-connectors (Isolators) and Earthing/Fast Earthing switches in close or open position in case of removal of the driving Mechanism		set	2				
k.	UHF PD Sensors of each type along with BNC Connector		Nos.	5				
l.	Support Insulators of each type		Set.	10				
m.	Gas Barriers of each type		Set	1				
n.	SF6 to air bushing of each type & rating complete in all respect		Set	2				
B)	145 KV SF6 CIRCUIT BREAKER:							
a.	Complete (3-Ph or 3X1-phase, as applicable)Circuit Breaker without PIR complete with interrupter, main circuit, enclosure and Marshalling Box with operating mechanism to enable replacement of all applicable type/rating of CB by spare .		Nos.	1				
b.	Rubber gaskets, 'O' rings and seals for SF6 gas (1 No. of each type)		Sets	1				
c.	Trip coil assembly with resistor as applicable		Sets	1				
d.	Relays, Power contactors, push buttons, timers & MCBs etc (1 No. of each type & rating)		Sets	1				
e.	Relays, Power contactors, push buttons, timers & MCBs etc (1 No. of each type & rating)		Sets	1				

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

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportaion to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)
			Unit	Quantity	Currency	Unit Rate	Amount	FC
								9=8
1	2	3	4	5	6	7	8=(5) x(7)	9=8
f.	Closing coil assembly (including valve, if applicable)		Sets	1				
g.	Trip coil assembly (including valve, if applicable)		Sets	1				
h.	Auxiliary switch assembly of each type		Sets	1				
C)	145 KV ISOLATORS :							
a.	Complete set of 3-phase dis-connector of each type including main circuit, enclosure, driving mechanism and support Insulator etc to enable complete replacement of all applicable type/rating of Isolator by spare		Sets	1				
b.	Single Phase/ 3-phase Earthing switch including main circuit, enclosure, driving mechanism.		Sets	1				
c.	Copper contact fingers for dis-connector male & female contact for one complete (3-phase) dis-connector of each type and rating		Sets	1				
d.	Copper contact fingers for earthing switch male & female contacts, for one complete(3-phase) earthing switch of each type and rating		Sets	1				
e.	Open / Close contactor assembly, timers, key interlock for one complete (3 phase) dis-connector and (3 phase) earthing switch (1 No. of each type and rating)		Sets	1				
f.	Push button switch - (1 No. of each type & rating) as applicable		Sets	1				
g.	Limit switch and Aux. Switches for complete 3 phase equipment							
g.1	For isolator		Sets	1				
g.2	For earth switch		Sets	1				
D)	145 KV CURRENT TRANSFORMER							
a.	Gas insulated complete CT of each type and rating with enclosure.		Nos.	1				
b.	Secondary bushing of each type		Sets	1				
E)	145 kV VOLTAGE TRANSFORMER							
a.	Gas insulated complete PT of each type and rating with enclosure.		Nos.	1				
(IV)	SPARES FOR 36kV GIS							
i)	General							
a.	SF6 gas Pressure Relief Devices, 1Nos. of each type		Set	1				

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

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportaion to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)
			Unit	Quantity	Currency	Unit Rate	Amount	FC
								9=8
1	2	3	4	5	6	7	8=(5) x(7)	9=8
b.	SF6 Pressure gauge cum switch OR Density monitors and pressure switch as applicable (1 no. of each type)		Set	1				
c.	Coupling device for pressure gauge cum switch for connecting Gas handling plant		Set	1				
d.	Rubber Gaskets, "O" Rings and Seals for SF6 gas of each type		Set	1				
e.	Molecular filter for SF6 gas with filter bags(20% of total weight)		Set	1				
f.	All types of Control Valves for SF6 gas of each type		Set	1				
g.	SF6 gas (20 % of total gas quantity)		Set	1				
h.	All types of coupling for SF6 gas (1 no. of each type)		Set	1				
i.	Pipe length (Copper or Steel as applicable) for SF6 Circuit of each type		Set	1				
j.	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							
k.	For 3 Phase Enclosure if applicable		Nos.	1				
l.	For Single phase enclosure if applicable		Nos.	1				
m.	Locking device to keep the Dis-connectors (Isolators) and Earthing switches in close or open position in case of removal of the driving Mechanism		Sets	1				
n.	Bus Support insulator of each type for 3 phase/single phase enclosure.		Nos.	1				
ii)	36 KV SF6 CIRCUIT BREAKER:							
a.	Complete Circuit Breaker pole of each type & rating complete with interrupter, main circuit enclosure and Marshalling Box with operating mechanism		Nos.	1				
b.	Rubber gaskets, 'O' rings and seals for SF6 gas (1 No. of each type)		Sets	1				
c.	Trip coil assembly with resistor as applicable		Sets	1				
d.	Closing coil assembly with resistor as applicable .		Sets	1				
e.	Relays, Power contactors, push buttons, timers & MCBs etc (1 No. of each type & rating)		Sets	1				
f.	Closing coil assembly (including valve, if applicable)		Sets	1				
g.	Trip coil assembly (including valve, if applicable)		Sets	1				
h.	Auxiliary switch assembly of each type		Sets	1				
iii)	36KV ISOLATORS :							
a.	Complete set of 3-phase dis-connector including main circuit, enclosure, driving mechanism		Sets	1				

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

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportaion to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)
			Unit	Quantity	Currency	Unit Rate	Amount	FC
								9=8
1	2	3	4	5	6	7	8=(5) x (7)	9=8
b.	Single Phase/ 3-phase Earthing switch including main circuit, enclosure, driving mechanism.		Sets	1				
c.	Copper contact fingers for dis-connector male & female contact for one complete (3-phase) dis-connector of each type and rating		Sets	1				
d.	Copper contact fingers for earthing switch male & female contacts, for one complete(3-phase) earthing switch of each type and rating		Sets	1				
e.	Open / Close contactor assembly, timers, key interlock for one complete (3 phase) dis-connector and (3 phase) earthing switch (1 No. of each type and rating)		Sets	1				
f.	Push button switch - (1 No. of each type & rating) as applicable		Sets	1				
g.	Limit switch and Aux. Switches for complete 3 phase equipment							
g.1	For isolator		Sets	1				
g.2	For earth switch		Sets	1				
iv)	36 KV CURRENT TRANSFORMER							
a.	Gas insulated complete CT of each type and rating with enclosure.		Nos.	1				
b.	Secondary bushing of each type		Sets	1				
v)	36 KV VOLTAGE TRANSFORMER							
a.	Gas insulated complete PT of each type and rating with enclosure.		Nos.	1				
(V)	SPARES FOR AIS EQUIPMENTS							
(A)	72.5 kV CB							
i)	Complete Pole of circuit breaker including pole column, interrupter, with driving mechanism and Marshaling Box but without support structure for							
	1250A, 31.5 KA (No. of Pole)		No.	1				
ii)	Rubber gaskets, 'O' rings and seals (for complete replacement of one pole of CB)		Set	1				
iii)	Trip coils with resistor		Nos.	2				
iv)	Closing coils with resistor		Nos.	1				
v)	Terminal Pads & connectors		Nos.	2				
vi)	Molecular filter		Nos.	2				

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

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportaion to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)
			Unit	Quantity	Currency	Unit Rate	Amount	FC
1	2	3	4	5	6	7	8=(5) x(7)	9=8
vii)	Relays, Power contactors, switch fuse units, limit switches, push buttons, timers & MCB etc. (1 no. of each type)		Set	1				
viii)	Pressure switches / Density monitor (1 no. of each type)		Set	1				
ix)	Auxiliary switch assembly (for one pole of CB)		Set	1				
(B)	72.5kV Isolator							
i)	One complete pole including support Insulator, MANUAL operating mechanism with box but excluding structure							
	1250A, 31.5KA, 1 E/S (no. of pole)		No.	1				
ii)	Copper contact fingers for male & female contacts (for one pole of Isolator)		Set	2				
iii)	Open/Close contactor assembly, timers, key interlock push button switch & auxilliary switches (for one pole of Isolator)		Set	1				
iv)	Limit Switch		Nos.	2				
v)	Terminal Pads & Connectors		Nos.	3				
(F)	CT(72.5 kV,1250A with 120% extended current rating)		No.	1				
(I)	72.5kV PT		No.	1				
(J)	216 SA							
i)	Complete LA		No.	1				
ii)	Surge counter/monitor		Nos.	5				
(F)	120kV SA							
i)	Complete LA		No.	1				
ii)	Surge counter/monitor		Nos.	5				
(G)	C&R PANELS							
i)	Transformer protection panel :							
a)	Transformer differential protection		No.	1				
b)	REF protection relay with non-linear resistor		No.	1				
c)	Directional over current & E/F Protection Relay		No.	1				
ii)	Line protection panel :							
a)	Distance Protection relay- Main-1		No.	1				
b)	Current differential Protection relay- Main-2		No.	1				
iv)	Breaker Relay panel:							
a)	Breaker failure relay		No.	1				
b)	Trip circuit supervision relay		Nos.	2				
c)	Self reset trip relay (relay of each type)		Set	1				
d)	Hand reset trip relay(relay of each type)		Set	1				
e)	Timer relay(relay of each type)		Set	1				
f)	DC supervision relay(relay of each type)		Set	1				

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

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportaion to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)
			Unit	Quantity	Currency	Unit Rate	Amount	FC
								9=8
1	2	3	4	5	6	7	8=(5) x(7)	9=8
g)	Flag relays(relay of each type)		Set	1				
h)	Auxiliary relays(relay of each type)		Set	1				
(H)	Teleprotection Equipments							
ii)	Set of prints for protection coupler(digital)		Set	1				
(I)	SAS							
i)	Bay Control Unit (IED) of each type		Set	1				
ii)	Ethernet Switch of each type		Set	1				
(J)	BATTERY CHARGER							
J1	220 Volt							
i)	Set of control cards		Set	1				
ii)	Set of relays		Set	1				
iii)	Rectifier transformer		No.	1				
iv)	Thyristor/diode		Set	1				
v)	Fuses of Thyristor with indicators		Set	6				
J2	48 Volt							
i)	Set of control cards		Set	1				
ii)	Set of relays		Set	1				
iii)	Rectifier transformer		No.	1				
iv)	Thyristor/diode		Set	1				
v)	Fuses of Thyristor with indicators		Set	6				
K.	Fire protection System							
a.	Deluge Valve of each type		Set	1				
L.	DG SETS :							
a.	Self starter assembly		No.	1				
b.	AVR (Auto Voltage Regulator)/ AVR card		set	1				
(M)	COMMON SPARES							
i)	Bay unit Module		No.	1				
ii)	2 wire local subscriber interface card for PABX		No.	1				
iii)	E1 Interface card for PABX		No.	1				
1.0	SDH Equipment (STM-4 MADM upto 3 MSP protected directions)							
(i)	Common cards, Cross-connect/control cards, Optical base card, Power supply cards, power cabling, other hardware & accessories (each).		Set	1				

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

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportaion to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)
			Unit	Quantity	Currency	Unit Rate	Amount	FC
1	2	3	4	5	6	7	8=(5) x(7)	9=8
(ii)	Optical Interface Cards/SFP#							
a	S4.1 SFP		Nos.	0				
b	L4.1 SFP		Nos.	1				
c	L4.2 SFP		Nos.	0				
(iii)	Tributary cards							
a	E1 Interface card (Min.16 interfaces)		Nos.	1				
b	Ethernet Interface 10/100 Base T with Layer-2 switching (Min 4 Interfaces per card)		Nos.	1				
2.0	VOIP telephone instrument		Nos.	1				
3.0	Pre Connectorized Optical Fiber Patch Cords(10 Mtrs) – Pack of six Patch cords		Set	1				
Total of Part A+Part B + Part C for Manang Substation (Total of column 9 to be carried forward to Schedule No. 1 (Total))								

Name of Bidder:

Signature of Bidder:

(Printed Name)

(Designation)

(Common Seal)

NEPAL ELECTRICITY AUTHORITY
PROJECT MANAGEMENT DIRECTORATE
MARSYANGDI CORRIDOR 220 kV TRANSMISSION LINE PROJECT

(I) 220/132/33kV Manang (new) GIS Substation and (II)220/132/33kV Khudi (new) GIS Substation

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

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportaion to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)
			Unit	Quantity	Currency	Unit Rate	Amount	FC
1	2	3	4	5	6	7	8=(5) x(7)	9=8
Part-A : EMPLOYER ASSESSED QUANTITIES								
A.1	POWER TRANSFORMER							
A1.1	POWER TRANSFORMER							
a)	53.33MVA , 220/132/33 KV, 1-phase Autotransformer (Excluding insulating oil) with RIP Bushing as per TS		Nos.	4				
b)	Insulating oil for 53.33MVA , 220/132/33 KV, 1-phase Autotransformer (1Lot = Oil for 1Autotransformers)		Lot	4				
c)	33kV Current transformer (NCT) for autotrasnformer		No	1				
d)	Nitrogen Injection type Fire Protection sysytem including underground oil tank		Set	4				
A1.2	POWER TRANSFORMER							
a)	50MVA , 132/33 KV, 3-phase transformer (Excluding insulating oil) with RIP Bushing as per TS		Nos.	1				
b)	Insulating oil for 50MVA , 132/33 KV, 3-phase transformer (1Lot = Oil for 1Autotransformers)		Lot	1				
c)	Nitrogen Injection type Fire Protection sysytem including underground oil tank		Set	1				
A1.3	Testing & Maintenance Equipments							
a)	Oil Storage Tank (10KL size)		No.	1				
b)	Transformer Oil Filtration plant (6KLPH)		No	1				
A2	LT TRANSFORMER							
1.0	630 kVA,33/0.400kV		Nos	2				
B	245 kV equipment							
B1	245KV GIS Equipment							

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

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportaion to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)
			Unit	Quantity	Currency	Unit Rate	Amount	FC
1	2	3	4	5	6	7	8=(5) x(7)	9=8
1.01	245kV, SF6 GIS Bus Bars Module [Module description as per Technical specification]		Set	2				
1.02	245kV, SF6 GIS ICT bay Module [Module description as per Technical specification]		Set	2				
1.03	245kV, 1600Amp, SF6 GIS Line bay Module [Module description as per Technical specification]		Set	6				
1.04	245kV, 2400 Amps SF6 GIS Line bay Module [Module description as per Technical specification]		Set	2				
1.05	245kV, SF6 GIS Bus coupler bay Module [Module description as per Technical specification]		Set	1				
1.06	245 kV Auxiliary Bus to connect spare unit of Transformer [Module description as per Technical specification]		Set	1				
1.07	245kV, 1600A,40kA SF6/Air Bushing for Connecting GIS to AIS alongwith support structure (Single Phase)		Nos	22				
1.08	245kV, 2400A,40kA SF6/Air Bushing for Connecting GIS to AIS alongwith support structure (Single Phase)		Nos	6				
1.09	245kV, 1600A, 1phase SF6 GIS Bus duct alongwith support structure		Mtr	1500				
1.10	245kV, 2400A, 1phase SF6 GIS Bus duct alongwith support structure		Mtr	200				
B2	245KV Outdoor Equipment							
1.1	216 KV Surge Arrester (1-phase)		Nos.	31				
1.2	245kV BPI		Nos.	50				
C	145KV Equipment							
C1	145KV GIS Equipment							
1.01	145kV, SF6 GIS Bus Bars Module [Module description as per Technical specification]		Set	2				
1.02	145kV, SF6 GIS Transformer bay Module [Module description as per Technical specification for 220/132kV ICT]		Set	2				

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

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportaion to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)
			Unit	Quantity	Currency	Unit Rate	Amount	FC
1	2	3	4	5	6	7	8=(5) x(7)	9=8
1.03	145kV, SF6 GIS Transformer bay Module [Module description as per Technical specification for 132/33kV ICT]		Set	1				
1.04	145kV, SF6 GIS Line bay Module [Module description as per Technical specification]		Set	6				
1.05	145kV, SF6 GIS Bus Coupler bay Module [Module description as per Technical specification]		Set	1				
1.06	145 kV Auxiliary Bus to connect spare unit of Transformer [Module description as per Technical specification]		Set	1				
C2	145KV Outdoor Equipment							
1.1	120KV Surge Arrester (1-phase)		Nos.	28				
1.2	145kV BPI		Nos.	30				
C3	132 kV Cu condctor, XLPE cable and accessories							
1.1	132 kV, 1C x 1200 sq.mm Copper, XLPE cable as per Technical specification		Mtr	1500				
1.2	132 kV, 1C x 500 sq.mm Copper, XLPE cable as per Technical specification		Mtr	600				
1.3	132 kV, 1C x 300 sq.mm Copper, XLPE cable as per Technical specification		Mtr	300				
1.4	132 KV Termination kit suitable for 132KV, 1CX 1200 sq.mm XLPE Cable alongwith with support Structure for EHV Cable		Nos	18				
1.5	132 KV Termination kit suitable for 132KV, 1CX 500 sq.mm XLPE Cable alongwith with support Structure for EHV Cable		Nos	7				
1.6	132 KV Termination kit suitable for 132KV, 1CX300 sq.mm XLPE Cable alongwith with support Structure for EHV Cable		Nos	3				
D1	36KV GIS Equipment							
1.01	Indoor switchgear panels (GIS type) IP1 type		Set	1				
1.02	Indoor Switchgear Panels (GIS type) IP 2 type		Set	8				
1.03	Indoor switchgear panels (GIS type) IP3 type		Set	1				
1.04	Indoor switchgear panels (GIS type) IP4 Type		Set	1				

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Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportaion to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)
			Unit	Quantity	Currency	Unit Rate	Amount	
1	2	3	4	5	6	7	8=(5) x(7)	9=8
D2	36kV XLPE cable and its termination for connection of 33 kV side of 132/33 kV Transformer to 36kV GIS bay and line bays							
(i)	33kV, 1C x 400 sq.mm Copper, XLPE cable as per Technical specification		Mtr	2500				
(ii)	33KV Termination kit suitable for 1C x 400 sq.mm Copper, XLPE cable alongwith with support Structure		Nos	36				
D3	36 KV XLPE 1-Ph cable and its termination for connection of 33 kV side of 630 kVA, 33/0.400KV LT Transformer from available HT external supply							
(i)	36 KV XLPE 3C, 120sqmm Copper, XLPE cable as per Technical Specification		Mtr	500				
(ii)	33KV, 3 Phase Termination kit suitable for above 120 sqmm Copper cable, Sets for all three phase		Set	3				
D4	36 kV Equipment for LT Transformer							
1.0	36 kV Isolator (3-phase)-HDB							
(i)	1250A, 25 KA, Isolator		No	10				
2.0	30 kV Surge Arrestors (1-Phase)		Nos	30				
3.0	36kV Horn Gap Fuse (3-Phase)		No	1				
4.0	36 kV BPI		Nos	36				
E	Testing & Maintenance Equipment for GIS							
(i)	SF6 Gas filling & evacuating plant							
	For 245kV, 145kV & 36kV GIS		Set	1				
(ii)	Partial Discharge Monitoring System for GIS as per Technical Specification							
(a)	For 245kV GIS		Set	1				
(b)	For 145kV GIS		Set	1				
(c)	For 36kV GIS		Set	1				
(iii)	Dew Point meter							
	For 245kV, 145kV & 36kV GIS		Set	1				
(iv)	SF6 Gas Leak Detector							

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

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			Unit	Quantity	Currency	Unit Rate	Amount	FC
1	2	3	4	5	6	7	8=(5) x(7)	9=8
	For 245kV, 145kV & 36kV GIS		Set	1				
(v)	EOT crane for 245kV GIS Hall		Set	1				
(vi)	EOT crane for 145kV GIS Hall		Set	1				
(vii)	SF6 Gas Analyser		Set	1				
F	72.5kV EQUIPMENT							
1.1	72.5 kV, 1250A, 31.5kA Circuit Breaker (3-phase) with support structure		No.	1				
1.2	72.5 kV, 1250A,31.5kA Isolators with earth switch (3-phase, DBR type)		No.	1				
1.3	72.5kV, 1250A, 31.5 kA with 120% extended rating CT.		Nos.	3				
1.4	72.5kV PT.(1-phase)		Nos.	3				
1.5	72.5 kV BPI (1-phase)		Nos.	6				
G	RELAY PANELS (WITH AUTOMATION)							
1.0	220 kV							
a	Circuit Breaker Relay Panel							
i	With Auto Reclose		Set	8				
ii	With out Auto Reclose		Set	3				
b	Line Protection Panel							
i	For 220 kV lines (in which current differential relay will be supplied from other contract)		Set	2				
ii	For 220 kV lines		Set	6				
d	Transformer Protection Panel (For both HV & MV side for 220/132kV ICT)		Set	1				
e	Bus Bar Protection Panel		Set	1				
2.0	132 kV							
a	Circuit Breaker Relay Panel							
i)	With out Auto Reclose		Set	10				
b	Line Protection Panel		Set	6				
c	Transformer Protection Panel (For both HV & MV side for 132/33kV ICT)		Set	1				
d	Bus Bar Protection Panel		Set	1				

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

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			Unit	Quantity	Currency	Unit Rate	Amount	FC
1	2	3	4	5	6	7	8=(5) x(7)	9=8
H	COMMON EQUIPMENTS							
1.0	Relay Test tool kit		Set	1				
2.0	Time synchronisation equipment		No.	1				
J	SUBSTATION AUTOMATION							
J.1	Complete Substation Automation System (SAS) for substation including hardware and software for the substation & remote control stations alongwith associated equipments for the following bays as per Technical Specification							
a	Main bays to be automated							
i	220 kV system		Bay Nos	11				
ii	132 kV system		Bay Nos	10				
iii	33 kV system		Bay Nos	12				
iv)	BCU for controlling & monitoring of Auxilary System		Set	1				
K	Teleprotection & communication Equipments							
i)	Digital Protection Coupler 220 kV & 132 kV)		Set	14				
ii)	Digital Protection Coupler(for other end)		Nos	26				
iii)	PBAX with following configuration as per TS		Set	1				
a)	2 wire subscriber interface card with capacity 32 local subscribers (along with 32 nos. Instruments)							
b)	4 wire E & M interface card with capacity 8 nos. trunks (For PLCC)							
c)	E-1 interface with 2 trunks G-703							
d)	2 wire interface with 1 trunk (For PSTN)							
iv)	Testing & Maintenance equipment (print test kit only)		Set	1				
v)	4 wire telephone equipment		No	1				
L	LT Switchgear (As per Technical specification)							
a	415V Main switchboard		Set	1				
b	415V ACDB		Set	1				
c	415V MLDB		Set	1				

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			Unit	Quantity	Currency	Unit Rate	Amount	FC
1	2	3	4	5	6	7	8=(5) x(7)	9=8
d	415V Emergency LDB		Set	1				
e	220V DCDB		Sets	2				
f	48 V DCDB		Sets	2				
M	Batteries							
a	220V							
i	600 AH		Nos	2				
b	48V							
i	600 AH		Nos	2				
N	Float Cum Boost Battery Charger							
a	220V Float Cum Boost Battery Charger							
i	80A/80A		Nos	2				
b	48V Float Cum Boost Battery Charger							
ii	80A/80A		Nos	2				
O	Silent Type Diesel Generator with control Panel							
a	250 kVA		Set	1				
P	Fire Protection System							
a	Portable /Trolley/Wheel mounted extinguishers							
i	9 litre water type		Nos	5				
ii	50 litre foam type		Nos	2				
iii	4.5 kg CO ₂ type		Nos	25				
iv	4.5 kg Dry Chemical Power (DCP) type		Nos	5				
Q	Cables along with clamps, glands, lugs and straight joints etc.							
(a)	Power Cables - (1.1kV grade)							
i	3.5Cx300 sqmm (XLPE) cable for filter Machine along with termination arrangement as per TS		KM	1				
R	Air conditioning System for Control room cum administrative building, Township Quarters etc							

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

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			Unit	Quantity	Currency	Unit Rate	Amount	FC
1	2	3	4	5	6	7	8=(5) x(7)	9=8
a	High wall type split AC unit of 2 TR capacity		Nos	35				
S	Fabrication, galvanising and supply of following Steel Structures including nuts, bolts, all types of washers, packplates, step bolts and gusset plates including foundation bolts.							
(a)	Lattice Structure including Foundation Bolts		MT	155				
(b)	Pipe Structure including Foundation Bolts .		MT	50				
(c)	Fastners and step bolts.(Nuts,Bolts & Washers)		MT	10				
T	Telecom Equipments							
A	SDH Equipment (STM-4 MADM upto 3 MSP protected directions)							
(i)	Base Equipment (Common cards, Cross Connect/control cards, optical base cards, power supply cards, power cabling, other hardware and accessories including sub racks, patch cord, DDF etc fully equiped excluding (ii) & (iii) below		Nos.	1				
(ii)	Optical Interface Cards/SFP#							
a	S4.1 SFP		Nos.	2				
b	L4.1 SFP		Nos.	3				
c	L4.2 SFP		Nos.	0				
(iii)	Tributary cards							
a	E1 Interface card (Min.16 interfaces per card)		Nos.	2				
b	Ethernet Interface 10/100 Base T with Layer-2 switching (Min 4 Interfaces per card)		Nos.	2				
B	Equipment Cabinets		No.	1				
2.0	Network Manager System - Craft Terminal							
a	Hardware		Set\$	1				
b	Software		Set\$	1				
3.0	VOIP telephone instrument with one common switch (min. 4 port)							

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			Unit	Quantity	Currency	Unit Rate	Amount	FC
1	2	3	4	5	6	7	8=(5) x(7)	9=8
a	Hardware with 2 nos of telephone		Set\$	1				
b	Software		Set\$	1				
U	PRE-ENGINEERED BUILDINGS							
	220 kV GIS Hall including all supply materials from abroad except civil works and for civil works refer schedule 4(a)							
(a)	220 kV GIS Hall		Sq. M.	900				
(b)	AHU / Panel Room		Sq. M.	240				
	132 kV GIS Hall and Panel Rooms including all supply materials from abroad except civil works and for civil works refer schedule 4(a)							
(a)	132 kV GIS Hall		Sq. M.	450				
(b)	AHU / Panel Room		Sq. M.	150				
	33 kV GIS Hall and Panel Rooms including all supply materials from abroad except civil works and for civil works refer schedule 4(a)							
(a)	33 kV GIS Hall		Sq. M.	150				
(b)	AHU / Panel Room		Sq. M.	50				
V	Misc. Structural steel including rails, embedments, edge protection angles, gratings etc. but excluding the reinforcement steel and steel for lattice and pipe structures.		MT	215				
W	Other Items							
(a)	All terrain mobile crane with lifting capacity (220-250) Ton with complete accessories for intended as per TS		no	1				
(b)	Magnetic Field measurement equipment with max range upto 200 micro Tesla suitable for the measurement of Magnetic field at ROW of Line		no	1				
c)	Electric field measurement equipment with max range upto 20 kV/mtr suitable for the measurement of Electric field at ROW of Line		no	1				

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			Unit	Quantity	Currency	Unit Rate	Amount	FC
1	2	3	4	5	6	7	8=(5) x(7)	9=8
Part-B: VENDOR ASSESSED QUANTITIES								
A	Erection Hardware							
	Insulator strings, Disc Insulators, Hardware, HTLS conductor & ACSR Conductor, Al tube, bus-bar materials, cable trays, clamps, spacers, connectors including equipment connectors, Junction box, earthwire, buried cable trenches/pipe equipment & lighting, all accessories etc. for the following:							
a	245kV GIS Termination Arrangement:							
i	Line Bay		Set	8				
ii	Transformer Bay (including 220 kV AIS connection for spare unit with GIS auxiliary bus module)		Set	1				
b	145kV GIS Termination Arrangement:							
i	Line Bay		Set	6				
ii	Transformer Bay (including 132 kV AIS connection for spare unit with GIS auxiliary bus module for 220/132 kV auto Transformer)		Set	1				
iii	Transformer Bay for 132/33 kV Transformer		Set	1				
c	For spare unit of 220/132/36 kV auto transformer connection through auxiliary buses (tertiary & Neutral auxiliary buses only), Neutral formation and delta formation (for one bank): Required 72.5 kV BPI for tertiary auxiliary bus & delta formation, 36 kV BPI for Neutral formation & Neutral auxiliary bus including Al tube, bus-bar materials, clamps, spacers, connectors, including equipment connectors, support structures , Earthing of spare unit as per technical specification.		Set	1				
d	72.5kV LT Transformer connection		Set	1				
e	33kV LT Transformer connection		Set	1				
f	33kV Transformer bay		Set	1				
g	33kV Line bays		Set	8				

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			Unit	Quantity	Currency	Unit Rate	Amount	FC
1	2	3	4	5	6	7	8=(5) x(7)	9=8
h	Earthing and lightning protection including necesaary connectors/connections, risers etc. complete in all respect(but excluding LM structures for Lightning protection)							
i	Earth Conductor (copper)		LS	1				
ii	Earth Rod (copper clad steel)		LS	1				
iii	Equipment for lightning protection		LS	1				
B	Fire Protection System							
a	Pumping arrangement for Hydrant system, complete with all piping, valves, fittings,etc. inside pump house							
i	220/132kV (New) Substation		Set	1				
b	Hydrant system, complete U/G piping and accessories etc. outside the Pump House.							
i	220/132kV (New) Substation		Set	1				
c	Fire & Smoke detection and Alarm System							
(i)	Control room buiding		Set	1				
(ii)	220 kV GIS buiding		Set	1				
(iii)	132 kV GIS buiding		Set	1				
(iv)	33kV GIS buiding		Set	1				
(v)	Fire Fighting Pump House		Set	1				
C	Illumination System							
a	Control room cum administrative building illumination		LS	1				
b	Fire fighting building illumination		LS	1				
c	Switchyard lighting		LS	1				
d	Street lighting		LS	1				
e	Transit Camp illumination		LS	1				
f	245kV, 145 kV and 33 kV GIS Buildings including panel rooms		LS	1				
g	Township quarter (B-Type, 4 nos)		LS	1				
h	Township quarter (C-Type, 4 nos)		LS	1				
i	Township quarter (D-Type, 1 nos)		LS	1				
j	Car parkings		LS	1				
k	Recreation hall & Gym hall for staff community		LS	1				

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			Unit	Quantity	Currency	Unit Rate	Amount	FC
1	2	3	4	5	6	7	8=(5) x(7)	9=8
l	Valley ball court		LS	1				
m	Badminton court		LS	1				
D	Air conditioning & ventilation System							
D.1	Air conditioning system							
(i)	Panel room in 245kV GIS Hall		LS	1				
(ii)	Panel room in 145kV GIS Hall		LS	1				
(iii)	Panel room in 36kV GIS Hall		LS	1				
D.2	Ventilation system							
(i)	245KV GIS hall		LS	1				
(ii)	145KV GIS hall		LS	1				
G	POWER & CONTROL CABLES							
a	Power Cables(PVC)- (1.1kV grade)		LS	1				
b	Power Cables (XLPE)(excluding 3.5Cx300 sqmm (XLPE) cable for filter Machine)- (1.1kV grade)		LS	1				
c	Control Cable (PVC)- (1.1kV grade)		LS	1				
d	Cable glands, lugs & straight through joints for Power & Control cables		LS	1				

Part-C: Mandatory Spares

(l)	Mandatory Spare List for Transformer							
(i)	For 53.33MVA , 220/132/33 KV, 1-phase Autotransformer							
a)	RIP Bushing of each rating with metal parts & gaskets and lifting tools		Set	1				
b)	Cooler fan with Motor		No.	1				
c)	Buchholz Relay(Main Tank) complete with floats and contacts		Set	1				
d)	Local and Remote WTI with sensing device and contact(each)		Set	1				
e)	Magnetic oil level gauge		No.	1				
f)	Strarters, contactors,switches & Relays for Electrical control panels(One ste of each type)		Set	1				
g)	Remote Tap postion Indiactor		No.	1				

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			Unit	Quantity	Currency	Unit Rate	Amount	FC
1	2	3	4	5	6	7	8=(5) x(7)	9=8
h)	Spare insulating oil to be handed over to Owner after commisioning for O&M requirement		KL	10				
(ii)	For 50MVA , 132/33 KV, 3-phase transformer							
a)	RIP Bushing of each rating with metal parts & gaskets and lifting tools		Set	1				
b)	Cooler fan with Motor		No.	1				
c)	Buchholz Relay(Main Tank) complete with floats and contacts		Set	1				
d)	Local and Remote WTI with sensing device and contact(each)		Set	1				
e)	Magnetic oil level gauge		No.	1				
f)	Strarters, contactors,switches & Relays for Electrical control panels(One ste of each type)		Set	1				
g)	Remote Tap postion Indiactor		No.	1				
(II)	SPARES FOR 245kV GIS							
A)	General							
a.	Bus Bar Sections including Bus Bar Interconnection Modules, Bus Ducts Sections, Compensators/ expansion joints/bellows, Bends, end covers along with enclosure of each type. For each of the above module/enclosure all active parts such as conductor, conductor joints, corona shield etc of each type.		Set	1				
b.	SF6 gas Pressure Relief Device assembly of each type		Set	1				
c.	SF6 Pressure gauge cum switch / Density monitors and pressure switch as applicable, of each type		Set	5				
d.	Coupling device for pressure gauge cum switch for connecting Gas handling plant of each type		Set	2				
e.	Rubber Gaskets, "O" Rings and Seals for SF6 gas of each type		Set	5				
f.	Molecular filter for SF6 gas with filter bags (10 % of total weight)		Set	1				
g.	Control Valves for SF6 gas of each type		Set	3				
h.	SF6 gas (20 % of total gas quantity)		Set	1				

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			Unit	Quantity	Currency	Unit Rate	Amount	FC
1	2	3	4	5	6	7	8=(5) x(7)	9=8
i.	Pipe length (Copper or Steel as applicable) for SF6 Circuit of each type (if applicable)		Set	2				
j.	Locking device to keep the Dis-connectors (Isolators) and Earthing/Fast Earthing switches in close or open position in case of removal of the driving Mechanism		set	2				
k	UHF PD Sensors of each type along with BNC Connector		Nos.	5				
l	Support Insulators of each type		Set.	10				
m	Gas Barriers of each type		Set	1				
n	SF6 to air bushing of each type & rating complete in all respect		Set	2				
B)	245 KV SF6 CIRCUIT BREAKER:							
a.	Complete (3-Ph or 3X1-phase, as applicable)Circuit Breaker without PIR complete with interrupter, main circuit, enclosure and Marshalling Box with operating mechanism to enable replacement of all applicable type/rating of CB by spare .		Nos.	1				
b.	Rubber gaskets, 'O' rings and seals for SF6 gas (1 No. of each type)		Sets	1				
c.	Trip coil assembly with resistor as applicable		Sets	1				
d.	Closing coil assembly with resistor as applicable .		Sets	1				
e.	Relays, Power contactors, push buttons, timers & MCBs etc (1 No. of each type & rating)		Sets	1				
f.	Closing coil assembly (including valve, if applicable)		Sets	1				
g.	Trip coil assembly (including valve, if applicable)		Sets	1				
h.	Auxiliary switch assembly of each type		Sets	1				
C)	245 KV ISOLATORS :							
a.	Complete set of 3-phase dis-connector of each type including main circuit, enclosure, driving mechanism and support Insulator etc to enable complete replacement of all applicable type/rating of Isolator by spare		Sets	1				
b.	Single Phase/ 3-phase Earthing switch including main circuit, enclosure, driving mechanism.		Sets	1				

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			Unit	Quantity	Currency	Unit Rate	Amount	FC
1	2	3	4	5	6	7	8=(5) x(7)	9=8
c.	Copper contact fingers for dis-connector male & female contact for one complete (3-phase) dis-connector of each type and rating		Sets	1				
d.	Copper contact fingers for earthing switch male & female contacts, for one complete(3-phase) earthing switch of each type and rating		Sets	1				
e.	Open / Close contactor assembly, timers, key interlock for one complete (3 phase) dis-connector and (3 phase) earthing switch (1 No. of each type and rating)		Sets	1				
f.	Push button switch - (1 No. of each type & rating) as applicable		Sets	1				
g.	Limit switch and Aux. Switches for complete 3 phase equipment							
g.1	For isolator		Sets	1				
g.2	For earth switch		Sets	1				
D)	245 KV CURRENT TRANSFORMER							
a.	Gas insulated complete CT of each type and rating with enclosure.		Nos.	1				
b.	Secondary bushing of each type		Sets	1				
E)	245 kV VOLTAGE TRANSFORMER							
a.	Gas insulated complete PT of each type and rating with enclosure.		Nos.	1				
(III)	SPARES FOR 145kV GIS							
A)	General							
a.	Bus Bar Sections including Bus Bar Interconnection Modules, Bus Ducts Sections, Compensators/ expansion joints/bellows, Bends, end covers along with enclosure of each type. For each of the above module/enclosure all active parts such as conductor, conductor joints, corona shield etc of each type.		Set	1				

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

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportaion to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)
			Unit	Quantity	Currency	Unit Rate	Amount	FC
1	2	3	4	5	6	7	8=(5) x(7)	9=8
b.	SF6 gas Pressure Relief Device assembly of each type		Set	1				
c.	SF6 Pressure gauge cum switch / Density monitors and pressure switch as applicable, of each type		Set	5				
d.	Coupling device for pressure gauge cum switch for connecting Gas handling plant of each type		Set	2				
e.	Rubber Gaskets, "O" Rings and Seals for SF6 gas of each type		Set	5				
f.	Molecular filter for SF6 gas with filter bags (10 % of total weight)		Set	1				
g.	Control Valves for SF6 gas of each type		Set	3				
h.	SF6 gas (20 % of total gas quantity)		Set	1				
i.	Pipe length (Copper or Steel as applicable) for SF6 Circuit of each type (if applicable)		Set	2				
j.	Locking device to keep the Dis-connectors (Isolators) and Earthing/Fast Earthing switches in close or open position in case of removal of the driving Mechanism		set	2				
k.	UHF PD Sensors of each type along with BNC Connector		Nos.	5				
l.	Support Insulators of each type		Set.	10				
m.	Gas Barriers of each type		Set	1				
n.	SF6 to air bushing of each type & rating complete in all respect		Set	2				
B)	145 KV SF6 CIRCUIT BREAKER:							
a.	Complete (3-Ph or 3X1-phase, as applicable)Circuit Breaker without PIR complete with interrupter, main circuit, enclosure and Marshalling Box with operating mechanism to enable replacement of all applicable type/rating of CB by spare .		Nos.	1				
b.	Rubber gaskets, 'O' rings and seals for SF6 gas (1 No. of each type)		Sets	1				
c.	Trip coil assembly with resistor as applicable		Sets	1				
d.	Closing coil assembly with resistor as applicable .		Sets	1				
e.	Relays, Power contactors, push buttons, timers & MCBs etc (1 No. of each type & rating)		Sets	1				

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

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportaion to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)
			Unit	Quantity	Currency	Unit Rate	Amount	FC
1	2	3	4	5	6	7	8=(5) x(7)	9=8
f.	Closing coil assembly (including valve, if applicable)		Sets	1				
g.	Trip coil assembly (including valve, if applicable)		Sets	1				
h.	Auxiliary switch assembly of each type		Sets	1				
C)	145 KV ISOLATORS :							
a.	Complete set of 3-phase dis-connector of each type including main circuit, enclosure, driving mechanism and support Insulator etc to enable complete replacement of all applicable type/rating of Isolator by spare		Sets	1				
b.	Single Phase/ 3-phase Earthing switch including main circuit, enclosure, driving mechanism.		Sets	1				
c.	Copper contact fingers for dis-connector male & female contact for one complete (3-phase) dis-connector of each type and rating		Sets	1				
d.	Copper contact fingers for earthing switch male & female contacts, for one complete(3-phase) earthing switch of each type and rating		Sets	1				
e.	Open / Close contactor assembly, timers, key interlock for one complete (3 phase) dis-connector and (3 phase) earthing switch (1 No. of each type and rating)		Sets	1				
f.	Push button switch - (1 No. of each type & rating) as applicable		Sets	1				
g.	Limit switch and Aux. Switches for complete 3 phase equipment							
g.1	For isolator		Sets	1				
g.2	For earth switch		Sets	1				
D)	145 KV CURRENT TRANSFORMER							
a.	Gas insulated complete CT of each type and rating with enclosure.		Nos.	1				
b.	Secondary bushing of each type		Sets	1				
E)	145 kV VOLTAGE TRANSFORMER							
a.	Gas insulated complete PT of each type and rating with enclosure.		Nos.	1				

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

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportaion to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)
			Unit	Quantity	Currency	Unit Rate	Amount	FC
1	2	3	4	5	6	7	8=(5) x(7)	9=8
(IV)	SPARES FOR 36kV GIS							
i)	General							
a.	SF6 gas Pressure Relief Devices, 1Nos. of each type		Set	1				
b.	SF6 Pressure gauge cum switch OR Density monitors and pressure switch as applicable (1 no. of each type)		Set	1				
c.	Coupling device for pressure gauge cum switch for connecting Gas handling plant		Set	1				
d.	Rubber Gaskets, "O" Rings and Seals for SF6 gas of each type		Set	1				
e.	Molecular filter for SF6 gas with filter bags(20% of total weight)		Set	1				
f.	All types of Control Valves for SF6 gas of each type		Set	1				
g.	SF6 gas (20 % of total gas quantity)		Set	1				
h.	All types of coupling for SF6 gas (1 no. of each type)		Set	1				
i.	Pipe length (Copper or Steel as applicable) for SF6 Circuit of each type		Set	1				
j.	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							
k.	For 3 Phase Enclosure if applicable		Nos.	1				
l.	For Single phase enclosure if applicable		Nos.	1				
m.	Locking device to keep the Dis-connectors (Isolators) and Earthing switches in close or open position in case of removal of the driving Mechanism		Sets	1				
n.	Bus Support insulator of each type for 3 phase/single phase enclosure.		Nos.	1				
ii)	36 KV SF6 CIRCUIT BREAKER:							
a.	Complete Circuit Breaker pole of each type & rating complete with interrupter, main circuit enclosure and Marshalling Box with operating mechanism		Nos.	1				
b.	Rubber gaskets, 'O' rings and seals for SF6 gas (1 No. of each type)		Sets	1				
c.	Trip coil assembly with resistor as applicable		Sets	1				

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

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportaion to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)
			Unit	Quantity	Currency	Unit Rate	Amount	FC
1	2	3	4	5	6	7	8=(5) x(7)	9=8
d.	Closing coil assembly with resistor as applicable .		Sets	1				
e.	Relays, Power contactors, push buttons, timers & MCBs etc (1 No. of each type & rating)		Sets	1				
f.	Closing coil assembly (including valve, if applicable)		Sets	1				
g.	Trip coil assembly (including valve, if applicable)		Sets	1				
h.	Auxiliary switch assembly of each type		Sets	1				
iii)	36KV ISOLATORS :							
a.	Complete set of 3-phase dis-connector including main circuit, enclosure, driving mechanism		Sets	1				
b.	Single Phase/ 3-phase Earthing switch including main circuit, enclosure, driving mechanism.		Sets	1				
c.	Copper contact fingers for dis-connector male & female contact for one complete (3-phase) dis-connector of each type and rating		Sets	1				
d.	Copper contact fingers for earthing switch male & female contacts, for one complete(3-phase) earthing switch of each type and rating		Sets	1				
e.	Open / Close contactor assembly, timers, key interlock for one complete (3 phase) dis-connector and (3 phase) earthing switch (1 No. of each type and rating)		Sets	1				
f.	Push button switch - (1 No. of each type & rating) as applicable		Sets	1				
g.	Limit switch and Aux. Switches for complete 3 phase equipment							
g.1	For isolator		Sets	1				
g.2	For earth switch		Sets	1				
iv)	36 KV CURRENT TRANSFORMER							
a.	Gas insulated complete CT of each type and rating with enclosure.		Nos.	1				
b.	Secondary bushing of each type		Sets	1				

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

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportaion to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)
			Unit	Quantity	Currency	Unit Rate	Amount	FC
1	2	3	4	5	6	7	8=(5) x(7)	9=8
v)	36 kV VOLTAGE TRANSFORMER							
a.	Gas insulated complete PT of each type and rating with enclosure.		Nos.	1				
(V)	SPARES FOR AIS EQUIPMENTS							
(A)	72.5 kV CB							
i)	Complete Pole of circuit breaker including pole column, interrupter, with driving mechanism and Marshaling Box but without support structure for							
	1250A, 31.5 KA (No. of Pole)		No.	1				
ii)	Rubber gaskets, 'O' rings and seals (for complete replacement of one pole of CB)		Set	1				
iii)	Trip coils with resistor		Nos.	2				
iv)	Closing coils with resistor		Nos.	1				
v)	Terminal Pads & connectors		Nos.	2				
vi)	Molecular filter		Nos.	2				
vii)	Relays, Power contactors, switch fuse units, limit switches, push buttons, timers & MCB etc. (1 no. of each type)		Set	1				
viii)	Pressure switches / Density monitor (1 no. of each type)		Set	1				
ix)	Auxiliary switch assembly (for one pole of CB)		Set	1				
(B)	72.5kV Isolator							
i)	One complete pole including support Insulator, MANUAL operating mechanism with box but excluding structure							
	1250A, 31.5KA, 1 E/S (no. of pole)		No.	1				
ii)	Copper contact fingers for male & female contacts (for one pole of Isolator)		Set	2				
iii)	Open/Close contactor assembly, timers, key interlock push button switch & auxilliary switches (for one pole of Isolator)		Set	1				
iv)	Limit Switch		Nos.	2				
v)	Terminal Pads & Connectors		Nos.	3				
(F)	CT(72.5 kV,1250A with 120% extended current rating)		No.	1				
(I)	72.5kV PT		No.	1				

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

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportaion to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)
			Unit	Quantity	Currency	Unit Rate	Amount	FC
1	2	3	4	5	6	7	8=(5) x(7)	9=8
(J)	216 SA							
i)	Complete LA		No.	1				
ii)	Surge counter/monitor		Nos.	5				
(F)	120kV SA							
i)	Complete LA		No.	1				
ii)	Surge counter/monitor		Nos.	5				
(G)	C&R PANELS							
i)	Transformer protection panel :							
a)	Transformer differential protection		No.	1				
b)	REF protection relay with non-linear resistor		No.	1				
c)	Directional over current & E/F Protection Relay		No.	1				
ii)	Line protection panel :							
a)	Distance Protection relay- Main-1		No.	1				
b)	Current differential Protection relay- Main-2		No.	1				
iv)	Breaker Relay panel:							
a)	Breaker failure relay		No.	1				
b)	Trip circuit supervision relay		Nos.	2				
c)	Self reset trip relay (relay of each type)		Set	1				
d)	Hand reset trip relay(relay of each type)		Set	1				
e)	Timer relay(relay of each type)		Set	1				
f)	DC supervision relay(relay of each type)		Set	1				
g)	Flag relays(relay of each type)		Set	1				
h)	Auxiliary relays(relay of each type)		Set	1				
(H)	Teleprotection Equipments							
ii)	Set of prints for protection coupler(digital)		Set	1				
(I)	SAS							
i)	Bay Control Unit (IED) of each type		Set	1				
ii)	Ethernet Switch of each type		Set	1				
(J)	BATTERY CHARGER							

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

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportaion to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)
			Unit	Quantity	Currency	Unit Rate	Amount	
1	2	3	4	5	6	7	8=(5) x(7)	9=8
J1	220 Volt							
i)	Set of control cards		Set	1				
ii)	Set of relays		Set	1				
iii)	Rectifier transformer		No.	1				
iv)	Thyristor/diode		Set	1				
v)	Fuses of Thyristor with indicators		Set	6				
J2	48 Volt							
i)	Set of control cards		Set	1				
ii)	Set of relays		Set	1				
iii)	Rectifier transformer		No.	1				
iv)	Thyristor/diode		Set	1				
v)	Fuses of Thyristor with indicators		Set	6				
K.	Fire protection System							
a.	Deluge Valve of each type		Set	1				
L.	DG SETS :							
a.	Self starter assembly		No.	1				
b.	AVR (Auto Voltage Regulator)/ AVR card		set	1				
(M)	COMMON SPARES							
i)	Bay unit Module		No.	1				
ii)	2 wire local subscriber interface card for PABX		No.	1				
iii)	E1 Interface card for PABX		No.	1				
1.0	SDH Equipment (STM-4 MADM upto 3 MSP protected directions)							
(i)	Common cards, Cross-connect/control cards, Optical base card, Power supply cards, power cabling, other hardware & accessories (each).		Set	1				
(ii)	Optical Interface Cards/SFP#							
a	S4.1 SFP		Nos.	1				
b	L4.1 SFP		Nos.	1				
c	L4.2 SFP		Nos.	0				

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

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportaion to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)
			Unit	Quantity	Currency	Unit Rate	Amount	FC
1	2	3	4	5	6	7	8=(5) x(7)	9=8
(iii)	Tributary cards							
a	E1 Interface card (Min.16 interfaces)		Nos.	1				
b	Ethernet Interface 10/100 Base T with Layer-2 switching (Min 4 Interfaces per card)		Nos.	1				
2.0	VOIP telephone instrument		Nos.	1				
3.0	Pre Connectorized Optical Fiber Patch Cords(10 Mtrs) – Pack of six Patch cords		Set	1				
	Total of Part A+Part B + Part C for Khudi Substation (Total of column 9 to be carried forward to Schedule No. 1 (Total))							

Name of Bidder:

Signature of Bidder:

(Printed Name)

(Designation)

(Common Seal)

NEPAL ELECTRICITY AUTHORITY
PROJECT MANAGEMENT DIRECTORATE
MARSYANGDI CORRIDOR 220 kV TRANSMISSION LINE PROJECT
(I) 220/132/33kV Manang (new) GIS Substation and (II)220/132/33kV Khudi (new) GIS Substation

Schedule No.1 : Plant and Equipment including Mandatory Spares to be supplied from abroad (Manang and Khudi Substation Total)

Item No.	Description	Currency	Total Amount (Excluding Taxes and Duties)
1	2	3	4
a)	Total of Plant and Equipment including Mandatory Spares to be supplied from abroad for Manang Substation (Sch 1 (Manang))		
b)	Total of Plant and Equipment including Mandatory Spares to be supplied from abroad for Khudi Substation (Schedule 1 (Khudi))		
Total For Khudi and Manang Substation (Total of column 4 to be carried forward to Schedule No. 5: Grand Summary)			

Remarks # :Optical interface/SFP can be provided with Optical base card or Control card with the condition that control card and Optical base card shall not be equipped with more than two Optical interface/SFP. However main and protection channel shall be terminated on separate cards.
 \$: Set shall include all required hardware/software for complete TMN –Craft Terminal system as specified in technical specifications.
 \$\$: One Set means one of each type of module/unit card etc
 **: Suitable Optical Interface Card(s) or any other solution such as SDH equipment with optical amplifier, wavelength translator or higher aggregate bit rate SDH equipment may be offered for the length to meet the link budget requirements without repeater
 *: Set shall include all required hardware/software for complete TMN –Craft Terminal system as specified in technical specifications.

Name of Bidder:

Signature of Bidder:

(Printed Name)

(Designation)

(Common Seal)

**NEPAL ELECTRICITY AUTHORITY
PROJECT MANAGEMENT DIRECTORATE**

MARSYANGDI CORRIDOR 220 kV TRANSMISSION LINE PROJECT

(I) 220/132/33kV Manang (new) GIS Substation and (II)220/132/33kV Khudi (new) GIS Substation

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

All prices in Nepalese Local Currency (NRs)

Item No.	Item description	Unit	Quantity	Ex Factory Price (Excluding VAT)		Inland transportation to site including insurance		Total Amount (Excluding Taxes)
				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
Part-A : EMPLOYER ASSESSED QUANTITIES								
A.1	POWER TRANSFORMER							
A1.1	POWER TRANSFORMER							
a)	33.33MVA , 220/132/33 KV, 1-phase Autotransformer (Excluding insulating oil) with RIP Bushing as per TS	Nos.	4					
b)	Insulating oil for 33.33MVA , 220/132/33 KV, 1-phase Autotransformer (1Lot = Oil for 1 Autotransformers)	Lot	4					
c)	33kV Current transformer (NCT) for autotransformer	No	1					
d)	Nitrogen Injection type Fire Protection system including underground oil tank	Set	4					
A1.2	POWER TRANSFORMER							
a)	30 MVA , 132/33 KV, 3-phase transformer (Excluding insulating oil) with RIP Bushing as per TS.	Nos.	1					
b)	Insulating oil for 30 MVA , 132/33 KV, 3-phase transformer (1Lot = Oil for 1Autotransformers)	Lot	1					
c)	Nitrogen Injection type Fire Protection system including underground oil tank	Set	1					
A1.3	Testing & Maintenance Equipments							
a)	Oil Storage Tank (10KL size)	No.	1					
b)	Transformer Oil Filtration plant (6KLPH)	No	1					
A2	LT TRANSFORMER							
1	630 kVA, 33/0.400kV	Nos	2					
B	245 kV equipment							
B1	245KV GIS Equipment							
1.01	245kV, SF6 GIS Bus Bars Module [Module description as per Technical specification]	Set	2					

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

All prices in Nepalese Local Currency (NRs)

Item No.	Item description	Unit	Quantity	Ex Factory Price (Excluding VAT)		Inland transportation to site including insurance		Total Amount (Excluding Taxes)
				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
1.02	245kV, SF6 GIS ICT bay Module [Module description as per Technical specification]	Set	2					
1.03	245kV, SF6 GIS Line bay Module [Module description as per Technical specification]	Set	6					
1.04	245kV, SF6 GIS Bus Coupler bay Module [Module description as per Technical specification]	Set	1					
1.05	245 kV Auxiliary Bus to connect spare unit of Transformer [Module description as per Technical specification]	Set	1					
1.06	245kV, 1600A,40kA SF6/Air Bushing for Connecting GIS to AIS alongwith support structure (Single Phase)	Nos	25					
1.08	245kV, 1600A, 1phase SF6 GIS Bus duct alongwith support structure	Mtr	1200					
B2	245KV Outdoor Equipment							
1.1	216 KV Surge Arrester (1-phase)	Nos.	25					
1.2	245kV BPI	Nos.	30					
C	145KV Equipment							
C1	145KV GIS Equipment							
1.01	145kV, SF6 GIS Bus Bars Module [Module description as per Technical specification]	Set	2					
1.02	145kV, SF6 GIS Transformer bay Module [Module description as per Technical specification for 220/132kV ICT]	Set	2					
1.03	145kV, SF6 GIS Transformer bay Module [Module description as per Technical specification for 132/33kV ICT]	Set	1					
1.04	145kV, SF6 GIS Line bay Module [Module description as per Technical specification]	Set	6					
1.05	145kV, SF6 GIS Bus Coupler bay Module [Module description as per Technical specification]	Set	1					
1.06	145 kV Auxiliary Bus to connect spare unit of Transformer [Module description as per Technical specification]	Set	1					
C2	145KV Outdoor Equipment							
1.1	120KV Surge Arrester (1-phase)	Nos.	28					
1.2	145kV BPI	Nos.	30					

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

All prices in Nepalese Local Currency (NRs)

Item No.	Item description	Unit	Quantity	Ex Factory Price (Excluding VAT)		Inland transportation to site including insurance		Total Amount (Excluding Taxes)
				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
C3	132 kV Cu condctor, XLPE cable and accessories							
1.1	132 kV, 1C x 1200 sq.mm Copper, XLPE cable as per Technical specification	Mtr	1500					
1.2	132 kV, 1C x 500 sq.mm Copper, XLPE cable as per Technical specification	Mtr	600					
1.3	132 kV, 1C x 300 sq.mm Copper, XLPE cable as per Technical specification	Mtr	300					
1.4	132 KV Termination kit suitable for 132KV, 1CX 1200 sq.mm XLPE Cable alongwith with support Structure for EHV Cable	Nos	18					
1.5	132 KV Termination kit suitable for 132KV, 1CX 500 sq.mm XLPE Cable alongwith with support Structure for EHV Cable	Nos	7					
1.6	132 KV Termination kit suitable for 132KV, 1CX300 sq.mm XLPE Cable alongwith with support Structure for EHV Cable	Nos	3					
D	36KV Equipment							
D1	36KV GIS Equipment							
1.01	Indoor switchgear panels (GIS type) IP1 type	Set	1					
1.02	Indoor Switchgear Panels (GIS type) IP 2 type	Set	6					
1.03	Indoor switchgear panels (GIS type) IP3 type	Set	1					
1.04	Indoor switchgear panels (GIS type) IP4 Type	Set	1					
D2	36kV XLPE cable and its termination for connection of 33 kV side of 132/33 kV Transformer to 36kV GIS bay and line bays							
(i)	33kV, 1C x 400 sq.mm Copper, XLPE cable as per Technical specification	Mtr	2000					
(ii)	33KV Termination kit suitable for 1C x 400 sq.mm Copper, XLPE cable alongwith with support Structure	Nos	27					
D3	36 KV XLPE 1-Ph cable and its termination for connection of 33 kV side of 630 kVA, 33/0.400KV LT Transformer from available HT external supply							
(i)	36 KV XLPE 3C, 120sqmm Copper, XLPE cable as per Technical Specification	Mtr	500					

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

All prices in Nepalese Local Currency (NRs)

Item No.	Item description	Unit	Quantity	Ex Factory Price (Excluding VAT)		Inland transportation to site including insurance		Total Amount (Excluding Taxes)
				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
(ii)	33KV, 3 Phase termination kit suitable for above cable	Set	3					
D4	36 kV Equipments for LT Transformer							
1.0	36 kV Isolator (3-phase)-HDB							
(i)	1250A, 25 KA, Isolator	No	8					
2.0	30 kV Surge Arrestors (1-Phase)	Nos	24					
3.0	36kV Horn Gap Fuse (3-Phase)	No	1					
4.0	36 kV BPI	Nos	27					
E	Testing & Maintenance Equipment for GIS							
(i)	SF6 Gas filling & evacuating plant							
	For 245kV, 145kV & 36kV GIS	Set	1					
(ii)	Partial Discharge Monitoring System for GIS as per Technical Specification							
(a)	For 245kV GIS	Set	1					
(b)	For 145kV GIS	Set	1					
(c)	For 36kV GIS	Set	1					
(iii)	Dew Point meter							
	For 245kV, 145kV & 36kV GIS	Set	1					
(iv)	SF6 Gas Leak Detector							
	For 245kV, 145kV & 36kV GIS	Set	1					
(v)	EOT crane for 245kV GIS Hall	Set	1					
(vi)	EOT crane for 145kV GIS Hall	Set	1					
(vii)	SF6 Gas Analyser	Set	1					
F	72.5kV EQUIPMENT							
1.1	72.5 kV, 1250A, 31.5kA Circuit Breaker (3-phase) with support structure	No.	1					
1.2	72.5 kV, 1250A,31.5kA Isolators with earth switch (3-phase, DBR type)	No.	1					
1.3	72.5kV, 1250A, 31.5 kA with 120% extended rating CT.	Nos.	3					
1.4	72.5kV PT.(1-phase)	Nos.	3					
1.5	72.5 kV BPI (1-phase)	Nos.	6					
G	RELAY PANELS (WITH AUTOMATION)							

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

All prices in Nepalese Local Currency (NRs)

Item No.	Item description	Unit	Quantity	Ex Factory Price (Excluding VAT)		Inland transportation to site including insurance		Total Amount (Excluding Taxes)
				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
1.0	220 kV							
a	Circuit Breaker Relay Panel							
i	With Auto Reclose	Set	6					
ii	With out Auto Reclose	Set	3					
b	Line Protection Panel							
i	For 220 kV Khudi lines	Set	2					
ii	For 220 kV other lines	Set	4					
d	Transformer Protection Panel (For both HV & MV side for 220/132kV ICT)	Set	1					
e	Bus Bar Protection Panel	Set	1					
2.0	132 kV							
a	Circuit Breaker Relay Panel							
ii	With out Auto Reclose	Set	10					
b	Line Protection Panel	Set	6					
d	Transformer Protection Panel (For both HV & MV side for 132/33kV ICT)	Set	1					
e	Bus Bar Protection Panel	Set	1					
H	COMMON EQUIPMENTS							
1.0	Relay Test tool kit	Set	1					
2.0	Time synchronisation equipment	No.	1					
J	SUBSTATION AUTOMATION							
J.1	Complete Substation Automation System (SAS) for substation including hardware and software for the substation & remote control stations alongwith associated equipments for the following bays as per Technical Specification							
a	Main bays to be automated							
i)	220kV system	Bay Nos	9					
ii)	132kV system	Bay Nos	10					
iii)	33kV system	Bay Nos	10					
iv)	BCU for controlling & monitoring of Auxilary System	Set	1					
K	Teleprotection & communication Equipments							

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

All prices in Nepalese Local Currency (NRs)

Item No.	Item description	Unit	Quantity	Ex Factory Price (Excluding VAT)		Inland transportation to site including insurance		Total Amount (Excluding Taxes)
				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
i)	Digital Protection Coupler	Nos	12					
ii)	Digital Protection Coupler(for other end)	Nos	10					
iii)	PBAX with following configuration as per TS	Set	1					
a)	2 wire subscriber interface card with capacity 32 local subscribers (along with 32 nos. Instruments)							
b)	4 wire E & M interface card with capacity 8 nos. trunks (For PLCC)							
c)	E-1 interface with 2 trunks G-703							
d)	2 wire interface with 1 trunk (For PSTN)							
iv)	Testing & Maintenance equipment (print test kit only)	Set	1					
v)	4 wire telephone equipment	No	1					
L	LT Switchgear (As per Technical specification)							
a	415V Main switchboard	Set	1					
b	415V ACDB	Set	1					
c	415V MLDB	Set	1					
d	415V Emergency LDB	Set	1					
e	220V DCDB	Sets	2					
f	48 V DCDB	Sets	2					
M	Batteries							
a	220V							
i	600 AH	Nos	2					
b	48V							
i	600 AH	Nos	2					
N	Float Cum Boost Battery Charger							
a	220V Float Cum Boost Battery Charger							
i	80A/80A	Nos	2					
b	48V Float Cum Boost Battery Charger							
ii	80A/80A	Nos	2					
O	Silent Type Diesel Generator with control Panel							
a	250kVA	Set	1					
P	Fire Protection System							

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

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Item No.	Item description	Unit	Quantity	Ex Factory Price (Excluding VAT)		Inland transportation to site including insurance		Total Amount (Excluding Taxes)
				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
a	Portable /Trolley/Wheel mounted extinguishers							
i	9 litre water type	Nos	5					
ii	50 litre foam type	Nos	2					
iii	4.5 kg CO ₂ type	Nos	25					
iv	4.5 kg Dry Chemical Power (DCP) type	Nos	5					
Q	Cables along with clamps, glands, lugs and straight joints etc.							
(a)	Power Cables - (1.1kV grade)							
i	3.5Cx300 sqmm (XLPE) cable for filter Machine along with termination arrangement as per TS	KM	1					
R	Air conditioning System for Control room cum administrative building, Township Quarters etc							
a	High wall type split AC unit of 2 TR capacity	Nos	35					
S	Fabrication, galvanising and supply of following Steel Structures including nuts, bolts, all types of washers, packplates, step bolts and gusset plates including foundation bolts.							
(a)	Lattice Structure including Foundation Bolts	MT	135					
(b)	Pipe Structure including Foundation Bolts .	MT	35					
(c)	Fastners and step bolts.(Nuts,Bolts & Washers)	MT	8					
T	Telecom Equipments							
A	SDH Equipment (STM-4 MADM upto 3 MSP protected directions)							
(i)	Base Equipment (Common cards, Cross Connect/control cards, optical base cards, power supply cards, power cabling, other hardware and accessories including sub racks, patch cord, DDF etc fully equipped excluding (ii) & (iii) below	Nos.	1					
(ii)	Optical Interface Cards/SFP#							
a	S4.1 SFP	Nos.	0					
b	L4.1 SFP	Nos.	4					

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

All prices in Nepalese Local Currency (NRs)

Item No.	Item description	Unit	Quantity	Ex Factory Price (Excluding VAT)		Inland transportation to site including insurance		Total Amount (Excluding Taxes)
				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
c	L4.2 SFP	Nos.	0					
(iii)	Tributary cards							
a	E1 Interface card (Min.16 interfaces per card)	Nos.	2					
b	Ethernet Interface 10/100 Base T with Layer-2 switching (Min 4 Interfaces per card)	Nos.	2					
B	Equipment Cabinets	No.	1					
2.0	Network Manager System - Craft Terminal							
a	Hardware	Set\$	1					
b	Software	Set\$	1					
3.0	VOIP telephone instrument with one common switch (min. 4 port)	Set\$	1					
a	Hardware with 2 nos of telephone							
b	Software							
U	PRE-ENGINEERED BUILDINGS							
	220 kV GIS Hall including all supply materials from abroad except civil works and for civil works refer schedule 4(a)							
(a)	220 kV GIS Hall	Sq. M.	800					
(b)	AHU / Panel Room	Sq. M.	200					
	132 kV GIS Hall and Panel Rooms including all supply materials from abroad except civil works and for civil works refer schedule 4(a)							
(a)	132 kV GIS Hall	Sq. M.	450					
(b)	AHU / Panel Room	Sq. M.	150					
	33 kV GIS Hall and Panel Rooms including all supply materials from abroad except civil works and for civil works refer schedule 4(a)							
(a)	33 kV GIS Hall	Sq. M.	150					
(b)	AHU / Panel Room	Sq. M.	50					

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

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				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
V	Misc. Structural steel including rails, embedments, edge protection angles, gratings etc. but excluding the reinforcement steel and steel for lattice and pipe structures.	MT	160					

Part-B: VENDOR ASSESSED QUANTITIES

A	Erection Hardware							
	Insulator strings, Disc Insulators, Hardware, conductor, Al tube, bus-bar materials, cable trays, clamps, spacers, connectors including equipment connectors, Junction box, earthwire, buried cable trenches/pipe equipment & lighting, all accessories etc. for the following:							
a	245kV GIS Termination Arrangement:							
i	Line Bay	Set	6					
ii	Transformer Bay (including 220 kV AIS connection for spare unit with GIS auxiliary bus module)	Set	1					
b	145kV GIS Termination Arrangement:							
i	Line Bay	Set	6					
ii	Transformer Bay (including 132 kV AIS connection for spare unit with GIS auxiliary bus module for 220/132 kV auto Transformer)	Set	1					
iii	Transformer Bay for 132/33 kV Transformer	Set	1					
c	For spare unit of 220/132/33 kV auto transformer connection through auxiliary buses (tertiary & Neutral auxiliary buses only), Neutral formation and delta formation (for one bank): Required 72.5 kV BPI for tertiary auxiliary bus & delta formation, 36 kV BPI for Neutral formation & Neutral auxiliary bus including Al tube, bus-bar materials, clamps, spacers, connectors, including equipment connectors, Earthing of spare unit as per technical specification, as applicable.	Set	1					
d	72.5kV LT Transformer connection	Set	1					
e	33kV LT Transformer connection	Set	1					
f	33kV Transformer bay	Set	1					
g	33kV Line bays	Set	6					

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

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				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
h	Earthing and lightning protection including necessary connectors/connections, risers etc. complete in all respect(but excluding LM structures for Lightning protection)							
i	Earth Conductor (copper)	LS	1					
ii	Earth Rod (copper clad steel)	LS	1					
iii	Equipment for lightning protection	LS	1					
B	Fire Protection System							
a	Pumping arrangement for Hydrant system, complete with all piping, valves, fittings,etc. inside pump house							
i	220/132kV (New) Substation	Set	1					
b	Hydrant system, complete U/G piping and accessories etc. outside the Pump House.							
i	220/132kV (New) Substation	Set	1					
c	Fire & Smoke detection and Alarm System							
(i)	Control room building	Set	1					
(ii)	220 kV GIS building	Set	1					
(iii)	132 kV GIS building	Set	1					
(iv)	33kV GIS building	Set	1					
(v)	Fire Fighting Pump House	Set	1					
C	Illumination System							
a	Control room cum administrative building illumination	LS	1					
b	Fire fighting building illumination	LS	1					
c	Switchyard lighting	LS	1					
d	Street lighting	LS	1					
e	Transit Camp illumination	LS	1					
f	245kV, 145 kV and 33 kV GIS Buildings including panel rooms	LS	1					
g	Township quarter (B-Type, 4 nos)	LS	1					
h	Township quarter (C-Type, 4 nos)	LS	1					
i	Township quarter (D-Type, 1 nos)	LS	1					
j	Car parkings	LS	1					
k	Recreation hall & Gym hall for staff community	LS	1					
l	Valley ball court	LS	1					
m	Badminton court	LS	1					

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

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				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
D	Air conditioning & ventilation System							
D.1	Air conditioning system							
(i)	Panel room in 245kV GIS Hall	LS	1					
(ii)	Panel room in 145kV GIS Hall	LS	1					
(iii)	Panel room in 36kV GIS Hall	LS	1					
D.2	Ventilation system							
(i)	245KV GIS hall	LS	1					
(ii)	145KV GIS hall	LS	1					
G	POWER & CONTROL CABLES							
b	Power Cables(PVC)- (1.1kV grade)	LS	1					
b	Power Cables (XLPE)(excluding 3.5Cx300 sqmm (XLPE) cable for filter Machine)- (1.1kV grade)	LS	1					
c	Control Cable (PVC)- (1.1kV grade)	LS	1					
d	Cable glands, lugs & straight through joints for Power & Control cables	LS	1					

Part-C: Mandatory Spares

(I)	Mandatory Spare List for Transformer							
(i)	For 33.33MVA , 220/132/33 KV, 1-phase Autotransformer							
a)	RIP Bushing of each rating with metal parts & gaskets and lifting tools	Set	1					
b)	Cooler fan with Motor	No.	1					
c)	Buchholz Relay(Main Tank) complete with floats and contacts	Set	1					
d)	Local and Remote WTI with sensing device and contact(each)	Set	1					
e)	Magnetic oil level gauge	No.	1					
f)	Strarters, contactors,switches & Relays for Electrical control panels(One ste of each type)	Set	1					
g)	Remote Tap postion Indiactor	No.	1					
h)	Spare insulating oil to be handed over to Owner after commisioning for O&M requirement	KL	10					
(ii)	For 30 MVA , 132/33 KV, 3-phase transformer							

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

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				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
a)	RIP Bushing of each rating with metal parts & gaskets and lifting tools	Set	1					
b)	Cooler fan with Motor	No.	1					
c)	Buchholz Relay(Main Tank) complete with floats and contacts	Set	1					
d)	Local and Remote WTI with sensing device and contact(each)	Set	1					
e)	Magnetic oil level gauge	No.	1					
f)	Starters, contactors,switches & Relays for Electrical control panels(One ste of each type)	Set	1					
g)	Remote Tap postion Indiator	No.	1					
(II)	SPARES FOR 245kV GIS							
A)	General							
a.	Bus Bar Sections including Bus Bar Interconnection Modules, Bus Ducts Sections, Compensators/ expansion joints/bellows, Bends, end covers along with enclosure of each type. For each of the above module/enclosure all active parts such as conductor, conductor joints, corona shield etc of each type.	Set	1					
b.	SF6 gas Pressure Relief Device assembly of each type	Set	1					
c.	SF6 Pressure gauge cum switch / Density monitors and pressure switch as applicable, of each type	Set	5					
d.	Coupling device for pressure gauge cum switch for connecting Gas handling plant of each type	Set	2					
e.	Rubber Gaskets, "O" Rings and Seals for SF6 gas of each type	Set	5					
f.	Molecular filter for SF6 gas with filter bags (10 % of total weight)	Set	1					
g.	Control Valves for SF6 gas of each type	Set	3					
h.	SF6 gas (20 % of total gas quantity)	Set	1					
i.	Pipe length (Copper or Steel as applicable) for SF6 Circuit of each type (if applicable)	Set	2					
j.	Locking device to keep the Dis-connectors (Isolators) and Earthing/Fast Earthing switches in close or open position in case of removal of the driving Mechanism	set	2					
k.	UHF PD Sensors of each type along with BNC Connector	Nos.	5					
l.	Support Insulators of each type	Set.	10					

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

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Item No.	Item description	Unit	Quantity	Ex Factory Price (Excluding VAT)		Inland transportation to site including insurance		Total Amount (Excluding Taxes)
				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
m.	Gas Barriers of each type	Set	1					
n.	SF6 to air bushing of each type & rating complete in all respect	Set	2					
B)	245 KV SF6 CIRCUIT BREAKER:							
a.	Complete (3-Ph or 3X1-phase, as applicable)Circuit Breaker without PIR complete with interrupter, main circuit, enclosure and Marshalling Box with operating mechanism to enable replacement of all applicable type/rating of CB by spare .	Nos.	1					
b.	Rubber gaskets, 'O' rings and seals for SF6 gas (1 No. of each type)	Sets	1					
c.	Trip coil assembly with resistor as applicable	Sets	1					
d.	Closing coil assembly with resistor as applicable .	Sets	1					
e.	Relays, Power contactors, push buttons, timers & MCBs etc (1 No. of each type & rating)	Sets	1					
f.	Closing coil assembly (including valve, if applicable)	Sets	1					
g.	Trip coil assembly (including valve, if applicable)	Sets	1					
h.	Auxiliary switch assembly of each type	Sets	1					
C)	245 KV ISOLATORS :							
a.	Complete set of 3-phase dis-connector of each type including main circuit, enclosure, driving mechanism and support Insulator etc to enable complete replacement of all applicable type/rating of Isolator by spare	Sets	1					
b.	Single Phase/ 3-phase Earthing switch including main circuit, enclosure, driving mechanism.	Sets	1					
c.	Copper contact fingers for dis-connector male & female contact for one complete (3-phase) dis-connector of each type and rating	Sets	1					
d.	Copper contact fingers for earthing switch male & female contacts, for one complete(3-phase) earthing switch of each type and rating	Sets	1					
e.	Open / Close contactor assembly, timers, key interlock for one complete (3 phase) dis-connector and (3 phase) earthing switch (1 No. of each type and rating)	Sets	1					

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				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
f.	Push button switch - (1 No. of each type & rating) as applicable	Sets	1					
g.	Limit switch and Aux. Switches for complete 3 phase equipment							
g.1	For isolator	Sets	1					
g.2	For earth switch	Sets	1					
D)	245 KV CURRENT TRANSFORMER							
a.	Gas insulated complete CT of each type and rating with enclosure.	Nos.	1					
b.	Secondary bushing of each type	Sets	1					
E)	245 kV VOLTAGE TRANSFORMER							
a.	Gas insulated complete PT of each type and rating with enclosure.	Nos.	1					
(III)	SPARES FOR 145kV GIS							
A)	General							
a.	Bus Bar Sections including Bus Bar Interconnection Modules, Bus Ducts Sections, Compensators/ expansion joints/bellows, Bends, end covers along with enclosure of each type. For each of the above module/enclosure all active parts such as conductor, conductor joints, corona shield etc of each type.	Set	1					
b.	SF6 gas Pressure Relief Device assembly of each type	Set	1					
c.	SF6 Pressure gauge cum switch / Density monitors and pressure switch as applicable, of each type	Set	5					
d.	Coupling device for pressure gauge cum switch for connecting Gas handling plant of each type	Set	2					
e.	Rubber Gaskets, "O" Rings and Seals for SF6 gas of each type	Set	5					
f.	Molecular filter for SF6 gas with filter bags (10 % of total weight)	Set	1					
g.	Control Valves for SF6 gas of each type	Set	3					
h.	SF6 gas (20 % of total gas quantity)	Set	1					
i.	Pipe length (Copper or Steel as applicable) for SF6 Circuit of each type (if applicable)	Set	2					
j.	Locking device to keep the Dis-connectors (Isolators) and Earthing/Fast Earthing switches in close or open position in case of removal of the driving Mechanism	set	2					

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				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
k	UHF PD Sensors of each type along with BNC Connector	Nos.	5					
l	Support Insulators of each type	Set.	10					
m	Gas Barriers of each type	Set	1					
n	SF6 to air bushing of each type & rating complete in all respect	Set	2					
B)	145 KV SF6 CIRCUIT BREAKER:							
a.	Complete (3-Ph or 3X1-phase, as applicable)Circuit Breaker without PIR complete with interrupter, main circuit, enclosure and Marshalling Box with operating mechanism to enable replacement of all applicable type/rating of CB by spare .	Nos.	1					
b.	Rubber gaskets, 'O' rings and seals for SF6 gas (1 No. of each type)	Sets	1					
c.	Trip coil assembly with resistor as applicable	Sets	1					
d.	Closing coil assembly with resistor as applicable .	Sets	1					
e.	Relays, Power contactors, push buttons, timers & MCBs etc (1 No. of each type & rating)	Sets	1					
f.	Closing coil assembly (including valve, if applicable)	Sets	1					
g.	Trip coil assembly (including valve, if applicable)	Sets	1					
h.	Auxiliary switch assembly of each type	Sets	1					
C)	145 KV ISOLATORS :							
a.	Complete set of 3-phase dis-connector of each type including main circuit, enclosure, driving mechanism and support Insulator etc to enable complete replacement of all applicable type/rating of Isolator by spare	Sets	1					
b.	Single Phase/ 3-phase Earthing switch including main circuit, enclosure, driving mechanism.	Sets	1					
c.	Copper contact fingers for dis-connector male & female contact for one complete (3-phase) dis-connector of each type and rating	Sets	1					
d.	Copper contact fingers for earthing switch male & female contacts, for one complete(3-phase) earthing switch of each type and rating	Sets	1					

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				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
e.	Open / Close contactor assembly, timers, key interlock for one complete (3 phase) dis-connector and (3 phase) earthing switch (1 No. of each type and rating)	Sets	1					
f.	Push button switch - (1 No. of each type & rating) as applicable	Sets	1					
g.	Limit switch and Aux. Switches for complete 3 phase equipment							
g.1	For isolator	Sets	1					
g.2	For earth switch	Sets	1					
D)	145 KV CURRENT TRANSFORMER							
a.	Gas insulated complete CT of each type and rating with enclosure.	Nos.	1					
b.	Secondary bushing of each type	Sets	1					
E)	145 kV VOLTAGE TRANSFORMER							
a.	Gas insulated complete PT of each type and rating with enclosure.	Nos.	1					
(IV)	SPARES FOR 36kV GIS							
i)	General							
a.	SF6 gas Pressure Relief Devices, 1Nos. of each type	Set	1					
b.	SF6 Pressure gauge cum switch OR Density monitors and pressure switch as applicable (1 no. of each type)	Set	1					
c.	Coupling device for pressure gauge cum switch for connecting Gas handling plant	Set	1					
d.	Rubber Gaskets, "O" Rings and Seals for SF6 gas of each type	Set	1					
e.	Molecular filter for SF6 gas with filter bags(20% of total weight)	Set	1					
f.	All types of Control Valves for SF6 gas of each type	Set	1					
g.	SF6 gas (20 % of total gas quantity)	Set	1					
h.	All types of coupling for SF6 gas (1 no. of each type)	Set	1					
i.	Pipe length (Copper or Steel as applicable) for SF6 Circuit of each type	Set	1					
j.	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							
k.	For 3 Phase Enclosure if applicable	Nos.	1					

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				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
l.	For Single phase enclosure if applicable	Nos.	1					
m.	Locking device to keep the Dis-connectors (Isolators) and Earthing switches in close or open position in case of removal of the driving Mechanism	Sets	1					
n.	Bus Support insulator of each type for 3 phase/single phase enclosure.	Nos.	1					
ii)	36 KV SF6 CIRCUIT BREAKER:							
a.	Complete Circuit Breaker pole of each type & rating complete with interrupter, main circuit enclosure and Marshalling Box with operating mechanism	Nos.	1					
b.	Rubber gaskets, 'O' rings and seals for SF6 gas (1 No. of each type)	Sets	1					
c.	Trip coil assembly with resistor as applicable	Sets	1					
d.	Closing coil assembly with resistor as applicable .	Sets	1					
e.	Relays, Power contactors, push buttons, timers & MCBs etc (1 No. of each type & rating)	Sets	1					
f.	Closing coil assembly (including valve, if applicable)	Sets	1					
g.	Trip coil assembly (including valve, if applicable)	Sets	1					
h.	Auxiliary switch assembly of each type	Sets	1					
iii)	36KV ISOLATORS :							
a.	Complete set of 3-phase dis-connector including main circuit, enclosure, driving mechanism	Sets	1					
b.	Single Phase/ 3-phase Earthing switch including main circuit, enclosure, driving mechanism.	Sets	1					
c.	Copper contact fingers for dis-connector male & female contact for one complete (3-phase) dis-connector of each type and rating	Sets	1					
d.	Copper contact fingers for earthing switch male & female contacts, for one complete(3-phase) earthing switch of each type and rating	Sets	1					
e.	Open / Close contactor assembly, timers, key interlock for one complete (3 phase) dis-connector and (3 phase) earthing switch (1 No. of each type and rating)	Sets	1					
f.	Push button switch - (1 No. of each type & rating) as applicable	Sets	1					

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

All prices in Nepalese Local Currency (NRs)

Item No.	Item description	Unit	Quantity	Ex Factory Price (Excluding VAT)		Inland transportation to site including insurance		Total Amount (Excluding Taxes)
				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
g.	Limit switch and Aux. Switches for complete 3 phase equipment							
g.1	For isolator	Sets	1					
g.2	For earth switch	Sets	1					
iv)	36 KV CURRENT TRANSFORMER							
a.	Gas insulated complete CT of each type and rating with enclosure.	Nos.	1					
b.	Secondary bushing of each type	Sets	1					
v)	36 kV VOLTAGE TRANSFORMER							
a.	Gas insulated complete PT of each type and rating with enclosure.	Nos.	1					
(V)	SPARES FOR AIS EQUIPMENTS							
(A)	72.5 kV CB							
i)	Complete Pole of circuit breaker including pole column, interrupter, with driving mechanism and Marshaling Box but without support structure for							
	1250A, 31.5 KA (No. of Pole)	No.	1					
ii)	Rubber gaskets, 'O' rings and seals (for complete replacement of one pole of CB)	Set	1					
iii)	Trip coils with resistor	Nos.	2					
iv)	Closing coils with resistor	Nos.	1					
v)	Terminal Pads & connectors	Nos.	2					
vi)	Molecular filter	Nos.	2					
vii)	Relays, Power contactors, switch fuse units, limit switches, push buttons, timers & MCB etc. (1 no. of each type)	Set	1					
viii)	Pressure switches / Density monitor (1 no. of each type)	Set	1					
ix)	Auxiliary switch assembly (for one pole of CB)	Set	1					
(B)	72.5kV Isolator							
i)	One complete pole including support Insulator, MANUAL operating mechanism with box but excluding structure							
	1250A, 31.5KA, 1 E/S (no. of pole)	No.	1					
ii)	Copper contact fingers for male & female contacts (for one pole of Isolator)	Set	2					

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

All prices in Nepalese Local Currency (NRs)

Item No.	Item description	Unit	Quantity	Ex Factory Price (Excluding VAT)		Inland transportation to site including insurance		Total Amount (Excluding Taxes)
				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
iii)	Open/Close contactor assembly, timers, key interlock push button switch & auxilliary switches (for one pole of Isolator)	Set	1					
iv)	Limit Switch	Nos.	2					
v)	Terminal Pads & Connectors	Nos.	3					
(F)	CT(72.5 kV,1250A with 120% extended current rating)	No.	1					
(I)	72.5kV PT	No.	1					
(J)	216 SA							
i)	Complete LA	No.	1					
ii)	Surge counter/monitor	Nos.	5					
(F)	120kV SA							
i)	Complete LA	No.	1					
ii)	Surge counter/monitor	Nos.	5					
(G)	C&R PANELS							
i)	Transformer protection panel :							
a)	Transformer differential protection	No.	1					
b)	REF protection relay with non-linear resistor	No.	1					
c)	Directional over current & E/F Protection Relay	No.	1					
ii)	Line protection panel :							
a)	Distance Protection relay- Main-1	No.	1					
b)	Current differential Protection relay- Main-2	No.	1					
iv)	Breaker Relay panel:							
a)	Breaker failure relay	No.	1					
b)	Trip circuit supervision relay	Nos.	2					
c)	Self reset trip relay (relay of each type)	Set	1					
d)	Hand reset trip relay(relay of each type)	Set	1					
e)	Timer relay(relay of each type)	Set	1					
f)	DC supervision relay(relay of each type)	Set	1					
g)	Flag relays(relay of each type)	Set	1					
h)	Auxiliary relays(relay of each type)	Set	1					
(H)	Teleprotection Equipments							
ii)	Set of prints for protection coupler(digital)	Set	1					

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

All prices in Nepalese Local Currency (NRs)

Item No.	Item description	Unit	Quantity	Ex Factory Price (Excluding VAT)		Inland transportation to site including insurance		Total Amount (Excluding Taxes)
				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
(I)	SAS							
i)	Bay Control Unit (IED) of each type	Set	1					
ii)	Ethernet Switch of each type	Set	1					
(J)	BATTERY CHARGER							
J1	220 Volt							
i)	Set of control cards	Set	1					
ii)	Set of relays	Set	1					
iii)	Rectifier transformer	No.	1					
iv)	Thyristor/diode	Set	1					
v)	Fuses of Thyristor with indicators	Set	6					
J2	48 Volt							
i)	Set of control cards	Set	1					
ii)	Set of relays	Set	1					
iii)	Rectifier transformer	No.	1					
iv)	Thyristor/diode	Set	1					
v)	Fuses of Thyristor with indicators	Set	6					
K.	Fire protection System							
a.	Deluge Valve of each type	Set	1					
L.	DG SETS :							
a.	Self starter assembly	No.	1					
b.	AVR (Auto Voltage Regulator)/ AVR card	set	1					
(M)	COMMON SPARES							
i)	Bay unit Module	No.	1					
ii)	2 wire local subscriber interface card for PABX	No.	1					
iii)	E1 Interface card for PABX	No.	1					
1.0	SDH Equipment (STM-4 MADM upto 3 MSP protected directions)							
(i)	Common cards, Cross-connect/control cards, Optical base card, Power supply cards, power cabling, other hardware & accessories (each).	Set	1					

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

All prices in Nepalese Local Currency (NRs)

Item No.	Item description	Unit	Quantity	Ex Factory Price (Excluding VAT)		Inland transportation to site including insurance		Total Amount (Excluding Taxes)
				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
(ii)	Optical Interface Cards/SFP#							
a	S4.1 SFP	Nos.	0					
b	L4.1 SFP	Nos.	1					
c	L4.2 SFP	Nos.	0					
(iii)	Tributary cards							
a	E1 Interface card (Min.16 interfaces)	Nos.	1					
b	Ethernet Interface 10/100 Base T with Layer-2 switching (Min 4 Interfaces per card)	Nos.	1					
2.0	VOIP telephone instrument	Nos.	1					
3.0	Pre Connectorized Optical Fiber Patch Cords(10 Mtrs) – Pack of six Patch cords	Set	1					
Total of Part A+Part B + Part C for Manang Substation (Total of column 9 to be carried forward to Schedule No. 2 (Total))								

Name of Bidder:

Signature of Bidder:

(Printed Name)

(Designation)

(Common Seal)

NEPAL ELECTRICITY AUTHORITY
PROJECT MANAGEMENT DIRECTORATE
MARSYANGDI CORRIDOR 220 kV TRANSMISSION LINE PROJECT

(I) 220/132/33kV Manang (new) GIS Substation and (II)220/132/33kV Khudi (new) GIS Substation

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

All prices in Nepalese Local Currency (NRs)

Item No.	Item description	Unit	Quantity	Ex Factory Price (Excluding VAT)		Inland transportation to site including insurance		Total Amount (Excluding Taxes)
				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
Part-A : EMPLOYER ASSESSED QUANTITIES								
A.1	POWER TRANSFORMER							
A1.1	POWER TRANSFORMER							
a)	53.33MVA , 220/132/33 KV, 1-phase Autotransformer (Excluding insulating oil) with RIP Bushing as per TS	Nos.	4					
b)	Insulating oil for 53.33MVA , 220/132/33 KV, 1-phase Autotransformer (1Lot = Oil for 1Autotransformers)	Lot	4					
c)	33kV Current transformer (NCT) for autotransformer	No	1					
d)	Nitrogen Injection type Fire Protection system including underground oil tank	Set	4					
A1.2	POWER TRANSFORMER							
a)	50MVA , 132/33 KV, 3-phase transformer (Excluding insulating oil) with RIP Bushing as per TS	Nos.	1					
b)	Insulating oil for 50MVA , 132/33 KV, 3-phase transformer (1Lot = Oil for 1Autotransformers)	Lot	1					
c)	Nitrogen Injection type Fire Protection system including underground oil tank	Set	1					
A1.3	Testing & Maintenance Equipments							
a)	Oil Storage Tank (10KL size)	No.	1					
b)	Transformer Oil Filtration plant (6KLPH)	No	1					
A2	LT TRANSFORMER							
1.0	630 kVA,33/0.400kV	Nos	2					
B	245 kV equipment							
B1	245KV GIS Equipment							
1.01	245kV, SF6 GIS Bus Bars Module [Module description as per Technical specification]	Set	2					

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

All prices in Nepalese Local Currency (NRs)

Item No.	Item description	Unit	Quantity	Ex Factory Price (Excluding VAT)		Inland transportation to site including insurance		Total Amount (Excluding Taxes)
				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
1.02	245kV, SF6 GIS ICT bay Module [Module description as per Technical specification]	Set	2					
1.03	245kV, 1600Amp, SF6 GIS Line bay Module [Module description as per Technical specification]	Set	6					
1.04	245kV, 2400 Amps SF6 GIS Line bay Module [Module description as per Technical specification]	Set	2					
1.05	245kV, SF6 GIS Bus coupler bay Module [Module description as per Technical specification]	Set	1					
1.06	245 kV Auxiliary Bus to connect spare unit of Transformer [Module description as per Technical specification]	Set	1					
1.07	245kV, 1600A,40kA SF6/Air Bushing for Connecting GIS to AIS alongwith support structure (Single Phase)	Nos	22					
1.08	245kV, 2400A,40kA SF6/Air Bushing for Connecting GIS to AIS alongwith support structure (Single Phase)	Nos	6					
1.09	245kV, 1600A, 1phase SF6 GIS Bus duct alongwith support structure	Mtr	1500					
1.10	245kV, 2400A, 1phase SF6 GIS Bus duct alongwith support structure	Mtr	200					
B2	245KV Outdoor Equipment							
1.1	216 KV Surge Arrester (1-phase)	Nos.	31					
1.2	245kv BPI	Nos.	50					
C	145KV Equipment							
C1	145KV GIS Equipment							
1.01	145kV, SF6 GIS Bus Bars Module [Module description as per Technical specification]	Set	2					
1.02	145kV, SF6 GIS Transformer bay Module [Module description as per Technical specification for 220/132kV ICT]	Set	2					
1.03	145kV, SF6 GIS Transformer bay Module [Module description as per Technical specification for 132/33kV ICT]	Set	1					
1.04	145kV, SF6 GIS Line bay Module [Module description as per Technical specification]	Set	6					
1.05	145kV, SF6 GIS Bus Coupler bay Module [Module description as per Technical specification]	Set	1					

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

All prices in Nepalese Local Currency (NRs)

Item No.	Item description	Unit	Quantity	Ex Factory Price (Excluding VAT)		Inland transportation to site including insurance		Total Amount (Excluding Taxes)
				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
1.06	145 kV Auxiliary Bus to connect spare unit of Transformer [Module description as per Technical specification]	Set	1					
C2	145KV Outdoor Equipment							
1.1	120KV Surge Arrester (1-phase)	Nos.	28					
1.2	145kV BPI	Nos.	30					
C3	132 kV Cu condctor, XLPE cable and accessories							
1.1	132 kV, 1C x 1200 sq.mm Copper, XLPE cable as per Technical specification	Mtr	1500					
1.2	132 kV, 1C x 500 sq.mm Copper, XLPE cable as per Technical specification	Mtr	600					
1.3	132 kV, 1C x 300 sq.mm Copper, XLPE cable as per Technical specification	Mtr	300					
1.4	132 KV Termination kit suitable for 132KV, 1CX 1200 sq.mm XLPE Cable alongwith with support Structure for EHV Cable	Nos	18					
1.5	132 KV Termination kit suitable for 132KV, 1CX 500 sq.mm XLPE Cable alongwith with support Structure for EHV Cable	Nos	7					
1.6	132 KV Termination kit suitable for 132KV, 1CX300 sq.mm XLPE Cable alongwith with support Structure for EHV Cable	Nos	3					
D1	36KV GIS Equipment							
1.01	Indoor switchgear panels (GIS type) IP1 type	Set	1					
1.02	Indoor Switchgear Panels (GIS type) IP 2 type	Set	8					
1.03	Indoor switchgear panels (GIS type) IP3 type	Set	1					
1.04	Indoor switchgear panels (GIS type) IP4 Type	Set	1					
D2	36kV XLPE cable and its termination for connection of 33 kV side of 132/33 kV Transformer to 36kV GIS bay and line bays							
(i)	33kV, 1C x 400 sq.mm Copper, XLPE cable as per Technical specification	Mtr	2500					
(ii)	33KV Termination kit suitable for 1C x 400 sq.mm Copper, XLPE cable alongwith with support Structure	Nos	36					

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

All prices in Nepalese Local Currency (NRs)

Item No.	Item description	Unit	Quantity	Ex Factory Price (Excluding VAT)		Inland transportation to site including insurance		Total Amount (Excluding Taxes)
				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
D3	36 kV XLPE 1-Ph cable and its termination for connection of 33 kV side of 630 kVA, 33/0.400KV LT Transformer from available HT external supply							
(i)	36 kV XLPE 3C, 120sqmm Copper, XLPE cable as per Technical Specification	Mtr	500					
(ii)	33KV, 3 Phase Termination kit suitable for above 120 sqmm Copper cable, Sets for all three phase	Set	3					
D4	36 kV Equipment for LT Transformer							
1.0	36 kV Isolator (3-phase)-HDB							
(i)	1250A, 25 KA, Isolator	No	10					
2.0	30 kV Surge Arrestors (1-Phase)	Nos	30					
3.0	36kV Horn Gap Fuse (3-Phase)	No	1					
4.0	36 kV BPI	Nos	36					
E	Testing & Maintenance Equipment for GIS							
(i)	SF6 Gas filling & evacuating plant							
	For 245kV, 145kV & 36kV GIS	Set	1					
(ii)	Partial Discharge Monitoring System for GIS as per Technical Specification							
(a)	For 245kV GIS	Set	1					
(b)	For 145kV GIS	Set	1					
(c)	For 36kV GIS	Set	1					
(iii)	Dew Point meter							
	For 245kV, 145kV & 36kV GIS	Set	1					
(iv)	SF6 Gas Leak Detector							
	For 245kV, 145kV & 36kV GIS	Set	1					
(v)	EOT crane for 245kV GIS Hall	Set	1					
(vi)	EOT crane for 145kV GIS Hall	Set	1					
(vii)	SF6 Gas Analyser	Set	1					
F	72.5kV EQUIPMENT							
1.1	72.5 kV, 1250A, 31.5kA Circuit Breaker (3-phase) with support structure	No.	1					
1.2	72.5 kV, 1250A,31.5kA Isolators with earth switch (3-phase, DBR type)	No.	1					

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

All prices in Nepalese Local Currency (NRs)

Item No.	Item description	Unit	Quantity	Ex Factory Price (Excluding VAT)		Inland transportation to site including insurance		Total Amount (Excluding Taxes)
				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
1.3	72.5kV, 1250A, 31.5 kA with 120% extended rating CT.	Nos.	3					
1.4	72.5kV PT.(1-phase)	Nos.	3					
1.5	72.5 kV BPI (1-phase)	Nos.	6					
G	RELAY PANELS (WITH AUTOMATION)							
1.0	220 kV							
a	Circuit Breaker Relay Panel							
i	With Auto Reclose	Set	8					
ii	With out Auto Reclose	Set	3					
b	Line Protection Panel							
i	For 220 kV lines (in which current differential relay will be supplied from other contract)	Set	2					
ii	For 220 kV lines	Set	6					
d	Transformer Protection Panel (For both HV & MV side for 220/132kV ICT)	Set	1					
e	Bus Bar Protection Panel	Set	1					
2.0	132 kV							
a	Circuit Breaker Relay Panel							
i)	With out Auto Reclose	Set	10					
b	Line Protection Panel	Set	6					
c	Transformer Protection Panel (For both HV & MV side for 132/33kV ICT)	Set	1					
d	Bus Bar Protection Panel	Set	1					
H	COMMON EQUIPMENTS							
1.0	Relay Test tool kit	Set	1					
2.0	Time synchronisation equipment	No.	1					
J	SUBSTATION AUTOMATION							
J.1	Complete Substation Automation System (SAS) for substation including hardware and software for the substation & remote control stations alongwith associated equipments for the following bays as per Technical Specification							
a	Main bays to be automated							
i	220 kV system	Bay Nos	11					

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

All prices in Nepalese Local Currency (NRs)

Item No.	Item description	Unit	Quantity	Ex Factory Price (Excluding VAT)		Inland transportation to site including insurance		Total Amount (Excluding Taxes)
				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
ii	132 kV system	Bay Nos	10					
iii	33 kV system	Bay Nos	12					
iv)	BCU for controlling & monitoring of Auxilary System	Set	1					
K	Teleprotection & communication Equipments							
i)	Digital Protection Coupler 220 kV & 132 kV)	Set	14					
ii)	Digital Protection Coupler(for other end)	Nos	26					
iii)	PBAX with following configuration as per TS	Set	1					
a)	2 wire subscriber interface card with capacity 32 local subscribers (along with 32 nos. Instruments)							
b)	4 wire E & M interface card with capacity 8 nos. trunks (For PLCC)							
c)	E-1 interface with 2 trunks G-703							
d)	2 wire interface with 1 trunk (For PSTN)							
iv)	Testing & Maintenance equipment (print test kit only)	Set	1					
v)	4 wire telephone equipment	No	1					
L	LT Switchgear (As per Technical specification)							
a	415V Main switchboard	Set	1					
b	415V ACDB	Set	1					
c	415V MLDB	Set	1					
d	415V Emergency LDB	Set	1					
e	220V DCDB	Sets	2					
f	48 V DCDB	Sets	2					
M	Batteries							
a	220V							
i	600 AH	Nos	2					
b	48V							
i	600 AH	Nos	2					
N	Float Cum Boost Battery Charger							
a	220V Float Cum Boost Battery Charger							
i	80A/80A	Nos	2					
b	48V Float Cum Boost Battery Charger							
ii	80A/80A	Nos	2					

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

All prices in Nepalese Local Currency (NRs)

Item No.	Item description	Unit	Quantity	Ex Factory Price (Excluding VAT)		Inland transportation to site including insurance		Total Amount (Excluding Taxes)
				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
O	Silent Type Diesel Generator with control Panel							
a	250 kVA	Set	1					
P	Fire Protection System							
a	Portable /Trolley/Wheel mounted extinguishers							
i	9 litre water type	Nos	5					
ii	50 litre foam type	Nos	2					
iii	4.5 kg CO ₂ type	Nos	25					
iv	4.5 kg Dry Chemical Power (DCP) type	Nos	5					
Q	Cables along with clamps, glands, lugs and straight joints etc.							
(a)	Power Cables - (1.1kV grade)							
i	3.5Cx300 sqmm (XLPE) cable for filter Machine along with termination arrangement as per TS	KM	1					
R	Air conditioning System for Control room cum administrative building, Township Quarters etc							
a	High wall type split AC unit of 2 TR capacity	Nos	35					
S	Fabrication, galvanising and supply of following Steel Structures including nuts, bolts, all types of washers, packplates, step bolts and gusset plates including foundation bolts.							
(a)	Lattice Structure including Foundation Bolts	MT	155					
(b)	Pipe Structure including Foundation Bolts .	MT	50					
(c)	Fastners and step bolts.(Nuts,Bolts & Washers)	MT	10					
T	Telecom Equipments							
A	SDH Equipment (STM-4 MADM upto 3 MSP protected directions)							
(i)	Base Equipment (Common cards, Cross Connect/control cards, optical base cards, power supply cards, power cabling, other hardware and accessories including sub racks, patch cord, DDF etc fully equipped excluding (ii) & (iii) below	Nos.	1					

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

All prices in Nepalese Local Currency (NRs)

Item No.	Item description	Unit	Quantity	Ex Factory Price (Excluding VAT)		Inland transportation to site including insurance		Total Amount (Excluding Taxes)
				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
(ii)	Optical Interface Cards/SFP#							
a	S4.1 SFP	Nos.	2					
b	L4.1 SFP	Nos.	3					
c	L4.2 SFP	Nos.	0					
(iii)	Tributary cards							
a	E1 Interface card (Min.16 interfaces per card)	Nos.	2					
b	Ethernet Interface 10/100 Base T with Layer-2 switching (Min 4 Interfaces per card)	Nos.	2					
B	Equipment Cabinets	No.	1					
2.0	Network Manager System - Craft Terminal							
a	Hardware	Set\$	1					
b	Software	Set\$	1					
3.0	VOIP telephone instrument with one common switch (min. 4 port)							
a	Hardware with 2 nos of telephone	Nos.	1					
b	Software	Nos.	1					
U	PRE-ENGINEERED BUILDINGS							
	220 kV GIS Hall including all supply materials from abroad except civil works and for civil works refer schedule 4(a)							
(a)	220 kV GIS Hall	Sq. M.	900					
(b)	AHU / Panel Room	Sq. M.	240					
	132 kV GIS Hall and Panel Rooms including all supply materials from abroad except civil works and for civil works refer schedule 4(a)							
(a)	132 kV GIS Hall	Sq. M.	450					
(b)	AHU / Panel Room	Sq. M.	150.00					
	33 kV GIS Hall and Panel Rooms including all supply materials from abroad except civil works and for civil works refer schedule 4(a)							

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

All prices in Nepalese Local Currency (NRs)

Item No.	Item description	Unit	Quantity	Ex Factory Price (Excluding VAT)		Inland transportation to site including insurance		Total Amount (Excluding Taxes)
				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
(a)	33 kV GIS Hall	Sq. M.	150					
(b)	AHU / Panel Room	Sq. M.	50					
V	Misc. Structural steel including rails, embedments, edge protection angles, gratings etc. but excluding the reinforcement steel and steel for lattice and pipe structures.	MT	215					
W	Other Items							
(a)	220-250 ton Capacity all terrain mobile crane as per Technical Specification	no	1					
(b)	Magnetic Field measurement equipment with max range upto 200 micro Tesla suitable for the measurement of Magnetic field at ROW of Line	no	1					
©	Electric field measurement equipment with max range upto 20 kV/mtr suitable for the measurement of Electric field at ROW of Line	no	1					

Part-B: VENDOR ASSESSED QUANTITIES

A	Erection Hardware							
	Insulator strings, Disc Insulators, Hardware, HTLS conductor & ACSR Conductor, Al tube, bus-bar materials, cable trays, clamps, spacers, connectors including equipment connectors, Junction box, earthwire, buried cable trenches/pipe equipment & lighting, all accessories etc. for the following:							
a	245kV GIS Termination Arrangement:							
i	Line Bay	Set	8					
ii	Transformer Bay (including 220 kV AIS connection for spare unit with GIS auxiliary bus module)	Set	1					
b	145kV GIS Termination Arrangement:							
i	Line Bay	Set	6					
ii	Transformer Bay (including 132 kV AIS connection for spare unit with GIS auxiliary bus module for 220/132 kV auto Transformer)	Set	1					
iii	Transformer Bay for 132/33 kV Transformer	Set	1					

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

All prices in Nepalese Local Currency (NRs)

Item No.	Item description	Unit	Quantity	Ex Factory Price (Excluding VAT)		Inland transportation to site including insurance		Total Amount (Excluding Taxes)
				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
c	For spare unit of 220/132/36 kV auto transformer connection through auxiliary buses (tertiary & Neutral auxiliary buses only), Neutral formation and delta formation (for one bank): Required 72.5 kV BPI for tertiary auxiliary bus & delta formation, 36 kV BPI for Neutral formation & Neutral auxiliary bus including Al tube, bus-bar materials, clamps, spacers, connectors, including equipment connectors, support structures , Earthing of spare unit as per technical specification.	Set	1					
d	72.5kV LT Transformer connection	Set	1					
e	33kV LT Transformer connection	Set	1					
f	33kV Transformer bay	Set	1					
g	33kV Line bays	Set	8					
h	Earthing and lightning protection including necessary connectors/connections, risers etc. complete in all respect(but excluding LM structures for Lightning protection)							
i	Earth Conductor (copper)	LS	1					
ii	Earth Rod (copper clad steel)	LS	1					
iii	Equipment for lightning protection	LS	1					
B	Fire Protection System							
a	Pumping arrangement for Hydrant system, complete with all piping, valves, fittings,etc. inside pump house							
i	220/132kV (New) Substation	Set	1					
b	Hydrant system, complete U/G piping and accessories etc. outside the Pump House.							
i	220/132kV (New) Substation	Set	1					
c	Fire & Smoke detection and Alarm System							
(i)	Control room building	Set	1					
(ii)	220 kV GIS building	Set	1					
(iii)	132 kV GIS building	Set	1					
(iv)	33kV GIS building	Set	1					
(v)	Fire Fighting Pump House	Set	1					
C	Illumination System							
a	Control room cum administrative building illumination	LS	1					

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

All prices in Nepalese Local Currency (NRs)

Item No.	Item description	Unit	Quantity	Ex Factory Price (Excluding VAT)		Inland transportation to site including insurance		Total Amount (Excluding Taxes)
				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
b	Fire fighting building illumination	LS	1					
c	Switchyard lighting	LS	1					
d	Street lighting	LS	1					
e	Transit Camp illumination	LS	1					
f	245kV, 132 kV & 33 kV GIS Building including panel room	LS	1					
g	Township quarter (B-Type, 4 nos)	LS	1					
h	Township quarter (C-Type, 4 nos)	LS	1					
i	Township quarter (D-Type, 1 nos)	LS	1					
j	Car parkings	LS	1					
k	Recreation hall & Gym hall for staff community	LS	1					
l	Valley ball court	LS	1					
m	Badminton court	LS	1					
D	Air conditioning & ventilation System							
D.1	Air conditioning system							
(i)	Panel room in 245kV GIS Hall	LS	1					
(ii)	Panel room in 145kV GIS Hall	LS	1					
(iii)	Panel room in 36kV GIS Hall	LS	1					
D.2	Ventilation system							
(i)	245KV GIS hall	LS	1					
(ii)	145KV GIS hall	LS	1					
G	POWER & CONTROL CABLES							
a	Power Cables(PVC)- (1.1kV grade)	LS	1					
b	Power Cables (XLPE)(excluding 3.5Cx300 sqmm (XLPE) cable for filter Machine)- (1.1kV grade)	LS	1					
c	Control Cable (PVC)- (1.1kV grade)	LS	1					
d	Cable glands, lugs & straight through joints for Power & Control cables	LS	1					
Part-C: Mandatory Spares								
(i)	Mandatory Spare List for Transformer							
(ii)	For 53.33MVA , 220/132/33 KV, 1-phase Autotransformer							
a)	RIP Bushing of each rating with metal parts & gaskets and lifting tools	Set	1					

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

All prices in Nepalese Local Currency (NRs)

Item No.	Item description	Unit	Quantity	Ex Factory Price (Excluding VAT)		Inland transportation to site including insurance		Total Amount (Excluding Taxes)
				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
b)	Cooler fan with Motor	No.	1					
c)	Buchholz Relay(Main Tank) complete with floats and contacts	Set	1					
d)	Local and Remote WTI with sensing device and contact(each)	Set	1					
e)	Magnetic oil level gauge	No.	1					
f)	Starters, contactors,switches & Relays for Electrical control panels(One ste of each type)	Set	1					
g)	Remote Tap postion Indiator	No.	1					
h)	Spare insulating oil to be handed over to Owner after commisioning for O&M requirement	KL	10					
(ii)	For 50MVA , 132/33 KV, 3-phase transformer							
a)	RIP Bushing of each rating with metal parts & gaskets and lifting tools	Set	1					
b)	Cooler fan with Motor	No.	1					
c)	Buchholz Relay(Main Tank) complete with floats and contacts	Set	1					
d)	Local and Remote WTI with sensing device and contact(each)	Set	1					
e)	Magnetic oil level gauge	No.	1					
f)	Starters, contactors,switches & Relays for Electrical control panels(One ste of each type)	Set	1					
g)	Remote Tap postion Indiator	No.	1					
(II)	SPARES FOR 245kV GIS							
A)	General							
a.	Bus Bar Sections including Bus Bar Interconnection Modules, Bus Ducts Sections, Compensators/ expansion joints/bellows, Bends, end covers along with enclosure of each type. For each of the above module/enclosure all active parts such as conductor, conductor joints, corona shield etc of each type.	Set	1					
b.	SF6 gas Pressure Relief Device assembly of each type	Set	1					
c.	SF6 Pressure gauge cum switch / Density monitors and pressure switch as applicable, of each type	Set	5					
d.	Coupling device for pressure gauge cum switch for connecting Gas handling plant of each type	Set	2					
e.	Rubber Gaskets, "O" Rings and Seals for SF6 gas of each type	Set	5					

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

All prices in Nepalese Local Currency (NRs)

Item No.	Item description	Unit	Quantity	Ex Factory Price (Excluding VAT)		Inland transportation to site including insurance		Total Amount (Excluding Taxes)
				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
f.	Molecular filter for SF6 gas with filter bags (10 % of total weight)	Set	1					
g.	Control Valves for SF6 gas of each type	Set	3					
h.	SF6 gas (20 % of total gas quantity)	Set	1					
i.	Pipe length (Copper or Steel as applicable) for SF6 Circuit of each type (if applicable)	Set	2					
j.	Locking device to keep the Dis-connectors (Isolators) and Earthing/Fast Earthing switches in close or open position in case of removal of the driving Mechanism	set	2					
k.	UHF PD Sensors of each type along with BNC Connector	Nos.	5					
l.	Support Insulators of each type	Set.	10					
m.	Gas Barriers of each type	Set	1					
n.	SF6 to air bushing of each type & rating complete in all respect	Set	2					
B)	245 KV SF6 CIRCUIT BREAKER:							
a.	Complete (3-Ph or 3X1-phase, as applicable)Circuit Breaker without PIR complete with interrupter, main circuit, enclosure and Marshalling Box with operating mechanism to enable replacement of all applicable type/rating of CB by spare .	Nos.	1					
b.	Rubber gaskets, 'O' rings and seals for SF6 gas (1 No. of each type)	Sets	1					
c.	Trip coil assembly with resistor as applicable	Sets	1					
d.	Closing coil assembly with resistor as applicable .	Sets	1					
e.	Relays, Power contactors, push buttons, timers & MCBs etc (1 No. of each type & rating)	Sets	1					
f.	Closing coil assembly (including valve, if applicable)	Sets	1					
g.	Trip coil assembly (including valve, if applicable)	Sets	1					
h.	Auxiliary switch assembly of each type	Sets	1					
C)	245 KV ISOLATORS :							
a.	Complete set of 3-phase dis-connector of each type including main circuit, enclosure, driving mechanism and support Insulator etc to enable complete replacement of all applicable type/rating of Isolator by spare	Sets	1					

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

All prices in Nepalese Local Currency (NRs)

Item No.	Item description	Unit	Quantity	Ex Factory Price (Excluding VAT)		Inland transportation to site including insurance		Total Amount (Excluding Taxes)
				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
b.	Single Phase/ 3-phase Earthing switch including main circuit, enclosure, driving mechanism.	Sets	1					
c.	Copper contact fingers for dis-connector male & female contact for one complete (3-phase) dis-connector of each type and rating	Sets	1					
d.	Copper contact fingers for earthing switch male & female contacts, for one complete(3-phase) earthing switch of each type and rating	Sets	1					
e.	Open / Close contactor assembly, timers, key interlock for one complete (3 phase) dis-connector and (3 phase) earthing switch (1 No. of each type and rating)	Sets	1					
f.	Push button switch - (1 No. of each type & rating) as applicable	Sets	1					
g.	Limit switch and Aux. Switches for complete 3 phase equipment							
g.1	For isolator	Sets	1					
g.2	For earth switch	Sets	1					
D)	245 KV CURRENT TRANSFORMER							
a.	Gas insulated complete CT of each type and rating with enclosure.	Nos.	1					
b.	Secondary bushing of each type	Sets	1					
E)	245 kV VOLTAGE TRANSFORMER							
a.	Gas insulated complete PT of each type and rating with enclosure.	Nos.	1					
(III)	SPARES FOR 145kV GIS							
A)	General							
a.	Bus Bar Sections including Bus Bar Interconnection Modules, Bus Ducts Sections, Compensators/ expansion joints/bellows, Bends, end covers along with enclosure of each type. For each of the above module/enclosure all active parts such as conductor, conductor joints, corona shield etc of each type.	Set	1					
b.	SF6 gas Pressure Relief Device assembly of each type	Set	1					
c.	SF6 Pressure gauge cum switch / Density monitors and pressure switch as applicable, of each type	Set	5					
d.	Coupling device for pressure gauge cum switch for connecting Gas handling plant of each type	Set	2					

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

All prices in Nepalese Local Currency (NRs)

Item No.	Item description	Unit	Quantity	Ex Factory Price (Excluding VAT)		Inland transportation to site including insurance		Total Amount (Excluding Taxes)
				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
e.	Rubber Gaskets, "O" Rings and Seals for SF6 gas of each type	Set	5					
f.	Molecular filter for SF6 gas with filter bags (10 % of total weight)	Set	1					
g.	Control Valves for SF6 gas of each type	Set	3					
h.	SF6 gas (20 % of total gas quantity)	Set	1					
i.	Pipe length (Copper or Steel as applicable) for SF6 Circuit of each type (if applicable)	Set	2					
j.	Locking device to keep the Dis-connectors (Isolators) and Earthing/Fast Earthing switches in close or open position in case of removal of the driving Mechanism	set	2					
j.1	UHF PD Sensors of each type along with BNC Connector	Nos.	5					
j.2	Support Insulators of each type	Set.	10					
k	Gas Barriers of each type	Set	1					
l	SF6 to air bushing of each type & rating complete in all respect	Set	2					
B)	145 KV SF6 CIRCUIT BREAKER:							
a.	Complete (3-Ph or 3X1-phase, as applicable)Circuit Breaker without PIR complete with interrupter, main circuit, enclosure and Marshalling Box with operating mechanism to enable replacement of all applicable type/rating of CB by spare .	Nos.	1					
b.	Rubber gaskets, 'O' rings and seals for SF6 gas (1 No. of each type)	Sets	1					
c.	Trip coil assembly with resistor as applicable	Sets	1					
d.	Closing coil assembly with resistor as applicable .	Sets	1					
e.	Relays, Power contactors, push buttons, timers & MCBs etc (1 No. of each type & rating)	Sets	1					
f.	Closing coil assembly (including valve, if applicable)	Sets	1					
g.	Trip coil assembly (including valve, if applicable)	Sets	1					
h.	Auxiliary switch assembly of each type	Sets	1					
C)	145 KV ISOLATORS :							
a.	Complete set of 3-phase dis-connector of each type including main circuit, enclosure, driving mechanism and support Insulator etc to enable complete replacement of all applicable type/rating of Isolator by spare	Sets	1					

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

All prices in Nepalese Local Currency (NRs)

Item No.	Item description	Unit	Quantity	Ex Factory Price (Excluding VAT)		Inland transportation to site including insurance		Total Amount (Excluding Taxes)
				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
b.	Single Phase/ 3-phase Earthing switch including main circuit, enclosure, driving mechanism.	Sets	1					
c.	Copper contact fingers for dis-connector male & female contact for one complete (3-phase) dis-connector of each type and rating	Sets	1					
d.	Copper contact fingers for earthing switch male & female contacts, for one complete(3-phase) earthing switch of each type and rating	Sets	1					
e.	Open / Close contactor assembly, timers, key interlock for one complete (3 phase) dis-connector and (3 phase) earthing switch (1 No. of each type and rating)	Sets	1					
f.	Push button switch - (1 No. of each type & rating) as applicable	Sets	1					
g.	Limit switch and Aux. Switches for complete 3 phase equipment							
g.1	For isolator	Sets	1					
g.2	For earth switch	Sets	1					
D)	145 KV CURRENT TRANSFORMER							
a.	Gas insulated complete CT of each type and rating with enclosure.	Nos.	1					
b.	Secondary bushing of each type	Sets	1					
E)	145 kV VOLTAGE TRANSFORMER							
a.	Gas insulated complete PT of each type and rating with enclosure.	Nos.	1					
(IV)	SPARES FOR 36kV GIS							
i)	General							
a.	SF6 gas Pressure Relief Devices, 1Nos. of each type	Set	1					
b.	SF6 Pressure gauge cum switch OR Density monitors and pressure switch as applicable (1 no. of each type)	Set	1					
c.	Coupling device for pressure gauge cum switch for connecting Gas handling plant	Set	1					
d.	Rubber Gaskets, "O" Rings and Seals for SF6 gas of each type	Set	1					
e.	Molecular filter for SF6 gas with filter bags(20% of total weight)	Set	1					
f.	All types of Control Valves for SF6 gas of each type	Set	1					
g.	SF6 gas (20 % of total gas quantity)	Set	1					
h.	All types of coupling for SF6 gas (1 no. of each type)	Set	1					

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

All prices in Nepalese Local Currency (NRs)

Item No.	Item description	Unit	Quantity	Ex Factory Price (Excluding VAT)		Inland transportation to site including insurance		Total Amount (Excluding Taxes)
				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
i.	Pipe length (Copper or Steel as applicable) for SF6 Circuit of each type	Set	1					
j.	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							
k.	For 3 Phase Enclosure if applicable	Nos.	1					
l.	For Single phase enclosure if applicable	Nos.	1					
m.	Locking device to keep the Dis-connectors (Isolators) and Earthing switches in close or open position in case of removal of the driving Mechanism	Sets	1					
n.	Bus Support insulator of each type for 3 phase/single phase enclosure.	Nos.	1					
ii)	36 KV SF6 CIRCUIT BREAKER:							
a.	Complete Circuit Breaker pole of each type & rating complete with interrupter, main circuit enclosure and Marshalling Box with operating mechanism	Nos.	1					
b.	Rubber gaskets, 'O' rings and seals for SF6 gas (1 No. of each type)	Sets	1					
c.	Trip coil assembly with resistor as applicable	Sets	1					
d.	Closing coil assembly with resistor as applicable .	Sets	1					
e.	Relays, Power contactors, push buttons, timers & MCBs etc (1 No. of each type & rating)	Sets	1					
f.	Closing coil assembly (including valve, if applicable)	Sets	1					
g.	Trip coil assembly (including valve, if applicable)	Sets	1					
h.	Auxiliary switch assembly of each type	Sets	1					
iii)	36KV ISOLATORS :							
a.	Complete set of 3-phase dis-connector including main circuit, enclosure, driving mechanism	Sets	1					
b.	Single Phase/ 3-phase Earthing switch including main circuit, enclosure, driving mechanism.	Sets	1					
c.	Copper contact fingers for dis-connector male & female contact for one complete (3-phase) dis-connector of each type and rating	Sets	1					
d.	Copper contact fingers for earthing switch male & female contacts, for one complete(3-phase) earthing switch of each type and rating	Sets	1					

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

All prices in Nepalese Local Currency (NRs)

Item No.	Item description	Unit	Quantity	Ex Factory Price (Excluding VAT)		Inland transportation to site including insurance		Total Amount (Excluding Taxes)
				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
e.	Open / Close contactor assembly, timers, key interlock for one complete (3 phase) dis-connector and (3 phase) earthing switch (1 No. of each type and rating)	Sets	1					
f.	Push button switch - (1 No. of each type & rating) as applicable	Sets	1					
g.	Limit switch and Aux. Switches for complete 3 phase equipment							
g.1	For isolator	Sets	1					
g.2	For earth switch	Sets	1					
iv)	36 KV CURRENT TRANSFORMER							
a.	Gas insulated complete CT of each type and rating with enclosure.	Nos.	1					
b.	Secondary bushing of each type	Sets	1					
v)	36 kV VOLTAGE TRANSFORMER							
a.	Gas insulated complete PT of each type and rating with enclosure.	Nos.	1					
(V)	SPARES FOR AIS EQUIPMENTS							
(A)	72.5 kV CB							
i)	Complete Pole of circuit breaker including pole column, interrupter, with driving mechanism and Marshaling Box but without support structure for							
	1250A, 31.5 KA (No. of Pole)	No.	1					
ii)	Rubber gaskets, 'O' rings and seals (for complete replacement of one pole of CB)	Set	1					
iii)	Trip coils with resistor	Nos.	2					
iv)	Closing coils with resistor	Nos.	1					
v)	Terminal Pads & connectors	Nos.	2					
vi)	Molecular filter	Nos.	2					
vii)	Relays, Power contactors, switch fuse units, limit switches, push buttons, timers & MCB etc. (1 no. of each type)	Set	1					
viii)	Pressure switches / Density monitor (1 no. of each type)	Set	1					
ix)	Auxiliary switch assembly (for one pole of CB)	Set	1					
(B)	72.5kV Isolator							

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

All prices in Nepalese Local Currency (NRs)

Item No.	Item description	Unit	Quantity	Ex Factory Price (Excluding VAT)		Inland transportation to site including insurance		Total Amount (Excluding Taxes)
				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
i)	One complete pole including support Insulator, MANUAL operating mechanism with box but excluding structure							
	1250A, 31.5KA, 1 E/S (no. of pole)	No.	1					
ii)	Copper contact fingers for male & female contacts (for one pole of Isolator)	Set	2					
iii)	Open/Close contactor assembly, timers, key interlock push button switch & auxilliary switches (for one pole of Isolator)	Set	1					
iv)	Limit Switch	Nos.	2					
v)	Terminal Pads & Connectors	Nos.	3					
(F)	CT(72.5 kV,1250A with 120% extended current rating)	No.	1					
(I)	72.5kV PT	No.	1					
(J)	216 SA							
i)	Complete LA	No.	1					
ii)	Surge counter/monitor	Nos.	5					
(F)	120kV SA							
i)	Complete LA	No.	1					
ii)	Surge counter/monitor	Nos.	5					
(G)	C&R PANELS							
i)	Transformer protection panel :							
a)	Transformer differential protection	No.	1					
b)	REF protection relay with non-linear resistor	No.	1					
c)	Directional over current & E/F Protection Relay	No.	1					
ii)	Line protection panel :							
a)	Distance Protection relay- Main-1	No.	1					
b)	Current differential Protection relay- Main-2	No.	1					
iv)	Breaker Relay panel:							
a)	Breaker failure relay	No.	1					
b)	Trip circuit supervision relay	Nos.	2					
c)	Self reset trip relay (relay of each type)	Set	1					
d)	Hand reset trip relay(relay of each type)	Set	1					
e)	Timer relay(relay of each type)	Set	1					
f)	DC supervision relay(relay of each type)	Set	1					
g)	Flag relays(relay of each type)	Set	1					

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

All prices in Nepalese Local Currency (NRs)

Item No.	Item description	Unit	Quantity	Ex Factory Price (Excluding VAT)		Inland transportation to site including insurance		Total Amount (Excluding Taxes)
				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
h)	Auxiliary relays(relay of each type)	Set	1					
(H)	Teleprotection Equipments							
ii)	Set of prints for protection coupler(digital)	Set	1					
(I)	SAS							
i)	Bay Control Unit (IED) of each type	Set	1					
ii)	Ethernet Switch of each type	Set	1					
(J)	BATTERY CHARGER							
J1	220 Volt							
i)	Set of control cards	Set	1					
ii)	Set of relays	Set	1					
iii)	Rectifier transformer	No.	1					
iv)	Thyristor/diode	Set	1					
v)	Fuses of Thyristor with indicators	Set	6					
J2	48 Volt							
i)	Set of control cards	Set	1					
ii)	Set of relays	Set	1					
iii)	Rectifier transformer	No.	1					
iv)	Thyristor/diode	Set	1					
v)	Fuses of Thyristor with indicators	Set	6					
K.	Fire protection System							
a.	Deluge Valve of each type	Set	1					
L.	DG SETS :							
a.	Self starter assembly	No.	1					
b.	AVR (Auto Voltage Regulator)/ AVR card	set	1					
(M)	COMMON SPARES							
i)	Bay unit Module	No.	1					
ii)	2 wire local subscriber interface card for PABX	No.	1					
iii)	E1 Interface card for PABX	No.	1					

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

All prices in Nepalese Local Currency (NRs)

Item No.	Item description	Unit	Quantity	Ex Factory Price (Excluding VAT)		Inland transportation to site including insurance		Total Amount (Excluding Taxes)
				Unit Rate	Amount	Unit Rate	Amount	
1	2	3	4	5	6=(4)x(5)	7	8=(4)x(7)	9=(6)+(8)
1.0	SDH Equipment (STM-4 MADM upto 3 MSP protected directions)							
(i)	Common cards, Cross-connect/control cards, Optical base card, Power supply cards, power cabling, other hardware & accessories (each).	Set	1					
(ii)	Optical Interface Cards/SFP#							
a	S4.1 SFP	Nos.	1					
b	L4.1 SFP	Nos.	1					
c	L4.2 SFP	Nos.	0					
(iii)	Tributary cards							
a	E1 Interface card (Min.16 interfaces)	Nos.	1					
b	Ethernet Interface 10/100 Base T with Layer-2 switching (Min 4 Interfaces per card)	Nos.	1					
2.0	VOIP telephone instrument	Nos.	1					
3.0	Pre Connectorized Optical Fiber Patch Cords(10 Mtrs) – Pack of six Patch cords	Set	1					
Total of Part A+Part B + Part C for Khudi Substation (Total of column 9 to be carried forward to Schedule No. 2(Total))								

Name of Bidder:

Signature of Bidder:

(Printed Name)

(Designation)

(Common Seal)

NEPAL ELECTRICITY AUTHORITY
PROJECT MANAGEMENT DIRECTORATE
MARSYANGDI CORRIDOR 220 kV TRANSMISSION LINE PROJECT

(I) 220/132/33kV Manang (new) GIS Substation and (II)220/132/33kV Khudi (new) GIS Substation

Schedule No.2: Plant and Equipment including Mandatory Spares Parts to be supplied from within Nepal (Manang and Khudi Substation Total)

Item No.	Description	Total Amount in NRs (Excluding VAT & Taxes)
1	2	3
a)	Total of Plant and Equipment including Mandatory Spares to be supplied from within Nepal for Manang Substation (Sch 2 (Manang))	
b)	Total of Plant and Equipment including Mandatory Spares to be supplied from within Nepal for Khudi Substation (Schedule 2 (Khudi))	
Total For Khudi and Manang Substation (Total of column 3 to be carried forward to Schedule No. 5: Grand Summary)		

Remarks #: Optical interface/SFP can be provided with Optical base card or Control card with the condition that control card and Optical base card shall not be equipped with more than two Optical interface/SFP. However main and protection channel shall be terminated on separate cards.

\$: Set shall include all required hardware/software for complete TMN –Craft Terminal system as specified in technical specifications.

\$\$: One Set means one of each type of module/unit card etc

** : Suitable Optical Interface Card(s) or any other solution such as SDH equipment with optical amplifier, wavelength translator or higher aggregate bit rate SDH equipment may be offered for the length to meet the link budget requirements without repeater

*: Set shall include all required hardware/software for complete TMN –Craft Terminal system as specified in technical specifications.

Name of Bidder:

Signature of Bidder:

(Printed Name)

(Designation)

(Common Seal)

**NEPAL ELECTRICITY AUTHORITY
PROJECT MANAGEMENT DIRECTORATE**

MARSYANGDI CORRIDOR 220 kV TRANSMISSION LINE PROJECT

(I) 220/132/33kV Manang (new) GIS Substation and (II) 220/132/33kV Khudi (new) GIS Substation

Schedule 3: Design Services

Item No.	Item Description	Estimated		Unit Prices			Total Prices	
				Local Currency Portion	Foreign Currency Portion			
		Quantity	Unit	NRs	Currency	Rate	LC	FC
1	2	3	4	5	6	7	8=3x5	9=3x7
1	Detail Design of Khudi New 220 kV GIS/ AIS substation Complete	1	Lot	Cost shall be Included in Schedule 1				
2	Detail Design of Manang New 220 kV GIS/ AIS substation Complete	1	Lot					
	Total (Total of column 8 and 9 to be carried forward to Schedule No. 5: Grand Summary)							

Name of Bidder:

Signature of Bidder:

(Printed Name)

(Designation)

(Common Seal)

NEPAL ELECTRICITY AUTHORITY
PROJECT MANAGEMENT DIRECTORATE
MARSYANGDI CORRIDOR 220 kV TRANSMISSION LINE PROJECT

(I) 220/132/33kV Manang (new) GIS Substation and (II)220/132/33kV Khudi (new) GIS Substation

Schedule No. 4 : Installation and Other Services

(a): Installation and Construction Charges (For Manang Substation)

Sl. No.	Item Description	Estimated		Installation Charges				
		Unit	Qty.	Portion in Foreign Currency			Portion In Nepalese Currency (In NRs)	
				Currency	Unit Rate	Total Charges	Unit Rate	Total Charges
1	2	3	4	5	6	7= (4) x (6)	8	9=(4) x (8)
	Part-A : EMPLOYER ASSESSED QUANTITIES							
A.1	POWER TRANSFORMER							
A1.1	POWER TRANSFORMER							
a)	33.33MVA , 220/132/33 KV, 1-phase Autotransformer (Excluding insulating oil)	Nos.	4					
b)	Insulating oil for 33.33MVA , 220/132/33 KV, 1-phase Autotransformer (1Lot = Oil for 1 Autotransformers)	Lot	4					
c)	33kV Current transformer (NCT) for autotransformer	No	1					
d)	Nitrogen Injection type Fire Protection system including underground oil tank	Set	4					
A1.2	POWER TRANSFORMER							
a)	30 MVA , 132/33 KV, 3-phase transformer (Excluding insulating oil)	Nos.	1					
b)	Insulating oil for 30.MVA , 132/33 KV, 3-phase transformer (1Lot = Oil for 1Autotransformers)	Lot	1					
c)	Nitrogen Injection type Fire Protection system including underground oil tank	Set	1					
A1.3	Testing & Maintenance Equipments							
a)	Oil Storage Tank (10KL size)	No	1					
b)	Transformer Oil Filtration plant (6KLPH)	No	1					
A2	LT TRANSFORMER							
1	630 kVA,33/0.400kV	Nos	2					
B	245 kV equipment							
B1	245KV GIS Equipment							
1.01	245kV, SF6 GIS Bus Bars Module [Module description as per Technical specification]	Set	2					
1.02	245kV, SF6 GIS ICT bay Module [Module description as per Technical specification]	Set	2					

Schedule No. 4 : Installation and Other Services

(a): Installation and Construction Charges (For Manang Substation)

Sl. No.	Item Description	Estimated		Installation Charges				
		Unit	Qty.	Portion in Foreign Currency			Portion In Nepalese Currency (In NRs)	
				Currency	Unit Rate	Total Charges	Unit Rate	Total Charges
1	2	3	4	5	6	7= (4) x (6)	8	9=(4) x (8)
1.03	245kV, SF6 GIS Line bay Module [Module description as per Technical specification]	Set	6					
1.04	245kV, SF6 GIS Bus Coupler bay Module [Module description as per Technical specification]	Set	1					
1.05	245 kV Auxiliary Bus to connect spare unit of Transformer [Module description as per Technical specification]	Set	1					
1.06	245kV, 1600A,40kA SF6/Air Bushing for Connecting GIS to AIS alongwith support structure (Single Phase)	Nos	25					
1.08	245kV, 1600A, 1phase SF6 GIS Bus duct alongwith support structure	Mtr	1200					
B2	245KV Outdoor Equipment							
1.01	216 KV Surge Arrester (1-phase)	Nos.	25					
1.02	245kV BPI	Nos.	30					
C	145KV Equipment							
C1	145KV GIS Equipment							
1.01	145kV, SF6 GIS Bus Bars Module [Module description as per Technical specification]	Set	2					
1.02	145kV, SF6 GIS Transformer bay Module [Module description as per Technical specification for 220/132kV ICT]	Set	2					
1.03	145kV, SF6 GIS Transformer bay Module [Module description as per Technical specification for 132/33kV ICT]	Set	1					
1.04	145kV, SF6 GIS Line bay Module [Module description as per Technical specification]	Set	6					
1.05	145kV, SF6 GIS Bus Coupler bay Module [Module description as per Technical specification]	Set	1					
1.06	145 kV Auxiliary Bus to connect spare unit of Transformer [Module description as per Technical specification]	Set	1					
C2	145KV Outdoor Equipment							
1.1	120KV Surge Arrester (1-phase)	Nos.	28					
1.2	145kV BPI	Nos.	30					
C3	132 kV Cu condctor, XLPE cable and accessories							
1.1	132 kV, 1C x 1200 sq.mm Copper, XLPE cable as per Technical specification	Mtr	1500					

Schedule No. 4 : Installation and Other Services

(a): Installation and Construction Charges (For Manang Substation)

Sl. No.	Item Description	Estimated		Installation Charges				
		Unit	Qty.	Portion in Foreign Currency			Portion In Nepalese Currency (In NRs)	
				Currency	Unit Rate	Total Charges	Unit Rate	Total Charges
1	2	3	4	5	6	7= (4) x (6)	8	9=(4) x (8)
1.2	132 kV, 1C x 500 sq.mm Copper, XLPE cable as per Technical specification	Mtr	600					
1.3	132 kV, 1C x 300 sq.mm Copper, XLPE cable as per Technical specification	Mtr	300					
1.4	132 KV Termination kit suitable for 132KV, 1CX 1200 sq.mm XLPE Cable alongwith with support Structure for EHV Cable	Nos	18					
1.5	132 KV Termination kit suitable for 132KV, 1CX 500 sq.mm XLPE Cable alongwith with support Structure for EHV Cable	Nos	7					
1.6	132 KV Termination kit suitable for 132KV, 1CX300 sq.mm XLPE Cable alongwith with support Structure for EHV Cable	Nos	3					
1.7	Construction of buried cable trench along with excavation, PCC, RCC, back filling, restoration (as per requirement) etc. as per technical specification (for six single core, 132kV, copper cable)(sand filled)	Mtr	180					
1.8	Construction of buried cable trench along with excavation, PCC, RCC, back filling, restoration (as per requirement) etc. as per technical specification (for Seven single core, 132kV, copper cable)(sand filled)	Mtr	80					
1.9	Construction of buried cable trench along with excavation, PCC, HDPE pipe back filling, restoration (as per requirement) etc. as per technical specification (for Six single core, 132kVcopper cable) (PCC trench)	Mtr	50					
1.10	Construction of buried cable trench along with excavation, PCC, HDPE pipe back filling, restoration (as per requirement) etc. as per technical specification (for seven single core, 132kVcopper cable) (PCC trench)	Mtr	50					
1.11	Construction of buried cable trench along with excavation, PCC, RCC, back filling, restoration (as per requirement) etc. as per technical specification (for three single core, 132kV, copper cable)(sand filled)	Mtr	100					
1.12	Construction of buried cable trench along with excavation, PCC, HDPE pipe back filling, restoration (as per requirement) etc. as per technical specification (for three single core, 132kVcopper cable) (PCC trench)	Mtr	50					
D	36KV Equipment							

Schedule No. 4 : Installation and Other Services

(a): Installation and Construction Charges (For Manang Substation)

Sl. No.	Item Description	Estimated		Installation Charges				
		Unit	Qty.	Portion in Foreign Currency			Portion In Nepalese Currency (In NRs)	
				Currency	Unit Rate	Total Charges	Unit Rate	Total Charges
1	2	3	4	5	6	7= (4) x (6)	8	9=(4) x (8)
D1	36KV GIS Equipment							
1.01	Indoor switchgear panels (GIS type) IP1 type	Set	1					
1.02	Indoor Switchgear Panels (GIS type) IP 2 type	Set	6					
1.03	Indoor switchgear panels (GIS type) IP3 type	Set	1					
1.04	Indoor switchgear panels (GIS type) IP4 Type	Set	1					
D2	36kV XLPE cable and its termination for connection of 33 kV side of 132/33 kV Transformer to 36kV GIS bay and line bays							
(i)	33kV, 1C x 400 sq.mm Copper, XLPE cable as per Technical specification	Mtr	2000					
(ii)	33KV Termination kit suitable for 1C x 400 sq.mm Copper, XLPE cable alongwith with support Structure	Nos	27					
(iii)	Construction of buried cable trench along with excavation, PCC,RCC, HDPE pipe back filling, restoration (as per requirement) etc. as per technical specification (for three single core, 33 kVcopper cable)	Mtr	250					
D3	36 KV XLPE 1-Ph cable and its termination for connection of 33 kV side of 630 kVA, 33/0.400KV LT Transformer from available HT external supply							
(i)	36 KV XLPE 3C, 120sqmm Copper, XLPE cable as per Technical Specification	Mtr	500					
(ii)	33KV , 3 Phase Termination kit suitable for above	Set	3					
(iii)	Construction of buried cable trench along with excavation, PCC,RCC, HDPE pipe back filling, restoration (as per requirement) etc. as per technical specification (for three core, 33 kVcopper cable)	Mtr	150					
D4	36 kV Equipments for LT Transformer							
1	36 kV Isolator (3-phase)-HDB							
(i)	1250A, 25 KA, Isolator	No	8					
2	30 kV Surge Arrestors (1-Phase)	Nos	24					
3	36kV Horn Gap Fuse (3-Phase)	No	1					
4	36 kV BPI	Nos	27					
E	Testing & Maintenance Equipment for GIS							

Schedule No. 4 : Installation and Other Services

(a): Installation and Construction Charges (For Manang Substation)

Sl. No.	Item Description	Estimated		Installation Charges				
		Unit	Qty.	Portion in Foreign Currency			Portion In Nepalese Currency (In NRs)	
				Currency	Unit Rate	Total Charges	Unit Rate	Total Charges
1	2	3	4	5	6	7= (4) x (6)	8	9=(4) x (8)
(i)	SF6 Gas filling & evacuating plant							
	For 245kV, 145kV & 36kV GIS	Set	1					
(ii)	Partial Discharge Monitoring System for GIS as per Technical Specification							
(a)	For 245kV GIS	Set	1					
(b)	For 145kV GIS	Set	1					
(c)	For 36kV GIS	Set	1					
(iii)	Dew Point meter							
	For 245kV, 145kV & 36kV GIS	Set	1					
(iv)	SF6 Gas Leak Detector	Set						
	For 245kV, 145kV & 36kV GIS	Set	1					
(v)	EOT crane for 245kV GIS Hall	Set	1					
(vi)	EOT crane for 145kV GIS Hall	Set	1					
(vii)	SF6 Gas Analyser	Set	1					
F	72.5kV EQUIPMENT							
1.1	72.5 kV, 1250A, 31.5kA Circuit Breaker (3-phase) with support structure	No.	1					
1.2	72.5 kV, 1250A,31.5kA Isolators with earth switch (3-phase, DBR type)	No.	1					
1.3	72.5kV, 1250A, 31.5 kA with 120% extended rating CT.	Nos.	3					
1.4	72.5kV PT.(1-phase)	Nos.	3					
1.5	72.5 kV BPI (1-phase)	Nos.	6					
G	RELAY PANELS (WITH AUTOMATION)							
1	220 kV							
a	Circuit Breaker Relay Panel							
i	With Auto Reclose	Set	6					
ii	With out Auto Reclose	Set	3					
b	Line Protection Panel							
i	For 220 kV Khudi lines	Set	2					
ii	For 220 kV other lines	Set	4					
d	Transformer Protection Panel (For both HV & MV side for 220/132kV ICT)	Set	1					
e	Bus Bar Protection Panel	Set	1					
2	132 kV							

Schedule No. 4 : Installation and Other Services

(a): Installation and Construction Charges (For Manang Substation)

Sl. No.	Item Description	Estimated		Installation Charges				
		Unit	Qty.	Portion in Foreign Currency			Portion In Nepalese Currency (In NRs)	
				Currency	Unit Rate	Total Charges	Unit Rate	Total Charges
1	2	3	4	5	6	7= (4) x (6)	8	9=(4) x (8)
a	Circuit Breaker Relay Panel							
i	With out Auto Reclose	Set	10					
b	Line Protection Panel	Set	6					
d	Transformer Protection Panel (For both HV & MV side for 132/33kV ICT)	Set	1					
e	Bus Bar Protection Panel	Set	1					
J	SUBSTATION AUTOMATION							
J.1	Complete Substation Automation System (SAS) for substation including hardware and software for the substation & remote control stations alongwith associated equipments for the following bays as per Technical Specification							
a	Main bays to be automated							
i)	220kV system	Bay Nos	9					
ii)	132kV system	Bay Nos	10					
iii)	33kV system	Bay Nos	10					
iv)	BCU for controlling & monitoring of Auxilary System	Set	1					
K	Teleprotection & communication Equipments							
i)	Digital Protection Coupler (220 kV & 132 kV)	Nos	12					
ii)	Digital Protection Coupler(for other end)	Nos	10					
iii)	PBAX with following configuration as per TS	Set	1					
a)	2 wire subscriber interface card with capacity 32 local subscribers (along with 32 nos. Instruments)							
b)	4 wire E & M interface card with capacity 8 nos. trunks (For PLCC)							
c)	E-1 interface with 2 trunks G-703							
d)	2 wire interface with 1 trunk (For PSTN)							
iv)	Testing & Maintenance equipment (print test kit only)	No	1					
v)	4 wire telephone equipment		1					
L	LT Switchgear (As per Technical specification)							
a	415V Main switchboard	Set	1					
b	415V ACDB	Set	1					
c	415V MLDB	Set	1					
d	415V Emergency LDB	Set	1					
e	220V DCDB	Sets	2					

Schedule No. 4 : Installation and Other Services

(a): Installation and Construction Charges (For Manang Substation)

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		Unit	Qty.	Portion in Foreign Currency			Portion In Nepalese Currency (In NRs)	
				Currency	Unit Rate	Total Charges	Unit Rate	Total Charges
1	2	3	4	5	6	7= (4) x (6)	8	9=(4) x (8)
f	48 V DCDB	Set	2					
M	Batteries							
a	220V							
i	600 AH	Nos	2					
b	48V							
i	600 AH	Nos	2					
N	Float Cum Boost Battery Charger							
a	220V Float Cum Boost Battery Charger							
i	80A/80A	Nos	2					
b	48V Float Cum Boost Battery Charger							
ii	80A/80A	Nos	2					
O	Diesel Generator with control Panel							
a	250kVA	Set	1					
P	Fire Protection System							
a	Portable /Trolley/Wheel mounted extinguishers							
i	9 litre water type	Nos	5					
ii	50 litre foam type	Nos	2					
iii	4.5 kg CO ₂ type	Nos	25					
iv	4.5 kg Dry Chemical Power (DCP) type	Nos	5					
Q	Cables along with clamps, glands, lugs and straight joints etc.							
(a)	Power Cables - (1.1kV grade)							
i	3.5Cx300 sqmm (XLPE) cable for filter Machine along with termination arrangement as per TS	KM	1					
R	Air conditioning System for Control room cum administrative building, Township Quarters etc							
a	High wall type split AC unit of 2 TR capacity	Nos	35					
S	Fabrication, galvanising and supply of following Steel Structures including nuts, bolts, all types of washers, packplates, step bolts and gusset plates including foundation bolts.							
(a)	Lattice Structure including Foundation Bolts	MT	135					

Schedule No. 4 : Installation and Other Services

(a): Installation and Construction Charges (For Manang Substation)

Sl. No.	Item Description	Estimated		Installation Charges				
		Unit	Qty.	Portion in Foreign Currency			Portion In Nepalese Currency (In NRs)	
				Currency	Unit Rate	Total Charges	Unit Rate	Total Charges
1	2	3	4	5	6	7= (4) x (6)	8	9=(4) x (8)
(b)	Pipe Structure including Foundation Bolts .	MT	35					
(c)	Fastners and step bolts.(Nuts,Bolts & Washers)	MT	8					
T	Telecom Equipments							
A	SDH Equipment (STM-4 MADM upto 3 MSP protected directions)							
(i)	Base Equipment (Common cards, Cross Connect/control cards, optical base cards, power supply cards, power cabling, other hardware and accessories including sub racks, patch cord, DDF etc fully equiped excluding (ii) & (iii) below	Nos.	1					
(ii)	Optical Interface Cards/SFP#							
a	S4.1 SFP	Nos.	0					
b	L4.1 SFP	Nos.	4					
c	L4.2 SFP	Nos.	0					
(iii)	Tributary cards							
a	E1 Interface card (Min.16 interfaces per card)	Nos.	2					
b	Ethernet Interface 10/100 Base T with Layer-2 switching (Min 4 Interfaces per card)	Nos.	2					
B	Equipment Cabinets	No.	1					
2	Network Manager System - Craft Terminal							
a	Hardware	Set\$	1					
b	Software	Set\$	1					
3	VOIP telephone instrument with one common switch (min. 4 port), 2 set of telephone	Set\$	1					
Part-B: VENDOR ASSESSED QUANTITIES								
A	Erection Hardware							
	Insulator strings, Disc Insulators, Hardware, conductor, Al tube, bus-bar materials, cable trays, clamps, spacers, connectors including equipment connectors, Junction box, earthwire, buried cable trenches/pipe equipment & lighting, all accessories etc. for the following:							
a	245kV GIS Termination Arrangement:							

Schedule No. 4 : Installation and Other Services

(a): Installation and Construction Charges (For Manang Substation)

Sl. No.	Item Description	Estimated		Installation Charges				
		Unit	Qty.	Portion in Foreign Currency			Portion In Nepalese Currency (In NRs)	
				Currency	Unit Rate	Total Charges	Unit Rate	Total Charges
1	2	3	4	5	6	7= (4) x (6)	8	9=(4) x (8)
i	Line Bay	Set	6					
ii	Transformer Bay (including 220 kV AIS connection for spare unit with GIS auxiliary bus module)	Set	1					
b	145kV GIS Termination Arrangement:							
i	Line Bay	Set	6					
ii	Transformer Bay (including 132 kV AIS connection for spare unit with GIS auxiliary bus module for 220/132 kV auto Transformer)	Set	1					
iii	Transformer Bay for 132/33 kV Transformer	Set	1					
c	For spare unit of 220/132/33 kV auto transformer connection through auxiliary buses (tertiary & Neutral auxiliary buses only), Neutral formation and delta formation (for one bank): Required 72.5 kV BPI for tertiary auxiliary bus & delta formation, 36 kV BPI for Neutral formation & Neutral auxiliary bus including Al tube, bus-bar materials, clamps, spacers, connectors, including equipment connectors, Earthing of spare unit as per technical specification, as applicable.	Set	1					
d	72.5kV LT Transformer connection	Set	1					
e	33kV LT Transformer connection	Set	1					
f	33kV Transformer bay	Set	1					
g	33kV Line bays	Set	6					
h	Earthing and lightning protection including necessary connectors/connections, risers etc. complete in all respect(but excluding LM structures for Lightning protection)							
i	Earth Conductor (copper)	LS	1					
ii	Earth Rod (copper clad steel)	LS	1					
iii	Equipment for lightning protection	LS	1					
B	Fire Protection System							
a	Pumping arrangement for Hydrant system, complete with all piping, valves, fittings,etc. inside pump house							
i	220/132kV (New) Substation	Set	1					
b	Hydrant system, complete U/G piping and accessories etc. outside the Pump House.							
i	220/132kV (New) Substation	Set	1					

Schedule No. 4 : Installation and Other Services

(a): Installation and Construction Charges (For Manang Substation)

Sl. No.	Item Description	Estimated		Installation Charges				
		Unit	Qty.	Portion in Foreign Currency			Portion In Nepalese Currency (In NRs)	
				Currency	Unit Rate	Total Charges	Unit Rate	Total Charges
1	2	3	4	5	6	7= (4) x (6)	8	9=(4) x (8)
c	Fire & Smoke detection and Alarm System							
(i)	Control room buiding	Set	1					
(ii)	220 kV GIS buiding	Set	1					
(iii)	132 kV GIS buiding	Set	1					
(iv)	33kV GIS buiding	Set	1					
(v)	Fire Fighting Pump House	Set	1					
C	Illumination System							
a	Control room cum administrative building illumination	LS	1					
b	Fire fighting building illumination	LS	1					
c	Switchyard lighting	LS	1					
d	Street lighting	LS	1					
e	Transit Camp illumination	LS	1					
f	245kV, 132kv, 33 kV GIS Building including panel room	LS	1					
g	Township quarter (B-Type, 4 nos)	LS	1					
h	Township quarter (C-Type, 4 nos)	LS	1					
i	Township quarter (D-Type, 1 nos)	LS	1					
j	Car parkings	LS	1					
k	Recreation hall & Gym hall for staff community	LS	1					
l	Valley ball court	LS	1					
m	Badminton court	LS	1					
D	Air conditioning & ventilation System							
D.1	Air conditioning system							
(i)	Panel room in 245kV GIS Hall	LS	1					
(ii)	Panel room in 145kV GIS Hall	LS	1					
(iii)	Panel room in 36kV GIS Hall	LS	1					
D.2	Ventilation system							
(i)	245KV GIS hall	LS	1					
(ii)	145KV GIS hall	LS	1					
G	POWER & CONTROL CABLES							
b	Power Cables(PVC)- (1.1kV grade)	LS	1					
b	Power Cables (XLPE)(excluding 3.5Cx300 sqmm (XLPE) cable for filter Machine)- (1.1kV grade)	LS	1					
c	Control Cable (PVC)- (1.1kV grade)	LS	1					

Schedule No. 4 : Installation and Other Services

(a): Installation and Construction Charges (For Manang Substation)

Sl. No.	Item Description	Estimated		Installation Charges				
		Unit	Qty.	Portion in Foreign Currency			Portion In Nepalese Currency (In NRs)	
				Currency	Unit Rate	Total Charges	Unit Rate	Total Charges
1	2	3	4	5	6	7= (4) x (6)	8	9=(4) x (8)
d	Cable glands, lugs & straight through joints for Power & Control cables	LS	1					
F	Integration of SDH Equipment with LDC's NMS system	LS	1					

Part-C: Civil Works (As per Technical Specifications)

A	Steel Structures							
a)	Lattice /pipe Structure for towers, beams and equipment support structure including pack plates/ packwashers and gusset plates including foundation bolts (Nuts, washers, MS plate welded at the bottom).							
(i)	Lattice structures	MT	135.00					
(ii)	Pipe structures	MT	35.00					
b)	Fasteners for towers, beams and equipment support structures	MT	8.00					
B	Civil Works (As per Technical Specifications)							
1	Excavation in all types of soil and rock including backfilling disposal etc. for all leads and lifts	Cu.M	35,000.00					
2	Providing and laying of Plain Cement Concrete (PCC) (1:4:8)	Cu.M	2,535.00					
3	Providing and laying of Plain Cement Concrete (PCC) (1:2:4)	Cu.M	550.00					
4	Providing and laying of Reinforced Cement Concrete Design Mix M25 including pre cast, shuttering, Grouting of pockets & underpinning but excluding steel reinforcement	Cu.M	12,150.00					
5	Providing and laying Plain Cement Concrete 1:5:10 (1 cement : 5 sand : 10 Stone aggregate)	Cu.M	2,300.00					
6	Steel Reinforcement (Fe 500)	MT	1,050.00					
7	Stone filling (40 mm size) over grating of transformer/ reactor foundation	Cu.M	175.00					
8	Misc. Structural steel including rails, embedments, edge protection angles, gratings etc. but excluding the reinforcement steel and steel for lattice and pipe structures.	MT	160.00					
9	Stone spreading including antiweed treatment in switchyard excluding PCC	Sq. M.	25,000.00					
10	All civil works including internal finish as well as external finish 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 :							

Schedule No. 4 : Installation and Other Services

(a): Installation and Construction Charges (For Manang Substation)

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		Unit	Qty.	Portion in Foreign Currency			Portion In Nepalese Currency (In NRs)	
				Currency	Unit Rate	Total Charges	Unit Rate	Total Charges
1	2	3	4	5	6	7= (4) x (6)	8	9=(4) x (8)
(i)	Fire fighting pump house building (excluding external finish)	Sq. M.	100.00					
(ii)	Water Tank (excluding external finish)	LS	1.00					
(iii)	Township (Quarters)							
	(a) B Type	Sq. M.	500.00					
	(b) C Type	Sq. M.	600.00					
	(c) D Type	Sq. M.	210.00					
(iv)	Transit Camp	Sq. M.	420.00					
(v)	Furnishing of Township Quarters B,C,D and transit camp as per TS refer...	LS	1.00					
(vi)	Recreation hall & Gym hall for staff community as per TS refer...	Sq.M.	240.00					
(vi)	Gym Equipment, Snooker & Tabel tennis set As per Chapeter 14, clause 23.1, 23.2, 23.3	LS	1.00					
(vi)	Valley ball court as per TS refer...	LS	1.00					
(ix)	Badminton court as per TS refer...	LS	1.00					
(x)	Parking Shed (for 10 Cars)	LS	2.00					
(xi)	CRB (Double storey with Plinth area of 375 sqm on each floor)	Sq. M.	750.00					
11	All civil works as per Owner Supplied/Approved drawings and specification but excluding excavation, PCC, RCC and reinforcement steel (Fe-500), for following buildings:							
(i)	Control Panel Room Building	Sq. M.	36.00					
12	PRE ENGINEERED BUILDINGS							
i)	220 KV GIS HALL All civil works related to pre-engineered 220 kV GIS Hall to be supplied as per schedule 1 including foundation, internal cable trench, excavation, PCC, RCC and reinforcement steel etc. complete to erect the building as per approved drawings and Technical Specification							
(a)	GIS Hall	Sq. M.	800					
(b)	AHU/ Panel Room	Sq. M.	200					
ii)	132 KV GIS HALL All civil works related to pre-engineered 132 kV GIS Hall to be supplied as per schedule 1 including foundation, internal cable trench, excavation, PCC, RCC and reinforcement steel etc. complete to erect the building as per approved drawings and Technical Specification							
(a)	GIS Hall	Sq. M.	450					
(b)	AHU/ Panel Room	Sq. M.	150					

Schedule No. 4 : Installation and Other Services

(a): Installation and Construction Charges (For Manang Substation)

Sl. No.	Item Description	Estimated		Installation Charges				
		Unit	Qty.	Portion in Foreign Currency			Portion In Nepalese Currency (In NRs)	
				Currency	Unit Rate	Total Charges	Unit Rate	Total Charges
1	2	3	4	5	6	7= (4) x (6)	8	9=(4) x (8)
iii)	33 KV GIS HALL All civil works related to pre-engineered 33 kV GIS Hall to be supplied as per schedule 1 including foundation, internal cable trench, excavation, PCC, RCC and reinforcement steel etc. complete to erect the building as per approved drawings and Technical Specification							
(a)	GIS Hall	Sq. M.	150					
(b)	AHU/ Panel Room	Sq. M.	50					
13	Store Building All other items including electrification ,finishings, steel grills, windows, shutter etc to complete the building complete as per technical specification excluding excavation, PCC, RCC and reinforcement steel which shall be measured and paid seperately under respective items of BPS.							
(a)	Semi closed type	Sq. M.	150.00					
(b)	Closed Type	Sq. M.	150.00					
14	Road inside substation boundary							
(a)	Concrete road 5.5m wide as per drawing including excavation, subgrade preparation, road side drainage except reinforcement, concrete and gabion wall/retaining wall	Sq.M.	2,750.00					
(b)	Concrete road 3.75 m wide as per drawing including excavation, subgrade preparation, road side drainage except reinforcement, concrete and gabion wall/retaining wall	Sq.M.	950.00					
15	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 two rails	Sq.M.	1,250.00					
16	Chain link fencing as per technical specification and approved drawing excluding concrete	RM	2,050.00					
17	Switchyard Gate excluding Concrete	Nos.	1.00					
18	Septic tank and soak pit complete as per technical specification and approved drawing excluding concrete & reinforcement which shall be measured and paid seperately under respective items of BPS .							
(a)	a) For 20 users- CRB	LS	1.00					
(b)	b) For 60 users - Quarters & Transit Camp	LS	2.00					

Schedule No. 4 : Installation and Other Services

(a): Installation and Construction Charges (For Manang Substation)

Sl. No.	Item Description	Estimated		Installation Charges				
		Unit	Qty.	Portion in Foreign Currency			Portion In Nepalese Currency (In NRs)	
				Currency	Unit Rate	Total Charges	Unit Rate	Total Charges
1	2	3	4	5	6	7= (4) x (6)	8	9=(4) x (8)
19	Supplying & laying hume pipe of grade (NP-3) excluding concrete and reinforcement							
(a)	250mm dia	RM	200.00					
(b)	300mm dia	RM	200.00					
(c)	450mm dia	RM	100.00					
(d)	600mm dia	RM	100.00					
(e)	900mm dia	RM	50.00					
20	Supplying and erecting dewatering pumps							
(a)	5 HP	Nos.	2.00					
(b)	0.5 HP	Nos.	5.00					
21	Drains Excluding Concrete							
(a)	Section A-A (300 mm wide X depth up to 600mm)	RM	400.00					
(b)	Section B-B (450 mm wideX depth from 600 mm to 900 mm)	RM	400.00					
(c)	Section C-C (600 mm wide X depth from 900 mm to 1200 mm)	RM	400.00					
(d)	Section D-D (750 mm wide X depth from 1200 mm to 1500mm)	RM	400.00					
22	All Civil works for Burried cable trenches for Auxilliary power arrangement. However item excavation, PCC, RCC, Reinforcement Steel required to complete the work shall be measured and paid seperately under respective items of BPS	RM	200.00					
23	Bore hole with drilling, pumping machine, pipes all complete	LS	1.00					
24	External water supply from one point supply within S/S boundary to Fire water Tank, control room building.							
(i)	80 mm Dia GI pipe	RM	200.00					
(ii)	50 mm Dia GI pipe	RM	250.00					
(iii)	40mm Dia GI pipe	RM	100.00					
(iv)	25mm Dia GI pipe	RM	100.00					
25	External sewerage system including all item such as excavation, piping, pipe fittings, manholes, gali trap, gali chamber etc.							
(i)	250 mm Dia.	RM	150.00					
(ii)	150 mm Dia.	RM	150.00					
26	Main boundary wall Gate (Steel) including all works complete as per technical specification	LS	2.00					
27	Site levelling							
i)	Earth work in excavation of all types of soils including soft/disintegrated rock with all leads and lifts within sub station boundary	Cu. M	54,500.00					

Schedule No. 4 : Installation and Other Services

(a): Installation and Construction Charges (For Manang Substation)

Sl. No.	Item Description	Estimated		Installation Charges				
		Unit	Qty.	Portion in Foreign Currency			Portion In Nepalese Currency (In NRs)	
				Currency	Unit Rate	Total Charges	Unit Rate	Total Charges
1	2	3	4	5	6	7= (4) x (6)	8	9=(4) x (8)
ii)	Filling of excavated soil including relevent lift and lead, rolling and compaction spraying water in 15 cm layers by 10MT roller or more.	Cu. M	47,600.00					
iii)	Earth work in filling with borrowed earth with all leads and lifts including royalty,taxes etc	Cu. M	10,000.00					
28	Retaining walls/Boundary Walls							
i	Stone masonry works in cement sand mortar (1:4) including pointing on joints but excludng excavation,PCC which shall be measured and paid seperately in respective items of BPS.	RM	1,300.00					
29	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.	18.00					
30	Construction of retaining wall with excavation for foundation with all lift and leads, soling, PCC (1:2:4), concrete (M25), reinforcement, chainlinked fence, supply and fitting of weep holes of PVC pipes (150mm diameter) with necessary filter materials at the mouth of weep holes, but excluding excavation, soling, PCC(1:2:4), concrete, reinforcement, supply of chainlinked fence, which shall be measured and paid seperately under respective items of BPS	LS	1.00					
31	Soil Investigation as per TS	LS	1.00					
32	Approach Road- Construction of 5.5 m wide black top (Bituminous) road with 3.75 m wideblack top pavement and 3.1 m wide cement paver block shoulders on either side of road, Water bound macadam of suitable thickness as per design below pavement shall be laid as per technical specification including excavation all complete	Sq. M	6,600.00					
33	Local sand filling around and under DG set foundation and other foundations as applicable.	Cu. M	400.00					
34	Stone soling below foundations wherever specified in approved drawings during detailed engineering.	Cu. M	2,500.00					

Schedule No. 4 : Installation and Other Services

(a): Installation and Construction Charges (For Manang Substation)

Sl. No.	Item Description	Estimated		Installation Charges				
		Unit	Qty.	Portion in Foreign Currency			Portion In Nepalese Currency (In NRs)	
				Currency	Unit Rate	Total Charges	Unit Rate	Total Charges
1	2	3	4	5	6	7= (4) x (6)	8	9=(4) x (8)
35	Earthwork in excavation in Hard rocks in open areas/nallas/channels, to the required slopes, shapes, levels, elevations and profile including trimming of bottom and slopes of excavation and disposal and stacking of rocks for lead upto 1000m beyond levelling boundary and all lifts, with all labour, material, tools, tackles and equipment, safeguards and incidentals, royalty, taxes etc. specification and directions of Engineer-In-Charge. (50% void deduction from stack measurement)	Cu. M	1,000.00					
36	gabion wall work							
a)	Supplying and Providing Gabion wire mesh of 80x100 mm as per TS complete in all respect for gabion wall and spur.	Sq. M	1,000.00					
b)	Boulders packed with small stones or spalls into interstices	Cu. M	100.00					
	Total of Part A+Part B + Part C for Manang Substation (Total of column 7 and 9 to be carried forward to Schedule No. 4(a) (Total))							

Name of Bidder:

Signature of Bidder:

(Printed Name)

(Designation)

(Common Seal)

NEPAL ELECTRICITY AUTHORITY
PROJECT MANAGEMENT DIRECTORATE
MARSYANGDI CORRIDOR 220 kV TRANSMISSION LINE PROJECT

(I) 220/132/33kV Manang (new) GIS Substation and (II) 220/132/33kV Khudi (new) GIS Substation

Schedule No. 4 : Installation and Other Services

(a): Installation and Construction Charges (For Khudi Substation)

Sl. No.	Item Description	Estimated		Installation Charges				
		Unit	Qty.	Portion in Foreign Currency			Portion In Nepalese Currency (In NRs)	
				Currency	Unit Rate	Total Charges	Unit Rate	Total Charges
1	2	3	4	5	6	7 = (4)x(6)	8	9=(4) x (8)
Part-A : EMPLOYER ASSESSED QUANTITIES								
A.1	POWER TRANSFORMER							
A1.1	POWER TRANSFORMER							
a)	53.33MVA , 220/132/33 KV, 1-phase Autotransformer (Excluding insulating oil)	Nos.	4					
b)	Insulating oil for 53.33MVA , 220/132/33 KV, 1-phase Autotransformer (1Lot = Oil for 1Autotransformers)	Lot	4					
c)	33kV Current transformer (NCT) for autotransformer	No	1					
d)	Nitrogen Injection type Fire Protection system including underground oil tank	Set	4					
A1.2	POWER TRANSFORMER							
a)	50MVA , 132/33 KV, 3-phase transformer (Excluding insulating oil)	Nos.	1					
b)	Insulating oil for 50MVA , 132/33 KV, 3-phase transformer (1Lot = Oil for 1Autotransformers)	Lot	1					
c)	Nitrogen Injection type Fire Protection system including underground oil tank	Set	1					
A1.3	Testing & Maintenance Equipments							
a)	Oil Storage Tank (10KL size)	No	1					
b)	Transformer Oil Filtration plant (6KLPH)	No	1					
A2	LT TRANSFORMER							
1	630 kVA, 33/0.400kV	Nos	2					
B	245 kV equipment							
B1	245KV GIS Equipment							
1.01	245kV, SF6 GIS Bus Bars Module [Module description as per Technical specification]	Set	2					
1.02	245kV, SF6 GIS ICT bay Module [Module description as per Technical specification]	Set	2					

Schedule No. 4 : Installation and Other Services

(a): Installation and Construction Charges (For Khudi Substation)

Sl. No.	Item Description	Estimated		Installation Charges				
		Unit	Qty.	Portion in Foreign Currency			Portion In Nepalese Currency (In NRs)	
				Currency	Unit Rate	Total Charges	Unit Rate	Total Charges
1	2	3	4	5	6	7 = (4)x(6)	8	9=(4) x (8)
1.03	245kV, 1600Amp, SF6 GIS Line bay Module [Module description as per Technical specification]	Set	6					
1.04	245kV, 2400 Amps SF6 GIS Line bay Module [Module description as per Technical specification]	Set	2					
1.05	245kV, SF6 GIS Bus coupler bay Module [Module description as per Technical specification]	Set	1					
1.06	245 kV Auxiliary Bus to connect spare unit of Transformer [Module description as per Technical specification]	Set	1					
1.07	245kV, 1600A,40kA SF6/Air Bushing for Connecting GIS to AIS alongwith support structure (Single Phase)	Nos	22					
1.08	245kV, 2400A,40kA SF6/Air Bushing for Connecting GIS to AIS alongwith support structure (Single Phase)	Nos	6					
1.09	245kV, 1600A, 1phase SF6 GIS Bus duct alongwith support structure	Mtr	1500					
1.1	245kV, 2400A, 1phase SF6 GIS Bus duct alongwith support structure	Mtr	200					
B2	245KV Outdoor Equipment							
1.1	216 KV Surge Arrester (1-phase)	Nos.	31					
1.2	245kV BPI	Nos.	50					
C	145KV Equipment							
C1	145KV GIS Equipment							
1.01	145kV, SF6 GIS Bus Bars Module [Module description as per Technical specification]	Set	2					
1.02	145kV, SF6 GIS Transformer bay Module [Module description as per Technical specification for 220/132kV ICT]	Set	2					
1.03	145kV, SF6 GIS Transformer bay Module [Module description as per Technical specification for 132/33kV ICT]	Set	1					
1.04	145kV, SF6 GIS Line bay Module [Module description as per Technical specification]	Set	6					
1.05	145kV, SF6 GIS Bus Coupler bay Module [Module description as per Technical specification]	Set	1					
1.06	145 kV Auxiliary Bus to connect spare unit of Transformer [Module description as per Technical specification]	Set	1					
C2	145KV Outdoor Equipment							

Schedule No. 4 : Installation and Other Services

(a): Installation and Construction Charges (For Khudi Substation)

Sl. No.	Item Description	Estimated		Installation Charges				
		Unit	Qty.	Portion in Foreign Currency			Portion In Nepalese Currency (In NRs)	
				Currency	Unit Rate	Total Charges	Unit Rate	Total Charges
1	2	3	4	5	6	7 = (4)x(6)	8	9=(4) x (8)
1.1	120KV Surge Arrester (1-phase)	Nos.	28					
1.2	145kV BPI	Nos.	30					
C3	132 kV Cu condctor, XLPE cable and accessories							
C3	132 kV Cu condctor, XLPE cable and accessories							
1.1	132 kV, 1C x 1200 sq.mm Copper, XLPE cable as per Technical specification	Mtr	1500					
1.2	132 kV, 1C x 500 sq.mm Copper, XLPE cable as per Technical specification	Mtr	600					
1.3	132 kV, 1C x 300 sq.mm Copper, XLPE cable as per Technical specification	Mtr	300					
1.4	132 KV Termination kit suitable for 132KV, 1CX 1200 sq.mm XLPE Cable alongwith with support Structure for EHV Cable	Nos	18					
1.5	132 KV Termination kit suitable for 132KV, 1CX 500 sq.mm XLPE Cable alongwith with support Structure for EHV Cable	Nos	7					
1.6	132 KV Termination kit suitable for 132KV, 1CX300 sq.mm XLPE Cable alongwith with support Structure for EHV Cable	Nos	3					
1.7	Construction of buried cable trench along with excavation, PCC, RCC, back filling, restoration (as per requirement) etc. as per technical specification (for six single core, 132kV, copper cable)(sand filled)	Mtr	180					
1.8	Construction of buried cable trench along with excavation, PCC, RCC, back filling, restoration (as per requirement) etc. as per technical specification (for Seven single core, 132kV, copper cable)(sand filled)	Mtr	80					
1.9	Construction of buried cable trench along with excavation, PCC, HDPE pipe back filling, restoration (as per requirement) etc. as per technical specification (for Six single core, 132kVcopper cable) (PCC trench)	Mtr	50					
1.10	Construction of buried cable trench along with excavation, PCC, HDPE pipe back filling, restoration (as per requirement) etc. as per technical specification (for seven single core, 132kVcopper cable) (PCC trench)	Mtr	50					

Schedule No. 4 : Installation and Other Services

(a): Installation and Construction Charges (For Khudi Substation)

Sl. No.	Item Description	Estimated		Installation Charges				
		Unit	Qty.	Portion in Foreign Currency			Portion In Nepalese Currency (In NRs)	
				Currency	Unit Rate	Total Charges	Unit Rate	Total Charges
1	2	3	4	5	6	7 = (4)x(6)	8	9=(4) x (8)
1.11	Construction of buried cable trench along with excavation, PCC, RCC, back filling, restoration (as per requirement) etc. as per technical specification (for three single core, 132kV, copper cable)(sand filled)	Mtr	100					
1.12	Construction of buried cable trench along with excavation, PCC, HDPE pipe back filling, restoration (as per requirement) etc. as per technical specification (for three single core, 132kVcopper cable) (PCC trench)	Mtr	50					
D1	36KV GIS Equipment							
1.01	Indoor switchgear panels (GIS type) IP1 type	Set	1					
1.02	Indoor Switchgear Panels (GIS type) IP 2 type	Set	8					
1.03	Indoor switchgear panels (GIS type) IP3 type	Set	1					
1.04	Indoor switchgear panels (GIS type) IP4 Type	Set	1					
D2	36kV XLPE cable and its termination for connection of 33 kV side of 132/33 kV Transformer to 36kV GIS bay and line bays							
(i)	33kV, 1C x 400 sq.mm Copper, XLPE cable as per Technical specification	Mtr	2500					
(ii)	33KV Termination kit suitable for 1C x 400 sq.mm Copper, XLPE cable alongwith with support Structure	Nos	36					
(iii)	Construction of buried cable trench along with excavation, PCC,RCC, HDPE pipe back filling, restoration (as per requirement) etc. as per technical specification (for three single core, 33 kVcopper cable)	Mtr	250					
D3	36 KV XLPE 1-Ph cable and its termination for connection of 33 kV side of 630 kVA, 33/0.400KV LT Transformer from available HT external supply							
(i)	36 KV XLPE 3C, 120sqmm Copper, XLPE cable as per Technical Specification	Mtr	500					
(ii)	33KV, 3 phase Termination kit suitable for above	Set	3					

Schedule No. 4 : Installation and Other Services

(a): Installation and Construction Charges (For Khudi Substation)

Sl. No.	Item Description	Estimated		Installation Charges				
		Unit	Qty.	Portion in Foreign Currency			Portion In Nepalese Currency (In NRs)	
				Currency	Unit Rate	Total Charges	Unit Rate	Total Charges
1	2	3	4	5	6	7 = (4)x(6)	8	9=(4) x (8)
(iii)	Construction of buried cable trench along with excavation, PCC,RCC, HDPE pipe back filling, restoration (as per requirement) etc. as per technical specification (for three core, 33 kVcopper cable)	Mtr	150					
D4	36 kV Equipments for LT Transformer							
1	36 kV Isolator (3-phase)-HDB							
(i)	1250A, 25 KA, Isolator	No	10					
2	30 kV Surge Arrestors (1-Phase)	Nos	30					
3	36kV Horn Gap Fuse (3-Phase)	No	1					
4	36 kV BPI	Nos	36					
E	Testing & Maintenance Equipment for GIS							
(i)	SF6 Gas filling & evacuating plant							
	For 245kV, 145kV & 36kV GIS	Set	1					
(ii)	Partial Discharge Monitoring System for GIS as per Technical Specification							
(a)	For 245kV GIS	Set	1					
(b)	For 145kV GIS	Set	1					
(c)	For 36kV GIS	Set	1					
(iii)	Dew Point meter							
	For 245kV, 145kV & 36kV GIS	Set	1					
(iv)	SF6 Gas Leak Detector							
	For 245kV, 145kV & 36kV GIS	Set	1					
(v)	EOT crane for 245kV GIS Hall	Set	1					
(vi)	EOT crane for 145kV GIS Hall	Set	1					
(vii)	SF6 Gas Analyser	Set	1					
F	72.5kV EQUIPMENT							
1.1	72.5 kV, 1250A, 31.5kA Circuit Breaker (3-phase) with support structure	No.	1					
1.2	72.5 kV, 1250A,31.5kA Isolators with earth switch (3-phase, DBR type)	No.	1					
1.3	72.5kV, 1250A, 31.5 kA with 120% extended rating CT.	Nos.	3					
1.4	72.5kV PT.(1-phase)	Nos.	3					
1.5	72.5 kV BPI (1-phase)	Nos.	6					

Schedule No. 4 : Installation and Other Services

(a): Installation and Construction Charges (For Khudi Substation)

Sl. No.	Item Description	Estimated		Installation Charges				
		Unit	Qty.	Portion in Foreign Currency			Portion In Nepalese Currency (In NRs)	
				Currency	Unit Rate	Total Charges	Unit Rate	Total Charges
1	2	3	4	5	6	7 = (4)x(6)	8	9=(4) x (8)
G	RELAY PANELS (WITH AUTOMATION)							
1	220 kV							
a	Circuit Breaker Relay Panel							
i	With Auto Reclose	Set	8					
ii	With out Auto Reclose	Set	3					
b	Line Protection Panel							
i	For 220 kV lines (in which current differential relay will be supplied from other contract)	Set	2					
ii	For 220 kV lines	Set	6					
d	Transformer Protection Panel (For both HV & MV side for 220/132kV ICT)	Set	1					
e	Bus Bar Protection Panel	Set	1					
2	132 kV							
a	Circuit Breaker Relay Panel							
i)	With out Auto Reclose	Set	10					
b	Line Protection Panel	Set	6					
c	Transformer Protection Panel (For both HV & MV side for 132/33kV ICT)	Set	1					
d	Bus Bar Protection Panel	Set	1					
J	SUBSTATION AUTOMATION							
J.1	Complete Substation Automation System (SAS) for substation including hardware and software for the substation & remote control stations alongwith associated equipments for the following bays as per Technical Specification							
a	Main bays to be automated							
i	220 kV system	Bay Nos	11					
ii	132 kV system	Bay Nos	10					
iii	33 kV system	Bay Nos	12					
v)	BCU for controlling & monitoring of Auxilary System	Set	1					
K	Teleprotection & communication Equipments							
i)	Digital Protection Coupler (220 kV & 132 kV)	Set	14					
ii)	Digital Protection Coupler(for other end)	Nos	26					
iii)	PBAX with following configuration as per TS	Set	1					

Schedule No. 4 : Installation and Other Services

(a): Installation and Construction Charges (For Khudi Substation)

Sl. No.	Item Description	Estimated		Installation Charges				
		Unit	Qty.	Portion in Foreign Currency			Portion In Nepalese Currency (In NRs)	
				Currency	Unit Rate	Total Charges	Unit Rate	Total Charges
1	2	3	4	5	6	7 = (4)x(6)	8	9=(4) x (8)
a)	2 wire subscriber interface card with capacity 32 local subscribers (along with 32 nos. Instruments)							
b)	4 wire E & M interface card with capacity 8 nos. trunks (For PLCC)							
c)	E-1 interface with 2 trunks G-703							
d)	2 wire interface with 1 trunk (For PSTN)							
iv)	Testing & Maintenance equipment (print test kit only)	Set	1					
v)	4 wire telephone equipment	No	1					
L	LT Switchgear (As per Technical specification)							
a	415V Main switchboard	Set	1					
b	415V ACDB	Set	1					
c	415V MLDB	Set	1					
d	415V Emergency LDB	Set	1					
e	220V DCDB	Sets	2					
f	48v DCDB	Sets	2					
M	Batteries							
a	220V							
i	600 AH	Nos	2					
b	48V							
i	600 AH	Nos	2					
N	Float Cum Boost Battery Charger							
a	220V Float Cum Boost Battery Charger							
i	80A/80A	Nos	2					
b	48V Float Cum Boost Battery Charger							
ii	80A/80A	Nos	2					
O	Diesel Generator with control Panel							
a	250 kVA	Set	1					
P	Fire Protection System							
a	Portable /Trolley/Wheel mounted extinguishers							
i	9 litre water type	Nos	5					
ii	50 litre foam type	Nos	2					
iii	4.5 kg CO ₂ type	Nos	25					
iv	4.5 kg Dry Chemical Power (DCP) type	Nos	5					

Schedule No. 4 : Installation and Other Services

(a): Installation and Construction Charges (For Khudi Substation)

Sl. No.	Item Description	Estimated		Installation Charges				
		Unit	Qty.	Portion in Foreign Currency			Portion In Nepalese Currency (In NRs)	
				Currency	Unit Rate	Total Charges	Unit Rate	Total Charges
1	2	3	4	5	6	7 = (4)x(6)	8	9=(4) x (8)
Q	Cables along with clamps, glands, lugs and straight joints etc.							
(a)	Power Cables - (1.1kV grade)							
i	3.5Cx300 sqmm (XLPE) cable for filter Machine along with termination arrangement as per TS	KM	1					
R	Air conditioning System for Control room cum administrative building, Township Quarters etc							
a	High wall type split AC unit of 2 TR capacity	Nos	35					
S	Fabrication, galvanising and supply of following Steel Structures including nuts, bolts, all types of washers, packplates, step bolts and gusset plates including foundation bolts.							
(a)	Lattice Structure including Foundation Bolts	MT	155					
(b)	Pipe Structure including Foundation Bolts .	MT	50					
(c)	Fastners and step bolts.(Nuts,Bolts & Washers)	MT	10					
T	Telecom Equipments							
A	SDH Equipment (STM-4 MADM upto 3 MSP protected directions)							
(i)	Base Equipment (Common cards, Cross Connect/control cards, optical base cards, power supply cards, power cabling, other hardware and accessories including sub racks, patch cord, DDF etc fully equiped excluding (ii) & (iii) below	Nos.	1					
(ii)	Optical Interface Cards/SFP#							
a	S4.1 SFP	Nos.	2					
b	L4.1 SFP	Nos.	3					
c	L4.2 SFP	Nos.	0					
(iii)	Tributary cards							
a	E1 Interface card (Min.16 interfaces per card)	Nos.	2					
b	Ethernet Interface 10/100 Base T with Layer-2 switching (Min 4 Interfaces per card)	Nos.	2					

Schedule No. 4 : Installation and Other Services

(a): Installation and Construction Charges (For Khudi Substation)

Sl. No.	Item Description	Estimated		Installation Charges				
		Unit	Qty.	Portion in Foreign Currency			Portion In Nepalese Currency (In NRs)	
				Currency	Unit Rate	Total Charges	Unit Rate	Total Charges
1	2	3	4	5	6	7 = (4)x(6)	8	9=(4) x (8)
B	Equipment Cabinets	No.	1					
2	Network Manager System - Craft Terminal							
a	Hardware	Set\$	1					
b	Software	Set\$	1					
3	VOIP telephone instrument with one common switch (min. 4 port)							
a	Hardware	Set\$	1					
b	Software	Set\$	1					

Part-B: VENDOR ASSESSED QUANTITIES

A	Erection Hardware							
	Insulator strings, Disc Insulators, Hardware, HTLS and ACSR conductor, Al tube, bus-bar materials, cable trays, clamps, spacers, connectors including equipment connectors, Junction box, earthwire, buried cable trenches/pipe equipment & lighting, all accessories etc. for the following:							
a	245kV GIS Termination Arrangement:							
i	Line Bay	Set	8					
ii	Transformer Bay (including 220 kV AIS connection for spare unit with GIS auxiliary bus module)	Set	1					
b	145kV GIS Termination Arrangement:							
i	Line Bay	Set	6					
ii	Transformer Bay (including 132 kV AIS connection for spare unit with GIS auxiliary bus module)	Set	1					
iii	Transformer Bay	Set	1					
c	For spare unit of 220/132/36 kV auto transformer connection through auxiliary buses (tertiary & Neutral auxiliary buses only), Neutral formation and delta formation (for one bank): Required 72.5 kV BPI for tertiary auxiliary bus & delta formation, 36 kV BPI for Neutral formation & Neutral auxiliary bus including Al tube, bus-bar materials, clamps, spacers, connectors, including equipment connectors, support structures , Earthing of spare unit as per technical specification.	Set	1					

Schedule No. 4 : Installation and Other Services

(a): Installation and Construction Charges (For Khudi Substation)

Sl. No.	Item Description	Estimated		Installation Charges				
		Unit	Qty.	Portion in Foreign Currency			Portion In Nepalese Currency (In NRs)	
				Currency	Unit Rate	Total Charges	Unit Rate	Total Charges
1	2	3	4	5	6	7 = (4)x(6)	8	9=(4) x (8)
d	72.5kV LT Transformer connection	Set	1					
e	33kV LT Transformer connection	Set	1					
f	33kV Transformer bay	Set	1					
g	33kV Line bays	Set	8					
h	Earthing and lightning protection including necessary connectors/connections, risers etc. complete in all respect(but excluding LM structures for Lightning protection)							
i	Earth Conductor (copper)	LS	1					
ii	Earth Rod (copper clad steel)	LS	1					
iii	Equipment for lightning protection	LS	1					
B	Fire Protection System							
a	Pumping arrangement for Hydrant system, complete with all piping, valves, fittings,etc. inside pump house							
i	220/132kV (New) Substation	Set	1					
b	Hydrant system, complete U/G piping and accessories etc. outside the Pump House.							
i	220/132kV (New) Substation	Set	1					
c	Fire & Smoke detection and Alarm System							
(i)	Control room building	Set	1					
(ii)	220 kV GIS building	Set	1					
(iii)	132 kV GIS building	Set	1					
(iv)	33kV GIS building	Set	1					
(v)	Fire Fighting Pump House	Set	1					
C	Illumination System							
a	Control room cum administrative building illumination	LS	1					
b	Fire fighting building illumination	LS	1					
c	Switchyard lighting	LS	1					
d	Street lighting	LS	1					
e	Transit Camp illumination	LS	1					
f	245 , 132 & 33kV GIS Building including panel room	LS	1					
g	Township quarter (B-Type, 4 nos)	LS	1					
h	Township quarter (C-Type, 4 nos)	LS	1					
i	Township quarter (D-Type, 1 nos)	LS	1					
j	Car parkings	LS	1					
k	Recreation hall & Gym hall for staff community	LS	1					

Schedule No. 4 : Installation and Other Services

(a): Installation and Construction Charges (For Khudi Substation)

Sl. No.	Item Description	Estimated		Installation Charges				
		Unit	Qty.	Portion in Foreign Currency			Portion In Nepalese Currency (In NRs)	
				Currency	Unit Rate	Total Charges	Unit Rate	Total Charges
1	2	3	4	5	6	7 = (4)x(6)	8	9=(4) x (8)
l	Valley ball court	LS	1					
m	Badminton court	LS	1					
D	Air conditioning & ventilation System							
D.1	Air conditioning system							
(i)	Panel room in 245kV GIS Hall	LS	1					
(ii)	Panel room in 145kV GIS Hall	LS	1					
(iii)	Panel room in 36kV GIS Hall	LS	1					
D.2	Ventilation system							
(i)	245KV GIS hall	LS	1					
(ii)	145KV GIS hall	LS	1					
G	POWER & CONTROL CABLES							
a	Power Cables(PVC)- (1.1kV grade)	LS	1					
b	Power Cables (XLPE)(excluding 3.5Cx300 sqmm (XLPE) cable for filter Machine)- (1.1kV grade)	LS	1					
c	Control Cable (PVC)- (1.1kV grade)	LS	1					
d	Cable glands, lugs & straight through joints for Power & Control cables	LS	1					
F	Integration of SDH Equipment with LDC NMS System	LS	1					

Part-C: Civil Works (As per Technical Specifications)

A	Steel Structures							
a)	Lattice /pipe Structure for towers, beams and equipment support structure including pack plates/ packwashers and gusset plates including foundation bolts (Nuts, washers, MS plate welded at the bottom).							
(i)	Lattice structures	MT	155.00					
(ii)	Pipe structures	MT	50.00					
b)	Fasteners for towers, beams and equipment support structures	MT	10.00					
B	Civil Works (As per Technical Specifications)							
1	Excavation in all types of soil and rock including backfilling disposal etc. for all leads and lifts	Cu.M	58,300.00					
2	Providing and laying of Plain Cement Concrete (PCC) (1:4:8)	Cu.M	2,850.00					
3	Providing and laying of Plain Cement Concrete (PCC) (1:2:4)	Cu.M	840.00					

Schedule No. 4 : Installation and Other Services

(a): Installation and Construction Charges (For Khudi Substation)

Sl. No.	Item Description	Estimated		Installation Charges				
		Unit	Qty.	Portion in Foreign Currency			Portion In Nepalese Currency (In NRs)	
				Currency	Unit Rate	Total Charges	Unit Rate	Total Charges
1	2	3	4	5	6	7 = (4)x(6)	8	9=(4) x (8)
4	Providing and laying of Reinforced Cement Concrete Design Mix M25 including pre cast, shuttering, Grouting of pockets & underpinning but excluding steel reinforcement	Cu.M	13,650.00					
5	Providing and laying Plain Cement Concrete 1:5:10 (1 cement : 5 sand : 10 Stone aggregate)	Cu.M	2,300.00					
6	Steel Reinforcement (Fe 500)	MT	1,180.00					
7	Stone filling (40 mm size) over grating of transformer/ reactor foundation	Cu.M	295.00					
8	Misc. Structural steel including rails, embedments, edge protection angles, gratings etc. but excluding the reinforcement steel and steel for lattice and pipe structures.	MT	215.00					
9	Stone spreading including antiweed treatment in switchyard excluding PCC	Sq. M.	25,000.00					
10	All civil works including internal finish and external finish for following buildings as per technical specification and approved drawings but excavation, PCC, RCC and reinforcement steel (Fe-500), which shall be measured and paid seperately under respective items of BPS :							
(i)	Fire fighting pump house building (excluding external finish)	Sq. M.	100.00					
(ii)	Water Tank (excluding external finish)	LS	1.00					
(iii)	Township (Quarters)							
	(a) B Type	Sq. M.	500.00					
	(b) C Type	Sq. M.	600.00					
	(c) D Type	Sq. M.	210.00					
(iv)	Transit Camp	Sq. M.	420.00					
(v)	Furnishing of Township Quarters B,C,D and transit camp as per TS refer...	LS	1.00					
(vi)	Recreation hall & Gym hall for staff community as per TS refer...	Sq.M.	240.00					
(vi)	Gym Equipment, Snooker & Tabel tennis set As per Chapeter 14, clause 23.1, 23.2, 23.3	LS	1.00					
(vi)	Valley ball court as per TS refer...	LS	1.00					
(ix)	Badminton court as per TS refer...	LS	1.00					
(x)	One set of Parking Shed for 10 Cars	LS	2.00					
(xi)	CRB (Double storey with Plinth area of 375 sqm on each floor)	Sq. M.	750.00					

Schedule No. 4 : Installation and Other Services

(a): Installation and Construction Charges (For Khudi Substation)

Sl. No.	Item Description	Estimated		Installation Charges				
		Unit	Qty.	Portion in Foreign Currency			Portion In Nepalese Currency (In NRs)	
				Currency	Unit Rate	Total Charges	Unit Rate	Total Charges
1	2	3	4	5	6	7 = (4)x(6)	8	9=(4) x (8)
11	All civil works as per Owner Supplied/Approved drawings and specification but excluding excavation, PCC, RCC and reinforcement steel (Fe-500), for following buildings:							
(i)	i)Control Panel Room Building (including external finish)	Sq. M.	36.00					
12	PRE ENGINEERED BUILDINGS							
i)	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.							
(a)	GIS Hall	Sq. M.	900.00					
(b)	AHU/ Panel Room	Sq. M.	240.00					
ii)	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.							
(a)	GIS Hall	Sq. M.	450.00					
(b)	AHU/ Panel Room	Sq. M.	150.00					
iii)	33 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.							
(a)	GIS Hall	Sq. M.	150.00					
(b)	AHU/ Panel Room	Sq. M.	50.00					

Schedule No. 4 : Installation and Other Services

(a): Installation and Construction Charges (For Khudi Substation)

Sl. No.	Item Description	Estimated		Installation Charges				
		Unit	Qty.	Portion in Foreign Currency			Portion In Nepalese Currency (In NRs)	
				Currency	Unit Rate	Total Charges	Unit Rate	Total Charges
1	2	3	4	5	6	7 = (4)x(6)	8	9=(4) x (8)
13	Store Building All other items including electrification ,finishings, steel grills, windows, shutter etc to complete the building complete as per technical specification excluding excavation, PCC, RCC and reinforcement steel which shall be measured and paid seperately under respective items of BPS.							
(a)	Semi closed type	Sq. M.	150.00					
(b)	Closed Type	Sq. M.	150.00					
14	Road inside substation boundary							
(a)	Concrete road 5.5m wide as per drawing including excavation, subgrade preparation, road side drainage except reinforcement, concrete,soling and gabion wall/retaining wall	Sq.M.	3,025.00					
(b)	Concrete road 3.75 m wide as per drawing including excavation, subgrade preparation, road side drainage except reinforcement, concrete,soling and gabion wall/retaining wall	Sq.M.	750.00					
15	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 two rails	Sq.M.	750.00					
16	Chain link fencing as per technical sepcification and approved drawing excluding concrete	RM	2,000.00					
17	Switchyard Gate excluding Concrete	Nos.	1.00					
18	Septic tank and soak pit complete as per technical specification and approved drawing excluding concrete & reinforcment which shall be measured and paid seperately under respective items of BPS .							
(a)	For 20 users- CRB	LS	1.00					
(b)	For 60 users - Quarters & Transit Camp	LS	2.00					
19	Supplying & laying hume pipe of grade (NP-3) excluding concrete and reinforcement							
(a)	250mm dia	RM	200.00					
(b)	300mm dia	RM	200.00					
(c)	450mm dia	RM	100.00					
(d)	600mm dia	RM	100.00					
(e)	900mm dia	RM	50.00					
20	Supplying and erecting dewatering pumps							

Schedule No. 4 : Installation and Other Services

(a): Installation and Construction Charges (For Khudi Substation)

Sl. No.	Item Description	Estimated		Installation Charges				
		Unit	Qty.	Portion in Foreign Currency			Portion In Nepalese Currency (In NRs)	
				Currency	Unit Rate	Total Charges	Unit Rate	Total Charges
1	2	3	4	5	6	7 = (4)x(6)	8	9=(4) x (8)
(a)	5 HP	Nos.	2.00					
(b)	0.5 HP	Nos.	5.00					
21	Drains Excluding Concrete							
(a)	Section A-A (300 mm wide X depth up to 600mm)	RM	450.00					
(b)	Section B-B (450 mm wideX depth from 600 mm to 900 mm)	RM	450.00					
(c)	Section C-C (600 mm wide X depth from 900 mm to 1200 mm)	RM	450.00					
(d)	Section D-D (750 mm wide X depth from 1200 mm to 1500mm)	RM	450.00					
22	All Civil works for Burried cable trenches for Auxilliary power arrangement. However item excavation, PCC, RCC, Reinforcement Steel required to complete the work shall be measured and paid seperately under respective items of BPS	RM	200.00					
23	Bore hole with drilling, pumping machine, pipes all complete	LS	1.00					
24	External water supply from one point supply within S/S boundary to Fire water Tank, control room building, quarters, transit camp, guard house and closed type store buildings .							
(i)	80 mm Dia GI pipe	RM	200.00					
(ii)	50 mm Dia GI pipe	RM	250.00					
(iii)	40mm Dia GI pipe	RM	100.00					
(iv)	25mm Dia GI pipe	RM	100.00					
25	External sewerage system including all item such as excavation, piping, pipe fittings, manholes, gali trap, gali chamber etc.							
(i)	250 mm Dia.	RM	150.00					
(ii)	150 mm Dia.	RM	150.00					
26	Main boundary wall Gate (Steel) including all works complete as per technical specification	LS	2.00					
27	Site levelling							
i)	Earth work in excavation of all types of soils including soft/disintegrated rock with all leads and lifts within sub station boundary	Cu. M	40,000.00					
ii)	Filling of excavated soil including relevent lift and lead, rolling and compaction spraying water in 15 cm layers by 10MT roller or more.	Cu. M	40,000.00					
iii)	Earth work in filling with borrowed earth with all leads and lifts including royalty,taxes etc	Cu. M	10,000.00					
28	Retaining walls/Boundary Walls							

Schedule No. 4 : Installation and Other Services

(a): Installation and Construction Charges (For Khudi Substation)

Sl. No.	Item Description	Estimated		Installation Charges				
		Unit	Qty.	Portion in Foreign Currency			Portion In Nepalese Currency (In NRs)	
				Currency	Unit Rate	Total Charges	Unit Rate	Total Charges
1	2	3	4	5	6	7 = (4)x(6)	8	9=(4) x (8)
i	Stone masonry works in cement sand mortar (1:4) including pointing on joints but excluding excavation, soling, PCC which shall be measured and paid separately in respective items of BPS.	RM	1,250.00					
29	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.	18.00					
30	Construction of retaining wall with excavation for foundation with all lift and leads, soling, PCC (1:2:4), concrete (M25), reinforcement, chainlinked fence, supply and fitting of weep holes of PVC pipes (150mm diameter) with necessary filter materials at the mouth of weep holes, but excluding excavation, soling, PCC(1:2:4), concrete, reinforcement, supply of chainlinked fence, which shall be measured and paid separately under respective items of BPS	LS	1.00					
31	Soil Investigation as per TS	LS	1.00					
32	Local sand filling around and under DG set foundation and other foundations as applicable.	Cu. M	400.00					
33	Stone soling below foundations wherever specified in approved drawings during detailed engineering.	Cu. M	2,200.00					
34	Earthwork in excavation in Hard rocks in open areas/nallas/channels, to the required slopes, shapes, levels, elevations and profile including trimming of bottom and slopes of excavation and disposal and stacking of rocks for lead upto 1000m beyond levelling boundary and all lifts, with all labour, material, tools, tackles and equipment, safeguards and incidentals, royalty, taxes etc. specification and directions of Engineer-In-Charge. (50% void deduction from stack measurement)	Cu. M	1,000.00					
35	Gabion wall work							
a)	Supplying and Providing Gabion wire mesh of 80x100 mm as per TS complete in all respect for gabion wall and spur.	Sq. M	2,500.00					
b)	Boulders packed with small stones or spalls into interstices	Cu. M	100.00					

Schedule No. 4 : Installation and Other Services

(a): Installation and Construction Charges (For Khudi Substation)

Sl. No.	Item Description	Estimated		Installation Charges				
		Unit	Qty.	Portion in Foreign Currency			Portion In Nepalese Currency (In NRs)	
				Currency	Unit Rate	Total Charges	Unit Rate	Total Charges
1	2	3	4	5	6	7 = (4)x(6)	8	9=(4) x (8)
	Total of Part A+Part B + Part C for Khudi Substation(Total of column 7 and 9 to be carried forward to Schedule No. 4(a) (Total))							

Name of Bidder:

Date:

Signature of Bidder:

(Printed Name)

(Designation)

(Common Seal)

NEPAL ELECTRICITY AUTHORITY
PROJECT MANAGEMENT DIRECTORATE

MARSYANGDI CORRIDOR 220 kV TRANSMISSION LINE PROJECT

(I) 220/132/33kV Manang (new) GIS Substation and (II)220/132/33kV Khudi (new) GIS Substation

Schedule No. 4 : Installation and Other Services

(a): Installation and Construction Charges (For Khudi and Manang Substation)

Item No.	Description	Total Amount		
		Portion in Foreign Currency		Portion in Local Currency (NRs)
		Currency	Amount	Amount
1	2	3	4	5
a)	Total of Installation and Construction Charges for Manang Substation (Schedule 4 (a) Manang)			
b)	Total of Installation and Construction Charges for Khudi Substation (Schedule 4(a) Khudi)			
Total For Khudi and Manang Substation (Total of column 4 & 5 to be carried forward to Schedule No. 5: Grand Summary)				

Name of Bidder:

Signature of Bidder:

(Printed Name)

(Designation)

(Common Seal)

NEPAL ELECTRICITY AUTHORITY
PROJECT MANAGEMENT DIRECTORATE
MARSYANGDI CORRIDOR 220 kV TRANSMISSION LINE PROJECT

(I) 220/132/33kV Manang (new) GIS Substation and (II) 220/132/33kV Khudi (new) GIS Substation

Schedule No. 4 : Installation and Other Services

(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	Unit rate per trainee per day	Total Training Charges
1	2	3	4	5	6	7	8	9 = (8)x(6)x(5)
None								
	Total for Training Charges (total of column 9 to be carried forward to Schedule 5: Grand summary)							

Name of Bidder: _____

Signature of Bidder: _____

(Printed Name) _____

(Designation) _____

(Common Seal) _____

NEPAL ELECTRICITY AUTHORITY
PROJECT MANAGEMENT DIRECTORATE
SASEC Power System Expansion Project

(I) 220/132/33kV Manang (new) GIS Substation and (II) 220/132/33kV Khudi (new) GIS Substation

Schedule No. 4 : Installation and Other Services

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

Sl. No.	Description of the Test	Item for which training is to be imparted.	No. of Trainees	Training duration in days	Training Charges for Contractors Trainers	
					Unit rate (NRs)	Total Training Charges
1	2	3	4	5	6	7 = (4)x (5)x(6)
a)	On Job training on operation, maintenance and testing & commissioning aspect at each substation as per section Project, Technical Specification	i) Control & Protection	8	5		
		ii) Substation Automation System including integration aspect of existing SCADA (of Siemens supplied SINAUT Spectrum Software) at Load Dispatch Center	8	5		
		iii) Switchyard Equipment (GIS & AIS) for Khudi and Manang substation-complete operation and maintenance of GIS & AIS equipment except transformer	8	5		
		iv) Telecommunication Equipment (SDH ,MUX & NMS (Craft Terminal)) and PLCC	6	5		
		v) Power Transformers & OLTC maintenance Training	6	7		
b)	On Job training on for Crane operation	Hands on experience on crane operation, operation safety, Maintenance of crane and other required aspect according to guidance of manufacturer and need of the NEA	4	14		

Schedule No. 4 : Installation and Other Services**(c): Training Charges for training to be imparted to Employer's Personnel by Bidder's Instructor in Nepal**

Sl. No.	Description of the Test	Item for which training is to be imparted.	No. of Trainees	Training duration in days	Training Charges for Contractors Trainers	
					Unit rate (NRs)	Total Training Charges
1	2	3	4	5	6	7 = (4)x (5)x(6)
c)	On Job Training on AutoGrid Pro Software for Earthing Design	Design of Earthing for EHV Stations as per IEEE Standard 80- 2013 and IS 3043	8	12		
	Total for Training Charges (Total of column 7 to be carried forward to Schedule 5: Grand Summary)					

REMARKS:

- The traveling and living expenses of Owner's personnel for the training programme conducted in Nepal shall be borne by the Employer.
- To and fro charges and accommodation for the Instructor (Trainer) and Training material for the Trainees shall be included in the prices quoted by the bidder. However, arrangements for trainees and premises for conducting the training shall be arranged by OWNER.

Name of Bidder:

Signature of Bidder:

(Printed Name)

(Designation)

(Common Seal)

NEPAL ELECTRICITY AUTHORITY
PROJECT MANAGEMENT DIRECTORATE
SASEC Power System Expansion Project

(I) 220/132/33kV Manang (new) GIS Substation and (II) 220/132/33kV Khudi (new) GIS Substation

**Schedule No. 4 : Installation and Other Services
(d): Maintenance Charges**

SI No	Description	Unit	Qty.	Total Maintenance Charges	
				Rate	Total Maintenance Charges
1	None	Year			
2	None	Year			
	Total Maintenance Charges (To be carried forward to Schedule 5: Grand Summary)				

Name of Bidder:

Signature of Bidder:

(Printed Name)

(Designation)

(Common Seal)

**NEPAL ELECTRICITY AUTHORITY
PROJECT MANAGEMENT DIRECTORATE**

MARSYANGDI CORRIDOR 220 kV TRANSMISSION LINE PROJECT

(I) 220/132/33kV Manang (new) GIS Substation and (II)220/132/33kV Khudi (new) GIS Substation

Schedule No. 4 (e) : Type Test Charges for Type Tests to be conducted abroad

Sl. No.	Description of Tests		Testing Location	TEST CHARGES	
				Currency	Amount
1	2		3	4	5
220/132/33kV 1-Ph , 53.33 MVA Auto Transformer					
1	220/132/33kV, 53.33 MVA, 1-Ph Auto Transformer	Temperature rise test			
2		Measurement of harmonic level in no load current			
3		Measurement of acoustic noise level			
4		Measurement of Zero seq. reactance			
5		Measurement of power taken by fans and oil pumps			
6		Dynamic Short Circuit Test for only 1-Ph Auto Transformer			
220/132/33kV 1-Ph , 33.33 MVA Auto Transformer					
1	220/132/33kV, 33.33 MVA, 1-Ph Auto Transformer	Temperature rise test			
2		Measurement of harmonic level in no load current			
3		Measurement of acoustic noise level			
4		Measurement of Zero seq. reactance			
5		Measurement of power taken by fans and oil pumps			
6		Dynamic Short Circuit Test for only 1-Ph Auto Transformer			
132/33kV,50 MVA, 3-Ph Auto Transformer					
1	132/33kV,50 MVA, 3-Ph Auto Transformer	Temperature rise test			
2		Measurement of harmonic level in no load current			
3		Measurement of acoustic noise level			
4		Measurement of Zero seq. reactance			
5		Measurement of power taken by fans and oil pumps			

Schedule No. 4 (e) : Type Test Charges for Type Tests to be conducted abroad

Sl. No.	Description of Tests		Testing Location	TEST CHARGES	
				Currency	Amount
1	2		3	4	5
	132/33kV 31.5 MVA, 3-Ph Auto Transformer				
1	132/33kV,30 MVA, 3-Ph Auto Transformer	Temperature rise test			
2		Measurement of harmonic level in no load current			
3		Measurement of acoustic noise level			
4		Measurement of Zero seq. reactance			
5		Measurement of power taken by fans and oil pumps			
1	GIS Equipment	For all ratings tests to be conducted as per relevant IEC			
2	Instrument Transformers	For all ratings tests to be conducted as per IEC:60044-1 & IEC-60358			
3	Lightening Arrestor	For all ratings tests to be conducted as per IEC: 60099-4			
4	Insulators	For all type of Insulators including RIP insulators of different ratings			
Total of Type Tests charges (Total of column 5 to be carried forward to Schedule 5: Grand Summary)					

Name of Bidder:

Signature of Bidder:

(Printed Name)

(Designation)

(Common Seal)

**NEPAL ELECTRICITY AUTHORITY
PROJECT MANAGEMENT DIRECTORATE**

MARSYANGDI CORRIDOR 220 kV TRANSMISSION LINE PROJECT

(I) 220/132/33kV Manang (new) GIS Substation and (II) 220/132/33kV Khudi (new) GIS Substation

Schedule No. 4 (f) : Type Test Charges for Type Tests to be conducted in Nepal

Sl. No.	Description of Tests		Testing Location	Amount (NRs)
1	2		3	4
220/132/33kV 1-Ph , 53.33 MVA Auto Transformer				
1	220/132/33kV, 53.33 MVA, 1-Ph Auto Transformer	Temperature rise test		
2		Measurement of harmonic level in no load current		
3		Measurement of acoustic noise level		
4		Measurement of Zero seq. reactance		
5		Measurement of power taken by fans and oil pumps		
6		Dynamic Short Circuit Test for only 1-Ph Auto Transformer		
	220/132/33kV 1-Ph , 33.33 MVA Auto Transformer			
1	220/132/33kV, 33.33 MVA, 1-Ph Auto Transformer	Temperature rise test		
2		Measurement of harmonic level in no load current		
3		Measurement of acoustic noise level		
4		Measurement of Zero seq. reactance		
5		Measurement of power taken by fans and oil pumps		
6		Dynamic Short Circuit Test for only 1-Ph Auto Transformer		
	132/33kV,50 MVA, 3-Ph Auto Transformer			
1	132/33kV,50 MVA, 3-Ph Auto Transformer	Temperature rise test		
2		Measurement of harmonic level in no load current		
3		Measurement of acoustic noise level		
4		Measurement of Zero seq. reactance		
5		Measurement of power taken by fans and oil pumps		
	132/33kV 31.5 MVA, 3-Ph Auto Transformer			

Schedule No. 4 (f) : Type Test Charges for Type Tests to be conducted in Nepal

Sl. No.	Description of Tests		Testing Location	Amount (NRs)
1	2		3	4
1	132/33kV,30 MVA, 3-Ph Auto Transformer	Temperature rise test		
2		Measurement of harmonic level in no load current		
3		Measurement of acoustic noise level		
4		Measurement of Zero seq. reactance		
5		Measurement of power taken by fans and oil pumps		
1	GIS Equipment	For all ratings tests to be conducted as per relevant IEC		
2	Instrument Transformers	For all ratings tests to be conducted as per IEC:60044-1 & IEC-60358		
3	Lightening Arrestor	For all ratings tests to be conducted as per IEC: 60099-4		
4	Insulators	For all type of Insulators including RIP insulators of different ratings		
Total of Type Tests charges NRs (Total of column 4 to be carried forward to Schedule 5: Grand Summary)				

Name of Bidder:

Signature of Bidder:

(Printed Name)

(Designation)

(Common Seal)

NEPAL ELECTRICITY AUTHORITY
PROJECT MANAGEMENT DIRECTORATE
MARSYANGDI CORRIDOR 220 kV TRANSMISSION LINE PROJECT

(I) 220/132/33kV Manang (new) GIS Substation and (II) 220/132/33kV Khudi (new) GIS Substation

Schedule No. 5: Grand Summary

Sl. No.	Description	Total Price Foreign Currency Portion		Total Price Local Currency (NRs)
		Currency	Amount	Amount
1	TOTAL SCHEDULE NO. 1			
	Plant and Equipment including Mandatory Spares to be supplied from abroad.			
2	TOTAL SCHEDULE NO. 2			
	Plant and Equipment including Mandatory Spares Parts to be supplied from within Nepal			
3	TOTAL SCHEDULE NO. 3			
	Design Services			
4	TOTAL SCHEDULE NO. 4			
	(a) Installation and construction charges			
	(b) Training charges for training to be imparted abroad			
	(c) Training charges for training to be imparted in Nepal			
	(d) Maintenance charges			
	(e) Type Tests charges for type Tests to be conducted abroad			
	(f) Type Tests charges for type Tests to be conducted Nepal			
	GRAND TOTAL FOR Substation Part [1+2+3+4]			
	Grand Total In Words			

Name of Bidder:

Signature of Bidder:

(Printed Name)

(Designation)

(Common Seal)

**NEPAL ELECTRICITY AUTHORITY
PROJECT MANAGEMENT DIRECTORATE**

MARSYANGDI CORRIDOR 220 kV TRANSMISSION LINE PROJECT

(I) 220/132/33kV Manang (new) GIS Substation and (II) 220/132/33kV Khudi (new) GIS 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

Name of Bidder: _____

Signature of Bidder: _____

(Printed Name) _____

(Designation) _____

(Common Seal) _____