(An Undertaking of Government of Nepal)

PROJECT MANAGEMENT DIRECTORATE



SASEC Power System Expansion Project MARSYANGDI-KATHMANDU 220kV T/L PROJECT

BIDDING DOCUMENT FOR

Procurement of Plant for 220 kV Air Insulated Substation (AIS) in Matatirtha, Kathmandu and 220kV Gas Insulated Substation (GIS) in Markichowk, Marsyangdi (Design, Supply and Installation and Commissioning)

> Single-Stage, Two-Envelope Bidding Procedure

Invitation for Bids No.: ICB-PMD-MKTLP-076/77 - 02 ICB No.: ICB-PMD-MKTLP-076/77 - 02 Employer: Nepal Electricity Authority

Country: Nepal

VOLUME -III OF III

June 2020

Marsyangdi-Kathmandu 220kV Transmission Line Project Project Management Directorate Matatirtha Substation, Chandragiri Municipality, Kathmandu, Nepal

Telephone: +977-1-5164112

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Letter of Price Bid

[Bidder's Letterhead]

		D	ate:	
		ICB	No.:	
		Invitation for Bid	No.:	
To:.				
We,	the undersigned, declare that:			
(a)	We have examined and have Addenda issued in accordance			including
(b)	We offer to design, manufactur conformity with the Bidding Do			
(c)	The total price of our Bid, exclusive when left blank, is the Bid Price			or,
(d)	Our bid shall be valid for a periodeadline in accordance with the and may be accepted at any tire	e Bidding Documents, and it	shall remain binding	
(e)	If our bid is accepted, we com the Bidding Document;	mit to obtain a performance	e security in accord	ance with
(f)	We have paid, or will pay the the bidding process or execution		uities, or fees with	respect to
	Name of Recipient	Address	Reason	Amount
(g)	We understand that this bid, to your notification of award, shall contract is prepared and executive.	I constitute a binding contra		
(h)	We understand that you are no bid that you may receive.	ot bound to accept the lower	st evaluated bid or	any other

other documents relating to the bid submission and to have them audited by auditors appointed by ADB.
Note: The Failure to specify the total price of the bid in (c) above or the Bid Price in the Summary of Bill of Quantities shall be ground for declaring the bid nonresponsive.
Name
In the capacity of
Duly authorized to sign the Bid for and on behalf of
Date

We agree to permit ADB or its representative to inspect our accounts and records and

(i)

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SASEC Power System Expansion Project

Marsyangdi-Kathmandu 220 kV Transmission LineProject

ICB-PMD-MKTLP-076/77-02: Design, Supply, Installation and Commissioning of 220 kV AIS Substation at Matatirtha, Kathmandu & 220 kV GIS Substation at Markichowk, Marsyangdi

Schedul	e No.1: Plant and Equipment including Mandatory Spares to	be supplie	d from abro	oad					
Item No.	Item description	Country of origin	Estimated			forwarding an	cluding insurance, clearing, dd transportation to site s and Duties applicable in Nepal)	Total Amount (Excluding Taxes and Duties)	Custom, VAT and other taxes
			Unit	Quantity	Currency#	FC Unit Rate Amount		FC	LC
1	2	3	4	5	6	7	$8 = (7) \times (5)$	9=8	10
I-A	Extension of 220/132/33kV Matatirtha Substation								
	Part-A: EMPLOYER ASSESSED QUANTITIES								
A1	POWER TRANSFORMER								
A1.1	Testing & Maintenance Equipments								
a)	Transformer Oil Filtration plant (10KLPH)		No	1					
В	245 kV equipment								
1.0	216 kV Surge Arrestors (1-phase)		Nos.	31					
2.0	245 kV Bust Post Insulator (Except auxiliary buses of transformer)		Nos	70					
С	145 kV equipment								
1.0	145 kV Surge Arrestors								
а	120 kV Surge Arrestors (1- Phase)		Nos	7					
2.0	145kV Bus post insulators (Except auxiliary buses of transformer)		Set	15					
	72.5kV EQUIPMENT								
1.1	72.5 kV BPI (1-phase)		Nos.	15					
D.2	33kV Equipments								
1.1	30 kV Surge Arrestors (1-phase)		Nos.	3					
1.2	36 kV HG Fuse along with support insulator (1-phase)		Nos.	3					
Е	RELAY PANELS (WITH AUTOMATION)								
1.0	220 kV								
а	Circuit Breaker Relay Panel								
i	With Auto Reclose		Set	5					
ii	With out Auto Reclose		Set	3					
b	Line Protection Panel (Matatirtha -Marsyangdi)		Set	2					
С	Line Protection Panel (Matatirtha –Trishuli)		Set	2					
d	Current Differential Relay for other end of line (Upper Trishuli 3A Line)		Nos	2					
е	Transformer Protection Panel (For both HV & MV side) including Remote Tap Changing Control Panel with AVR		Set	2					

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			Unit	Quantity	G "	FC		FC	LC
1	2	3	4	5	Currency#	Unit Rate 7	Amount 8 = (7) x (5)	9=8	10
f	Bus Bar Protection Panel	3	Set	1	•	,	0 - (1) X (3)	7-0	10
F	COMMON EQUIPMENTS		Set	1					
1.0	Relay Testing Tool kit(3 phase type)		Set	1					
2.0	Time synchronisation equipment		No.	1					
G	SUBSTATION AUTOMATION		140.	-					
G.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								
а	Main bays to be automated								
i	220 kV system		Bay Nos	10					
ii	Bays to be automated of existing 132 kV substation		Bay Nos	10					
iii	Bays to be automated of existing 33 kV substation		Bay Nos	8					
iv)	bays to be dutomated of existing 11 KV substation		Bay Nos	11					
v)	BCU for controlling & monitoring of Auxilary System		Set	1					
Н	Teleprotection & communication Equipments								
a(i)	Digital Protection Coupler		Nos	4					
a(ii)	Digital Protection Coupler(for other end)		Nos	2					
b	PABX with following configuration as per TS		Set	1					
i)	2 wire subscriber interface card with capacity 32 local subscribers (along with 32 nos. Instruments)								
ii)	4 wire E & M interface card with capacity 8 nos. trunks (For PLCC)								
iii)	E-1 interface with 2 trunks G-703								
iv)	2 wire interface with 1 trunk (For PSTN)								
С	Testing & Maintenance equipment (print test kit only)		Set	1					
d	4 wire telephone equipment		No	1					
Ī	LT Switchgear (As per Technical specification)								
а	415V Main switchboard		Set	1					
b	415V ACDB		Set	1					
С	415V MLDB		Set	1					
d	415V Emergency LDB		Set	1					
е	220V DCDB		Sets	2					

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Schedul				cluding insurance, clearing,	Total Amount				
Item No.	Item description	Country of origin	Estimated				nd transportation to site s and Duties applicable in Nepal)	(Excluding Taxes and Duties)	Custom, VAT and other taxes
			Unit	Quantity		FC		FC	LC
1	2	3	4	5	Currency#	Unit Rate 7	Amount	9=8	10
<u></u>	Batteries 2	3	4	3	6	/	$8 = (7) \times (5)$	9=8	10
a	220V								
i	600 AH		Nos	2					
K	Float Cum Boost Battery Charger		1105						
a	220V Float Cum Boost Battery Charger								
	80A/80A		Nos	2					
L	Diesel Generator with control Panel		1105						
a	100 KVA		Set	1					
M	Fire Protection System		361	1					
a	Portable /Trolley/Wheel mounted extinguishers								
	9 litre water type		Nos	5					
i	50 litre foam type		Nos	2					
iii	4.5 kg CO ₂ type		Nos	13					
	4.5 kg Dry Chemical Power (DCP) type		Nos	5					
b	Smoke detection system		Set	1					
С	Fire detection and Alarm System		Set	1					
N	Cables along with clamps, glands, lugs and straight joints etc.								
а	Power Cables - (1.1kV grade)								
i	3.5Cx300 sqmm (XLPE) cable for filter Machine along with termination arrangement as per TS		KM	1					
0	Air conditioning System for Control room cum administrative building								
а	High wall type/Ceiling type split AC unit of 2 TR capacity		Nos	20					
p	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	426					
(b)	Pipe Structure including Foundation Bolts .		MT	150					
(c)	Fastners and step bolts.(Nuts,Bolts & Washers)		MT	18					
Q	Communication equipments for Matatirtha Substation								
1	Transmission Equipment								
(i)	SDH Equipment (STM- 4 MADM, upto 3 MSP protected dir	ections)							

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FC: Foreign Currency
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Schedule No.1: Plant and Equipment including Mandatory Spares to be supplied from abroad CIP Project Site including insurance, clearing, **Total Amount** forwarding and transportation to site Custom, VAT and other Country Estimated (Excluding Taxes and (Excluding Taxes and Duties applicable in of origin taxes Item description **Duties**) Item No Nepal) FC FC LC Unit **Ouantity** Currency# **Unit Rate** Amount 3 4 5 6 $8 = (7) \times (5)$ 9=8 10 (a) Base Equipment (Common cards, Cross-connect/control cards, No. 2 Optical base cards, Power supply cards, power cabling, other hardware & accessories including sub-racks, patch cords, DDF etc. fully equipped excluding (ii) and (iii) below) (ii) Optical Interface/SFP# for a) L4.2 Nos. 4 b) L4.1 Nos. 6 c) S4.1 Nos. 2 (iii) Tributary Cards E1 Interface card (Minimum 16 interfaces per card) 2 Nos. Ethernet interfaces 10/100 Mbps with Layer-2 switching No. 4 (Minimum 4 interfaces per card.) 3 **Equipment Cabinets** a) For SDH Equipment 2 No. TMN – Craft Terminal for SDH & PDH Equipments (a) Hardware Set* 1 (b) Software Set* 1 Main Distribution Frame(100 pairs) No. 1 6 **BOQ** for Auxiliary Power Supply Equipments (i) SMPS based 48V DC Power Supply (DCPS) system Nos. (ii) VRLA type Battery bank for above DCPS system Nos. 1 Note# :Optical interface/SFP can be provided with Optical base card or Control card with the condition that control card shall not be equipped with more than one Optical interface/SFP and optical card with not more than two Optical interface/SFP. However main and protection channel shall be terminated on separate cards Note*: Set shall include all required hardware/software for complete TMN -Craft Terminal system as specified in technical specifications.

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		Country					cluding insurance, clearing,	1 otal Amount	Custom VAT and other
Item No.	Item description	Country of origin	Estimated			forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)		(Excluding Taxes and Duties)	Custom, VAT and other taxes
			Unit	Quantity			FC		LC
			UIII	Quantity	Currency#	Unit Rate	Amount		
1	2	3	4	5	6	7	$8 = (7) \times (5)$	9=8	10
	Note** : Consider for existing equipment installed at Matatitha								
	(Existing) and Optical Interface Card(s)/SFP shall be suitable to								
	integrate with equipment installed Matatirtha (Existing).								
	Sub-Total Part-A								
	Part-B: CONTRACTOR ASSESSED QUANTITIES								
Α	Erection Hardware								
	Insulator strings, Disc Insulators, Hardware, conductor, Al tube, bus-								
	bar materials, cable trays, Bay MB, clamps, spacers, connectors								
	including equipment connectors, Junction box, earthwire, buried cable								
	trenches/pipe equipment & lighting, all accessories etc. for the								
а	following: 220 kV Layout (DMT Layout)								
i	Line Bay		Set	4					
ii	Transformer Bay		Set	2					
	TBC Bay		Set	1					
	BC bay		Set	1					
	Bus work (Three Bays)		Set	3					
b	For spare unit of 220/132/36 kV auto transformer connection through		Set	1					
~	auxiliary buses, Neutral formation and delta formation (for two banks):		361	1					
	Required 245 kV BPI for HV auxiliary bus, 132 kV BPI for 132 kV								
	Auxilary bus, 72.5 kV BPI for tertiary auxilary 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.								
С	Erection Hardware etc for 72.5kV equipments & LT Transformer connection		Set	1					
d	Erection Hardware etc for 36 kV Transformer & LT Transformer		Set	1					
Λ.	connection								
A1	Connection of 132 kV side of Transformer on exiting 132kV Bays			_					
i	132 kV cable (with Copper conductor) of suitable current rating along with cable termination kit (both end i.e.Transformer 132 kV end		Set	2					
	and 132 bay end) for 132 kV side of Transformer connection on								
	existing 132kV Bays connection as per specification including one								
	spare cable connection arrangement			1					

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Item No.	Item description	Country of origin	Estimated			forwarding an	cluding insurance, clearing, ad transportation to site is and Duties applicable in Nepal)	Total Amount (Excluding Taxes and Duties)	Custom, VAT and other taxes
			Unit	Quantity		FC		FC	LC
1	2	3	4	5	Currency#	Unit Rate 7	Amount	9=8	10
c)	Directional over current & E/F Protection Relay	3		1	6	7	$8 = (7) \times (5)$	9=8	10
ii)	Line protection panel :		No.	1					
a)	Distance Protection relay- Main-1		Set	1					
b)	Current differential Protection relay- Main-2	+	Set	1					
iii)	Breaker Relay panel:	+	Set	1					
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					
(VI)	Teleprotection Equipments								
i)	Set of prints for protection coupler (digital)	+	Set	1					
,	1 ()	+	<u> </u>	1					
(VII)	SAS								
i)	Bay Control Unit (IED) of each type	+	Set	1					
ii)	Ethernet Switch of each type		Set	1					
				-					
(VIII)	BATTERY CHARGER(220kV)								
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					
(IX)	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					

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Item No.	Item description	Country of origin Estimated			CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)		Total Amount (Excluding Taxes and Duties)	Custom, VAT and other taxes	
			Unit	Quantity	Currency#	Unit Rate	FC Amount	FC	LC
1	2	3	4	5	6	7	$8 = (7) \times (5)$	9=8	10
(X)	Mandatory Spares of Communication Equipments								
1	Transmission Equipment								
A	SDH Equipment (STM- 4 MADM, upto 3 MSP protected directions)								
(i)	Common cards, Power supply cards, power cabling, other		Set ^{\$\$}	1					
	hardware & accessories (each)								
(ii)	Optical Interface/SFP for								
a)	L4.2		No.	2					
b)	L4.1		No.	3					
c)	S4.1		No.	1					
(iii)	Tributary Cards								
(a)	E1 Interface card (Minimum 16 interfaces per card)		No.	1					
(b)	Ethernet interfaces 10/100 Mbps with Layer-2 switching		No.	1					
	(Minimum 4 interfaces per card.)								
3	Pre Connectorized Optical Fiber Patch Cords (10 Mtrs) –		Set	1					
	Pack of Six Patch Cords								
4	Mandatory Spares for DCPS								
a)	MCCB/MCB-2P/ Contactor/ Timer/ Relay of each type & rating (as applicable)		Set	1					
b)	Single Pole MCBs (for outgoing DC Feeders)		Nos.	5					
c)	Electronic Printed Circuit Board / Card of each type (all cards/module including SMPS Module, DC Power Supply Controller, various interface cards etc.)		Set	1					
	Note\$\$: One Set means one of each type of module/unit card etc								
	Sub-Total Part-C								
	Total for Extension of 220/132/33kV Matatirtha Substation(220 kV AIS) [(I-A)- (Part-A+ Part-B+ Part C)]								

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			Unit	Quantity			FC	FC	LC
					Currency#	Unit Rate	Amount		
11	2	3	4	5	6	7	$8 = (7) \times (5)$	9=8	10
I-B	Extension of 220/132/33kV Marsyangdi								
	Substation (220 kV GIS & 132 kV AIS)								
	Part-A : EMPLOYER ASSESSED QUANTITIES								
A1	POWER TRANSFORMER								
A1.1	POWER TRANSFORMER								
a)	53.33MVA, 220/132/33 KV, 1-phase Autotransformer (Excluding insulating oil)		Nos.	3					
b)	Insulating oil for 53.33MVA , 220/132/33 KV, 1-phase Autotransformer (* 1Lot = Oil for 1Autotransformers)		Lot*	3					
c)	33kV Current transformer (NCT) for autotrasnformer		No	1					
(d)	Online insulating oil drying System		Nos.	3					
(e)	Online dissolved Gas (Multi-gas) and Moisture Analyser		Nos.	3					
A1.2	Testing & Maintenance Equipments								
a)	Transformer Oil Filtration plant (10KLPH)		No	1					
A2	LT TRANSFORMER								
1.0	630 kVA,33/0.400kV		Nos	1					
В	245 kV equipment								
1.10	Testing & Maintenance Equipment for GIS								
i)	EOT crane for 245kV GIS Hall		Set	1					
B2	245KV Outdoor Equipment		N.T.	21		1			
1.1	216 KV Surge Arrester (1-phase) 245kV BPI		Nos.	31					
1.4	243KV DF1		Nos.	14					
С	145 kV equipment								
	•						-		

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SASEC Power System Expansion Project

Marsyangdi-Kathmandu 220 kV Transmission LineProject

ICB-PMD-MKTLP-076/77-02: Design, Supply, Installation and Commissioning of 220 kV AIS Substation at Matatirtha, Kathmandu & 220 kV GIS Substation at Markichowk, Marsyanddi

FC: Foreign Currency
LC: Local Currency

Schedule No.1: Plant and Equipment including Mandatory Spares to be supplied from abroad CIP Project Site including insurance, clearing, **Total Amount** forwarding and transportation to site Custom, VAT and other Country Estimated (Excluding Taxes and (Excluding Taxes and Duties applicable in of origin taxes Item description **Duties**) Item No Nepal) FC FC LC Unit **Ouantity** Currency# Unit Rate Amount 2 3 4 5 6 $8 = (7) \times (5)$ 9=8 10 Line Protection Panel b Set 6 С Current Differential Relay for other end of line Nos 4 Transformer Protection Panel (For both HV & MV side) including 2 Set Remote Tap Changing Control Panel with AVR Bus Bar Protection Panel е Set 1 132 kV 2.0 Circuit Breaker Relay Panel ii With out Auto Reclose Set 2 Bus Bar Protection Panel (augmentation for 2 ICT bays) b 2 Set COMMON EQUIPMENTS F 1.0 Relay Test tool kit(3 phase type) Set 2.0 Time synchronisation equipment No. 1 G SUBSTATION AUTOMATION 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 Main bays to be automated а 220 kV system Bay Nos 11 ii 132 kV system (Transformer bay under present scope) Bay Nos iii Bays to be automated of existing 132 kV substation Bay Nos 6 iv) Bays to be automated of existing 33 kV substation Bay Nos 3 v) BCU for controlling & monitoring of Auxiliary System Set 1 **Teleprotection & communication Equipments** н h(i) Digital Protection Coupler Nos 6 h(ii) Digital Protection Coupler(for other end) Nos 4 PBAX with following configuration as per TS Set

PROJECT MANAGEMENT DIRECTORATE

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	No.1: Plant and Equipment including Mandatory Spares to								
Item No.	Item description	Country of origin	Estimated			forwarding ar	cluding insurance, clearing, ad transportation to site s and Duties applicable in Nepal)	Total Amount (Excluding Taxes and Duties)	Custom, VAT and other taxes
			Unit	Quantity	0 "	FC		FC	LC
1	2	3	4	5	Currency#	Unit Rate 7	Amount 8 = (7) x (5)	9=8	10
	wire subscriber interface card with capacity 32 local subscribers	3	4	3	0	/	$\mathbf{o} = (I) \mathbf{x} (\mathbf{o})$	9=0	10
(a	along with 32 nos. Instruments)								
ii) 4	wire E & M interface card with capacity 8 nos. trunks (For PLCC)								
iii) E	-1 interface with 2 trunks G-703								
	wire interface with 1 trunk (For PSTN)								
b To	esting & Maintenance equipment (print test kit only)		Set	1					
c 4	wire telephone equipment		No	1					
I L	T Switchgear (As per Technical specification)								
a 4	15V Main switchboard		Set	1					
b 4	15V ACDB		Set	1					
	15V MLDB		Set	1					
	15V Emergency LDB		Set	1					
e 22	20V DCDB		Sets	2					
J B	atteries								
a 22	20V								
i 60	00 AH		Nos	2					
K F	loat Cum Boost Battery Charger								
a 22	20V Float Cum Boost Battery Charger								
i 80	0A/80A		Nos	2					
L D	iesel Generator with control Panel								
a 10	00 kVA		Set	1					
M Fi	ire Protection System								
	ortable /Trolley/Wheel mounted extinguishers								
i 9	litre water type	† †	Nos	5					
	0 litre foam type		Nos	2					
	.5 kg CO ₂ type		Nos	13					
	.5 kg Dry Chemical Power (DCP) type		Nos	5					

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ICB-PMD-MKTLP-076/77-02: Design, Supply, Installation and Commissioning of 220 kV AIS Substation at Matatirtha, Kathmandu & 220 kV GIS Substation at Markichowk, Marsyanddi

FC: Foreign Currency
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Schedule No.1: Plant and Equipment including Mandatory Spares to be supplied from abroad CIP Project Site including insurance, clearing, **Total Amount** forwarding and transportation to site Custom, VAT and other Country Estimated (Excluding Taxes and (Excluding Taxes and Duties applicable in of origin taxes Item description **Duties**) Item No Nepal) FC FC LC Unit **Ouantity** Currency# **Unit Rate** Amount 2 3 4 5 6 $8 = (7) \times (5)$ 9=8 10 b Smoke detection system Set 1 Fire detection and Alarm System С Set 1 Cables along with clamps, glands, lugs and straight joints etc. Power Cables - (1.1kV grade) (a) 3.5Cx300 sgmm (XLPE) cable for filter Machine along with KM 1 termination arrangement as per TS 0 Air conditioning System for Control room cum administrative High wall type/Ceiling type split AC unit of 2 TR capacity Nos 25 Fabrication, galvanising and supply of following Steel Structures including nuts, bolts, all types of washers, packplates, step bolts and gusset plates including foundation bolts. Lattice Structure including Foundation Bolts (a) MT 163 Pipe Structure including Foundation Bolts . (b) MT 45 Fastners and step bolts.(Nuts,Bolts & Washers) (c) MT 8 P2 PRE-ENGINEERED BUILDING 220kV GIS Hall & Control Room Building including all supply materials from abroad except civil works and for civil works refer Schedule 4(a) a) 220kV GIS Hall 510 Sa.M b) AHU/Panel Room 200 Sq.M c) 220kV two storeyed Control Room Building 775 Sq.M Communication equipments for Marsyangdi Substation Transmission equipments (i) SDH Equipment (STM- 4 MADM, upto 3 MSP protected directions) (a) Base Equipment (Common cards, Cross-connect/control cards, No. 2 Optical base cards, Power supply cards, power cabling, other hardware & accessories including sub-racks, patch cords, DDF etc. fully equipped excluding (ii) and (iii) below)

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ICB-PMD-MKTLP-076/77-02: Design, Supply, Installation and Commissioning of 220 kV AIS Substation at Matatirtha, Kathmandu & 220 kV GIS Substation at Markichowk, Marsyangdi

Schedul	e No.1: Plant and Equipment including Mandatory Spares to	be supplie	d from abro	ad					LC. Local Currency
tem No.	Item description	Country of origin	Estimated			forwarding ar	cluding insurance, clearing, ad transportation to site s and Duties applicable in Nepal)	Total Amount (Excluding Taxes and Duties)	Custom, VAT and other taxes
			Unit	Quantity	Currency#	Unit Rate	FC Amount	FC	LC
1	2	3	4	5	6	7	$8 = (7) \times (5)$	9=8	10
(ii)	Optical Interface/SFP [#] for						(1) 12 (1)		
	L4.2		Nos.	6					
	L4.1		Nos.	6					
(iii)	Tributary Cards								
i	E1 Interface card (Minimum 16 interfaces per card)		Nos.	2					
ii	Ethernet interfaces 10/100 Mbps with Layer-2 switching (Minimum 4 interfaces per card.)		No.	4					
3	Equipment Cabinets								
(a)	For SDH Equipment		No.	2					
4	Main Distribution Frame(100 pairs)		No.	1					
5	BOQ for Auxiliary Power Supply Equipments								
(i)	SMPS based 48V DC Power Supply (DCPS) system		Nos.	1					
(ii)	VRLA type Battery bank for above DCPS system		Nos.	1					
	At Kathmandu LDC								
	SDH Equipment (STM- 4 MADM, upto 3 MSP protected directions)								
(a)	Base Equipment (Common cards, Cross-connect/control cards, Optical base cards, Power supply cards, power cabling, other hardware & accessories including sub-racks, patch cords, DDF etc. fully equipped excluding (ii) and (iii) below)		No.	1					
(i)	Optical Interface/SFP [#] for								
	L4.2		Nos.	2					
	L4.1		Nos.	2					
	S4.1		Nos.	2					
	Tributary Cards								
	E1 Interface card (Minimum 16 interfaces per card)		Nos.	1					
ii	Ethernet interfaces 10/100 Mbps with Layer-2 switching		No.	2					
	(Minimum 4 interfaces per card.)								
	Equipment Cabinets								
(a)	For SDH Equipment		No.	1					

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Marsyangdi-Kathmandu 220 kV Transmission LineProject

ICB-PMD-MKTLP-076/77-02: Design, Supply, Installation and Commissioning of 220 kV AIS Substation at Matatirtha, Kathmandu & 220 kV GIS Substation at Markichowk, Marsyangdi

Item No.	Item description	Country of origin	Estin	nated		forwarding an	cluding insurance, clearing, d transportation to site s and Duties applicable in Nepal)	Total Amount (Excluding Taxes and Duties)	Custom, VAT and other taxes
			Unit	Quantity		FC		FC	LC
					Currency#	Unit Rate	Amount		
1	2	3	4	5	6	7	$8 = (7) \times (5)$	9=8	10
3	Main Distribution Frame(100 pairs)		No.	1					
	Note#:Optical interface/SFP can be provided with Optical base card or Control card with the condition that control card shall not be equipped with more than one Optical interface/SFP and optical card with not more than two Optical interface/SFP. However main and protection channel shall be terminated on separate cards Note*: Set shall include all required hardware/software for complete TMN –Craft Terminal system as specified in technical specifications. Note**: Consider for existing equipment installed at Matatitha (Existing) and Optical Interface Card(s)/SFP shall be suitable to integrate with equipment installed Marsyangdi Substation (Existing).								
	Sub-Total Part-A								
	Part-B: CONTRACTOR ASSESSED QUANTITIES								
A	Erection Hardware Insulator strings, Disc Insulators, Hardware, conductor, Al tube, busbar materials, cable trays, clamps, spacers, connectors including equipment connectors, Junction box, earthwire, buried cable trenches/pipe equipment & lighting, all accessories etc. for the following:								
а	245kV GIS Termination Arrangement:								
i ii	Line Bay Transformer Bay (including 220 kV AIS connection for spare unit with GIS auxiliary bus module)		Set Set	2					
b	For 132 kV (Double Main Layout)			-					
i	Transformer Bay		Set	2					
ii	Bus work (For 3 bays and connection to existing 132kV switchyard, excluding bus post insulators)		Set	1					

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Marsyangdi-Kathmandu 220 kV Transmission LineProject

ICB-PMD-MKTLP-076/77-02: Design, Supply, Installation and Commissioning of 220 kV AIS Substation at Matatirtha, Kathmandu & 220 kV GIS Substation at Markichowk, Marsyangdi

Scriedui	e No.1: Plant and Equipment including Mandatory Spares to	be supplied	i iroiii abro	oau	1	T			
Item No.	Item description	Country of origin	Estin	nated		forwarding an	cluding insurance, clearing, d transportation to site s and Duties applicable in Nepal)	(Excluding Taxes and Duties)	Custom, VAT and other taxes
			Unit	Quantity	Currency#	Unit Rate	FC Amount	FC	LC
1	2	3	4	5	6	7	$8 = (7) \times (5)$	9=8	10
С	For spare unit of 220/132/36 kV auto transformer connection through auxiliary buses (132 kV, tertiary & Neutral auxiliary buses only), Neutral formation and delta formation (for two banks): Required 132 kV BPI for 132 kV Auxilary bus, 72.5 kV BPI for tertiary auxilary bus & delta formation, 36 kV BPI for Neutral formation & Neutral auxiliary bus including AI tube, bus-bar materials, clamps, spacers, connectors, including equipment connectors, support structures, Earthing of spare unit as per technical specification.		Set	1			0 = (/) X (c)	7-0	
d	Erection Hardware etc for 72.5kV equipments & LT Transformer connection		Set	1					
е	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					
В	Fire Protection System								
а	Pumping arrangement for HVW system & hydrant system, complete with all piping, valves, fittings,etc. inside pump house								
į	220/132kV (New) Substation		Set	1					
b	Hydrant system, complete U/G piping and accessories etc. outside the Pump House.								
- 1	220/132kV (New) Substation		Set	1					
С	HVW spray system, Hydrant system and complete U/G & O/G piping and accessories etc. out side the pump house for Transformer:								
c.1	Transformer								
i	53.33MVA , 220/132/33 KV, 1-phase Autotransformer		Sets	7					
С	Illumination System								
а	Control room cum administrative building illumination		LS	1					
b	Fire fighting building illumination		LS	1					
С	Switchyard lighting		LS	1					
d	Street lighting	 	LS	1	<u> </u>				

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ICB-PMD-MKTLP-076/77-02: Design, Supply, Installation and Commissioning of 220 kV AIS Substation at Matatirtha, Kathmandu & 220 kV GIS Substation at Markichowk, Marsyangdi

Schedul	e No.1: Plant and Equipment including Mandatory Spares to	be supplie	d from abro	ad		_		T	
Item No.	Item description	Country of origin	Estim	ated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)		(Excluding Taxes and Duties)	Custom, VAT and other taxes
			Unit	Quantity			FC	FC	LC
					Currency#	Unit Rate	Amount		
1	2	3	4	5	6	7	$8 = (7) \times (5)$	9=8	10
е	Transit Camp illumination		LS	1					
f	245kV GIS Building including panel room		LS	1					
g	Township quarter (C-Type, 4 nos)		LS	1					
h	Township quarter (D-Type, 1 nos)		LS	1					
i	Car parkings		LS	1					
D	Air conditioning & ventilation System								
D.1	Air conditioning system								
(i)	Panel room in 245kV GIS Hall		LS	1					
D.2	Ventilation system		20						
(i)	245KV GIS hall		LS	1					
G	POWER & CONTROL CABLES								
а	Power Cables(PVC)- (1.1kV grade)		LS	1					
b	Control Cable (PVC)- (1.1kV grade)		LS	1					
С	Cable glands, lugs & straight through joints for Power & Control cables		LS	1					
н	Integration of all 220/132/33kV Bays under present scope with the SCADA of SIEMENS (SINAUT Spectrum) at Load Dispatch Centre, Kathmandu including supply of Hardware, Software, accessories etc. as per TS Section Project.		LS	1					
	Sub-Total Part-B								
	Part-C: Mandatory Spares								
(I)	SPARES FOR AIS EQUIPMENTS								
(1) A	145kV CB			+					
i)	Complete Pole of circuit breaker including pole column, interrupter, with driving mechanism and Marshaling Box but without support structure for								

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Schedule No.1: Plant and Equipment including Mandatory Spares to be supplied from abroad CIP Project Site including insurance, clearing, **Total Amount** forwarding and transportation to site Custom, VAT and other Country Estimated (Excluding Taxes and (Excluding Taxes and Duties applicable in of origin taxes Item description **Duties**) Item No Nepal) FC FC LC Unit **Ouantity** Currency# Unit Rate Amount 1 2 3 4 5 6 $8 = (7) \times (5)$ 9=8 10 1250A, 31.5 KA (No. of Pole) No 1 Rubber gaskets, 'O' rings and seals (for complete replacement of Set 1 one pole of CB) Trip coils with resistor iii) Nos. 2 Closing coils with resistor iv) Nos. 1 Terminal Pads & connectors v) 2 Nos. Molecular filter vi) 2 Nos. vii) Relays, Power contactors, switch fuse units, limit switches, push Set 1 buttons, timers & MCB etc. (1 no. of each type) Pressure switches / Density monitor (1 no. of each type) viii) Set 1 ix) Auxiliary switch assembly (for one pole of CB) Set 1 В 145kV Isolator One complete pole including support Insulator, motor operating mechanism (MOM) with box but excluding structure 1250A, 31.5 KA, 1 E/S (no. of pole) No. 1 Copper contact fingers for male & female contacts ii) Set 2 Open/Close contactor assembly, timers, key interlock push button Set 1 switch & auxilliary switches iv) Limit Switch 2 Set Terminal Pads & Connectors 3 Nos. С 145kV CT 800A, 31.5 kA with 120% extended rating 1 No. 216 SA D Complete LA 1 No. Surge counter/monitor Nos. 5 Ε 120kV SA Complete LA No. Surge counter/monitor 5 Nos.

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Schedule No.1: Plant and Equipment including Mandatory Spares to be supplied from abroad CIP Project Site including insurance, clearing, **Total Amount** forwarding and transportation to site Custom, VAT and other Country Estimated (Excluding Taxes and (Excluding Taxes and Duties applicable in of origin taxes Item description **Duties**) Item No Nepal) FC FC LC Unit Quantity Currency# Unit Rate Amount 2 3 4 5 6 $8 = (7) \times (5)$ 9=8 10 F C&R PANELS Transformer protection panel: Transformer differential protection a) No. 1 REF protection relay with non-linear resistor b) No. 1 c) Directional over current & E/F Protection Relay No. 1 ii) Line protection panel: Distance Protection relay- Main-1 a) No. 1 b) Current differential Protection relay- Main-2 No. iii) Breaker Relay panel: Breaker failure relay a) No b) Trip circuit supervision relay 2 Nos. c) Self reset trip relay (relay of each type) Set 1 Hand reset trip relay(relay of each type) d) Set 1 Timer relay(relay of each type) 1 Set e) DC supervision relay(relay of each type) f) Set 1 Flag relays(relay of each type) Set 1 g) Auxiliary relays(relay of each type) h) Set 1 G Teleprotection Equipments Set of prints for protection coupler(digital) Set 1 Η SAS Bay Control Unit (IED) of each type Set 1 ii) Set Ethernet Switch of each type 1 **BATTERY CHARGER(220kV)** i) Set of control cards Set 1 ii) Set of relays Set 1 iii) Rectifier transformer No. 1 iv) Thyristor/diode Set 1 Fuses of Thyristor with indicators Set 6

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FC: Foreign Currency
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Date:

Item No.	Item description	Country of origin	Estimated			CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)		Total Amount (Excluding Taxes and Duties)	Custom, VAT and other taxes
			Unit	Quantity			FC	FC	LC
					Currency#	Unit Rate	Amount		
1	2	3	4	5	6	7	$8 = (7) \times (5)$	9=8	10
J	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					
	Sub-Total Part-C								
	Total For Extension of 220/132kV Marsyangdi Substation (220 kV GIS & 132 kV AIS) [(I-B)- (Part-A+ Part-B+ Part C)]								
	Total for Schedule 1 (Total of column 9 to be carried forward to Schdule 5: Grand Summary)								

Note: 1) Bidder is required to quote prices in this Schedule for all the 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 meet the
- # Specify currency in accordance with BDS ITB Clause 32.1, Part-

I of the Bidding Documents.

* Strike-out whichever is not applicable.

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

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LC: Local Currency (ALL Price in Local Currency)

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

| Example | Ex

Item No.	Item description	Estim	ated		e (Excluding VAT) LC	Inland transport	ation to site in LC	Total Amount (Excluding Taxes)	Custom, VAT and other taxes
		Unit	Quantity	Unit Rate	Amount	Unit Rate	Amount		
1	2	3	4	5	$6 = (4) \times (5)$	7	8=(4)x(7)	9=6+8	10
I-A	Extension of 220/132/33kV Matatirtha Substation								
	Part-A: EMPLOYER ASSESSED QUANTITIES								
A1	POWER TRANSFORMER								
A1.1	Testing & Maintenance Equipments								
a)	Transformer Oil Filtration plant (10KLPH)	No	1						
В	245 kV equipment								
1.0	216 kV Surge Arrestors (1-phase)	Nos.	31						
2.0	245 kV Bust Post Insulator (Except auxiliary buses of transformer)	Nos	70						
С	145 kV equipment								
1.0	145 kV Surge Arrestors								
а	120 kV Surge Arrestors (1- Phase)	Nos	7						
2.0	145kV Bus post insulators (Except auxiliary buses of transformer)	Set	15						
D1	72.5kV EQUIPMENT								
1.1	72.5 kV BPI (1-phase)	Nos.	15						
D.2	33kV Equipments								
1.1	30 kV Surge Arrestors (1-phase)	Nos.	3						
1.2	36 kV HG Fuse along with support insulator (1-phase)	Nos.	3						
E	RELAY PANELS (WITH AUTOMATION)								
1.0	220 kV								
а	Circuit Breaker Relay Panel								
i	With Auto Reclose	Set	5						
i	With out Auto Reclose	Set	3						
b	Line Protection Panel (Matatirtha -Marsyangdi)	Set	2						
С	Line Protection Panel (Matatirtha –Trishuli)	Set	2						
d	Current Differential Relay for other end of line (Upper Trishuli 3A Line)	Nos	2						
е	Transformer Protection Panel (For both HV & MV side) including Remote Tap Changing Control Panel with AVR	Set	2	_					

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LC: Local Currency (ALL Price in Local Currency)

Item No.	Item description	Estima	ated	Ex Faxtory Price (Excluding VAT) in LC		Inland transport	ation to site in LC	Total Amount (Excluding Taxes)	Custom, VAT and other taxes
		Unit	Quantity	Unit Rate	Amount	Unit Rate	Amount		
1	2	3	4	5	$6 = (4) \times (5)$	7	8=(4)x(7)	9=6+8	10
f	Bus Bar Protection Panel	Set	1						
F	COMMON EQUIPMENTS								
1.0	Relay Testing Tool kit(3 phase type)	Set	1						
2.0	Time synchronisation equipment	No.	1						
G	SUBSTATION AUTOMATION								
0.1	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								
а	Main bays to be automated								
i	220 kV system	Bay Nos	10						
ii	Bays to be automated of existing 132 kV substation	Bay Nos	10						
iii	Bays to be automated of existing 33 kV substation	Bay Nos	8						
iv)	Bays to be automated of existing 11 kV substation	Bay Nos	11						
v)	BCU for controlling & monitoring of Auxilary System	Set	1						
Н	Teleprotection & communication Equipments								
. ,	Digital Protection Coupler	Nos	4						
a(ii)	Digital Protection Coupler(for other end)	Nos	2						
	PABX with following configuration as per TS	Set	1						
,	2 wire subscriber interface card with capacity 32 local subscribers (along with 32 nos. Instruments)								
,	4 wire E & M interface card with capacity 8 nos. trunks (For PLCC)								
	E-1 interface with 2 trunks G-703								
,	2 wire interface with 1 trunk (For PSTN)								
	Testing & Maintenance equipment (print test kit only)	Set	1						
	4 wire telephone equipment	No	1						
	LT Switchgear (As per Technical specification)								
	415V Main switchboard	Set	1						
	415V ACDB	Set	1						
	415V MLDB	Set	1						
	415V Emergency LDB	Set	1						
е	220V DCDB	Sets	2						

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LC: Local Currency (ALL Price in Local Currency)

	5 100.2. I lant and Equipment including mandatory opares I are	1		·				1	
Item No.	Item description	Estin	nated		e (Excluding VAT) n LC	Inland transpor	tation to site in LC	Total Amount (Excluding Taxes)	Custom, VAT and other taxes
		Unit	Quantity	Unit Rate	Amount	Unit Rate	Amount		
1	2	3	4	5	$6 = (4) \times (5)$	7	8=(4)x(7)	9=6+8	10
٦	Batteries								
а	220V								
i	600 AH	Nos	2						
K	Float Cum Boost Battery Charger								
а	220V Float Cum Boost Battery Charger								
i	80A/80A	Nos	2						
L	Diesel Generator with control Panel								
а	100 KVA	Set	1						
М	Fire Protection System								
а	Portable /Trolley/Wheel mounted extinguishers								
i	9 litre water type	Nos	5						
ii	50 litre foam type	Nos	2						
	4.5 kg CO₂ type	Nos	13						
	4.5 kg Dry Chemical Power (DCP) type	Nos	5						
b	Smoke detection system	Set	1						
С	Fire detection and Alarm System	Set	1						
N	Cables along with clamps, glands, lugs and straight joints etc.								
	Power Cables - (1.1kV grade)								
	3.5Cx300 sqmm (XLPE) cable for filter Machine along with termination arrangement as per TS	KM	1						
	Air conditioning System for Control room cum administrative building								
а	High wall type/Ceiling type split AC unit of 2 TR capacity	Nos	20						
r	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	426						
	Pipe Structure including Foundation Bolts .	MT	150						
	Fastners and step bolts.(Nuts,Bolts & Washers)	MT	18						
_	Communication equipments for Matatirtha Substation								
	Transmission Equipment		1						

SASEC Power System Expansion Project
Marsyangdi-Kathmandu 220 kV Transmission LineProject

ICB-PMD-MKTLP-076/77-02: Design, Supply, Installation and Commissioning of 220 kV AIS Substation at Matatirtha, Kathmandu & 220 kV GIS Substation at Markichowk, Marsyangdi

LC: Local Currency (ALL Price in Local Currency)

Item No.	Item description	Estim	nated		e (Excluding VAT) LC	Inland transports	ation to site in LC	Total Amount (Excluding Taxes)	Custom, VAT and other taxes
		Unit	Quantity	Unit Rate	Amount	Unit Rate	Amount		
1	2	3	4	5	$6 = (4) \times (5)$	7	8=(4)x(7)	9=6+8	10
	SDH Equipment (STM-4 MADM, upto 3 MSP protected directi	ions)							
	Base Equipment (Common cards, Cross-connect/control cards, Optical base cards, Power supply cards, power cabling, other hardware & accessories including sub-racks, patch cords, DDF etc. fully equipped excluding (ii) and (iii) below)	No.	2						
	Optical Interface/SFP [#] for								
	L4.2	Nos.	4						
	L4.1	Nos.	6						
	S4.1	Nos.	2						
	Tributary Cards								
	E1 Interface card (Minimum 16 interfaces per card)	Nos.	2						
ii	Ethernet interfaces 10/100 Mbps with Layer-2 switching (Minimum 4 interfaces per card.)	No.	4						
3	Equipment Cabinets								
a)	For SDH Equipment	No.	2						
4	TMN - Craft Terminal for SDH & PDH Equipments								
(a)	Hardware	Set*	1						
(b)	Software	Set*	1						
5	Main Distribution Frame(100 pairs)	No.	1						
6	BOQ for Auxiliary Power Supply Equipments								
(i)	SMPS based 48V DC Power Supply (DCPS) system	Nos.	1						
(ii)	VRLA type Battery bank for above DCPS system	Nos.	1						
	Note# :Optical interface/SFP can be provided with Optical base card or Control card with the condition that control card shall not be equipped with more than one Optical interface/SFP and optical card with not more than two Optical interface/SFP. However main and protection channel shall be terminated on separate cards								
	Note*: Set shall include all required hardware/software for complete TMN –Craft Terminal system as specified in technical specifications.								

SASEC Power System Expansion Project
Marsyangdi-Kathmandu 220 kV Transmission LineProject

ICB-PMD-MKTLP-076/77-02: Design, Supply, Installation and Commissioning of 220 kV AIS Substation at Matatirtha, Kathmandu & 220 kV GIS Substation at Markichowk, Marsyangdi

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	. No.2. I failt and Equipment including mandatory opares I ares			F	T				
Item No.	Item description	Estim	ated	Ex Faxtory Price (Excluding VAT) in LC		Inland transport	ation to site in LC	Total Amount (Excluding Taxes)	Custom, VAT and other taxes
		Unit	Quantity	Unit Rate	Amount	Unit Rate	Amount		
1	2	3	4	5	$6 = (4) \times (5)$	7	8=(4)x(7)	9=6+8	10
	Note**: Consider for existing equipment installed at Matatitha (Existing) and Optical Interface Card(s)/SFP shall be suitable to integrate with equipment installed Matatirtha (Existing).								
	Sub-Total Part-A								
	Part-B: CONTRACTOR ASSESSED QUANTITIES Erection Hardware								
	Insulator strings, Disc Insulators, Hardware, conductor, Al tube, bus-bar materials, cable trays, Bay MB, clamps, spacers, connectors including equipment connectors, Junction box, earthwire, buried cable trenches/pipe equipment & lighting, all accessories etc. for the following:								
	220 kV Layout (DMT Layout)								
	Line Bay	Set	4						
	Transformer Bay	Set	2						
	TBC Bay	Set	1						
	BC bay	Set	1						
	Bus work (Three Bays)	Set	3						
	For spare unit of 220/132/36 kV auto transformer connection through auxiliary buses, Neutral formation and delta formation (for two banks): Required 245 kV BPI for HV auxiliary bus, 132 kV BPI for 132 kV Auxiliary bus, 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						
	Erection Hardware etc for 72.5kV equipments & LT Transformer connection	Set	1						
	Erection Hardware etc for 36 kV Transformer & LT Transformer connection	Set	1						
	Connection of 132 kV side of Transformer on exiting 132kV Bays								
	132 kV cable (with Copper conductor) of suitable current rating along with cable termination kit (both end i.e.Transformer 132 kV end and 132 bay end) for 132 kV side of Transformer connection on existing 132kV Bays connection as per specification including one spare cable connection arrangement	Set	2						

SASEC Power System Expansion Project
Marsyangdi-Kathmandu 220 kV Transmission LineProject

ICB-PMD-MKTLP-076/77-02: Design, Supply, Installation and Commissioning of 220 kV AIS Substation at Matatirtha, Kathmandu & 220 kV GIS Substation at Markichowk, Marsyangdi

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Item No.	Item description	Estim	ated	Ex Faxtory Price (Excluding VAT) in LC		Inland transport	ation to site in LC	Total Amount (Excluding Taxes)	Custom, VAT and other taxes
		Unit	Quantity	Unit Rate	Amount	Unit Rate	Amount		
1	2	3	4	5	$6 = (4) \times (5)$	7	8=(4)x(7)	9=6+8	10
	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						
	Earth Rod (copper clad steel)	LS	1						
iii	Equipment for lightning protection	LS	1						
	Fire Protection System								
	Pumping arrangement for HVW system & hydrant system, complete with all piping, valves, fittings,etc. inside pump house								
	220/132kV (New) Substation	Set	1						
	Hydrant system, complete U/G piping and accessories etc. outside the Pump House.								
	220/132kV (New) Substation	Set	1						
	HVW spray system, Hydrant system and complete U/G & O/G piping and accessories etc. out side the pump house for Transformer:								
c.1	Transformer								
i	53.33MVA , 220/132/33 KV, 1-phase Autotransformer	Sets	7						
С	Illumination System								
а	Fire fighting building illumination	LS	1						
b	Illumination System for switchyard panel room								
i	220KV	Sets	4						
С	Control room cum administrative building illumination	LS	1						
d	Switchyard lighting	LS	1						
е	Street lighting	LS	1						
f	Township quarter (B-Type, 4 nos) for 2 nos. of quarter buildings	LS	1						
g	Township quarter (C-Type, 4 nos) for 1 no. of quarter buildings	LS	1						
h	Security room	LS	1	ĺ					
i	Car parkings	LS	1						
D	Air conditioning System								
а	Air conditioning for S/Y panel room								
i	220KV	Sets	4						
Е	POWER & CONTROL CABLES		-	İ					

SASEC Power System Expansion Project
Marsyangdi-Kathmandu 220 kV Transmission LineProject

ICB-PMD-MKTLP-076/77-02: Design, Supply, Installation and Commissioning of 220 kV AIS Substation at Matatirtha, Kathmandu & 220 kV GIS Substation at Markichowk, Marsyangdi

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				ı				1	
Item No.	Item description	Estimated		Ex Faxtory Price (Excluding VAT) in LC		Inland transport	ation to site in LC	Total Amount (Excluding Taxes)	Custom, VAT and other taxes
		Unit	Quantity	Unit Rate	Amount	Unit Rate	Amount		
1	2	3	4	5	$6 = (4) \times (5)$	7	8=(4)x(7)	9=6+8	10
а	Power Cables(PVC)- (1.1kV grade)	LS	1						
b	Control Cable (PVC)- (1.1kV grade)	LS	1						
с	Cable glands, lugs & straight through joints for Power & Control cables	LS	1						
F	Integration with LDC and MCC								
F.1	Integration of all 220/132/33kV Bays under present scope with the SCADA of SIEMENS (SINAUT Spectrum) at Load Dispatch Centre, Kathmandu including supply of Hardware, Software, accessories etc. as per TS Section Project.	LS	1						
F.2	Integration of all 220/132/33kV Bays under present scope with the SCADA of SIEMENS (SINAUT Spectrum) at Load Dispatch Centre, Kathmandu including supply of Hardware, Software, accessories etc. as per TS Section Project.	LS	1						
	Sub-Total Part-B								
	Part-C: Mandatory Spares								
(I)	72.5kV PT.(1-phase)	No.	1						
_ ` /	216 SA								
i)	Complete LA	No.	1						
ii)	Surge counter/monitor	Nos.	5						
(III)	120kV SA								
i)	Complete LA	No.	1						
ii)	Surge counter/monitor	Nos.	5						
(IV)	30kV SA								
i)	Complete LA	No.	1						
ii)	Surge counter/monitor	Nos.	5						
(V)	C&R PANELS								
i)	Transformer protection panel :								
a)	Transformer differential protection	No.	1						

SASEC Power System Expansion Project
Marsyangdi-Kathmandu 220 kV Transmission LineProject

ICB-PMD-MKTLP-076/77-02: Design, Supply, Installation and Commissioning of 220 kV AIS Substation at Matatirtha, Kathmandu & 220 kV GIS Substation at Markichowk, Marsyangdi

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		Unit	Quantity	Unit Rate	Amount	Unit Rate	Amount		
1	2	3	4	5	$6 = (4) \times (5)$	7	8=(4)x(7)	9=6+8	10
	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	Set	1						
b)	Current differential Protection relay- Main-2	Set	1						
iii)	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						
(VI)	Teleprotection Equipments								
	Set of prints for protection coupler (digital)	Set	1						
(VII)	SAS								
	Bay Control Unit (IED) of each type	Set	1						
	Ethernet Switch of each type	Set	1						
	31								
(VIII)	BATTERY CHARGER(220kV)								
	Set of control cards	Set	1						
	Set of relays	Set	1						
	Rectifier transformer	No.	1		†				
	Thyristor/diode	Set	1						
	Fuses of Thyristor with indicators	Set	6						
(IX)	COMMON SPARES								
	Bay unit Module	No.	1						

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Marsyangdi-Kathmandu 220 kV Transmission LineProject

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Item No.	Item description		ated		e (Excluding VAT)	Inland transpor	ation to site in LC Total Amount (Excluding Taxes)		Custom, VAT and other taxes
		Unit	Quantity	Unit Rate	Amount	Unit Rate	Amount		
1	2	3	4	5	$6 = (4) \times (5)$	7	8=(4)x(7)	9=6+8	10
ii)	2 wire local subscriber interface card for PABX	No.	1						
iii)	E1 Interface card for PABX	No.	1						
(X)	Mandatory Spares of Communication Equipments								
	Transmission Equipment								
A	SDH Equipment (STM- 4 MADM, upto 3 MSP protected directions)								
(i)	Common cards, Power supply cards, power cabling, other hardware & accessories (each)	Set ^{\$\$}	1						
(ii)	Optical Interface/SFP for								
	L4.2	No.	2						
b)	L4.1	No.	3						
c)	S4.1	No.	1						
	Tributary Cards								
(a)	E1 Interface card (Minimum 16 interfaces per card)	No.	1						
(b)	Ethernet interfaces 10/100 Mbps with Layer-2 switching (Minimum 4 interfaces per card.)	No.	1						
	Pre Connectorized Optical Fiber Patch Cords (10 Mtrs) – Pack of Six Patch Cords	Set	1						
4	Mandatory Spares for DCPS								
a)	MCCB/MCB-2P/ Contactor/ Timer/ Relay of each type & rating (as applicable)	Set	1						
b)	Single Pole MCBs (for outgoing DC Feeders)	Nos.	5						
c)	Electronic Printed Circuit Board / Card of each type (all cards/module including SMPS Module, DC Power Supply Controller, various interface cards etc.)	Set	1						
	Note\$\$: One Set means one of each type of module/unit card etc								
	Sub-Total Part-C								

SASEC Power System Expansion Project
Marsyangdi-Kathmandu 220 kV Transmission LineProject

ICB-PMD-MKTLP-076/77-02: Design, Supply, Installation and Commissioning of 220 kV AIS Substation at Matatirtha, Kathmandu & 220 kV GIS Substation at Markichowk, Marsyangdi

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Item No.	Item description	Estima	ated		e (Excluding VAT) LC	Inland transport	Inland transportation to site in LC Total Amount (Excluding Taxes)		
		Unit	Quantity	Unit Rate	Amount	Unit Rate	Amount		
1	2	3	4	5	$6 = (4) \times (5)$	7	8=(4)x(7)	9=6+8	10
	Total for Extension of 220/132/33kV Matatirtha Substation(220 kV AIS) [(I-A)- (Part-A+ Part-B+ Part C)]								
	Extension of 220/132/33kV Marsyangdi Substation (220 kV GIS & 132 kV AIS)								
	Part-A: EMPLOYER ASSESSED QUANTITIES								
A1	POWER TRANSFORMER								
A1.1	POWER TRANSFORMER								
	53.33MVA , 220/132/33 KV, 1-phase Autotransformer (Excluding insulating oil)	Nos.	3						
b)	Insulating oil for 53.33MVA , 220/132/33 KV, 1-phase Autotransformer (* 1Lot = Oil for 1Autotransformers)	Lot*	3						
c)	33kV Current transformer (NCT) for autotrasnformer	No	1						
(d)	Online insulating oil drying System	Nos.	3						
(e)	Online dissolved Gas (Multi-gas) and Moisture Analyser	Nos.	3						
A1.2	Testing & Maintenance Equipments		1						
a)	Transformer Oil Filtration plant (10KLPH)	No	1						
A2	LT TRANSFORMER								
1.0	630 kVA,33/0.400kV	Nos	1						
В	245 kV equipment								
	Testing & Maintenance Equipment for GIS								
i)	EOT crane for 245kV GIS Hall	Set	1						
	245KV Outdoor Equipment								
1.1	216 KV Surge Arrester (1-phase)	Nos.	31						

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		Unit	Quantity	Unit Rate	Amount	Unit Rate	Amount		
1	2	3	4	5	6 = (4) x (5)	7	8=(4)x(7)	9=6+8	10
1.2	245kV BPI	Nos.	14						
С	145 kV equipment								
	145 kV Circuit Breaker (3-Phase) with support structure								
а	1250A, 31.5 kA	Nos	1						
2.0	145kV Isolator (3-phase)-HDB								
а	1250A, 31.5 KA, Isolator with one E/S	Nos	2						
b	1250 A, 31.5KA, Isolator without E/S	Nos	3						
3.0	145 kV Current Transformer (1- Phase)								
	800A, 31.5 kA with 120% extended rating	Nos	3						
4.0	145 kV Surge Arrestors								
	120 kV Surge Arrestors (1- Phase)	Nos	7						
	145 kV Bus post insulators (Except for auxiliary buses of transformer)	Set	85						
6.0	72.5kV EQUIPMENT								
	72.5 kV BPI (1-phase)	Nos.	3						
	33kV Equipments	- 1001							
1.1	33 kV, 630A Isolators with out earth switch (3-phase, DBR type)	No.	1						
	30 kV Surge Arrestors (1-phase)	Nos.	3						
	36 kV BPI	Nos.	3						
	36 kV HG Fuse along with support insulator (1-phase)	Nos.	3						
E	RELAY PANELS (WITH AUTOMATION)								
	220 kV								
а	Circuit Breaker Relay Panel				1				
i	With Auto Reclose	Set	8						

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		Unit	Quantity	Unit Rate	Amount	Unit Rate	Amount		
1	2	3	4	5	6 = (4) x (5)	7	8=(4)x(7)	9=6+8	10
	With out Auto Reclose	Set	3						
b	Line Protection Panel	Set	6						
	Current Differential Relay for other end of line	Nos	4						
	Transformer Protection Panel (For both HV & MV side) including Remote Tap Changing Control Panel with AVR	Set	2						
е	Bus Bar Protection Panel	Set	1						
	132 kV								
	Circuit Breaker Relay Panel								
	With out Auto Reclose	Set	2						
b	Bus Bar Protection Panel (augmentation for 2 ICT bays)	Set	2						
F	COMMON EQUIPMENTS								
1.0	Relay Test tool kit(3 phase type)	Set	1						
2.0	Time synchronisation equipment	No.	1						
G	SUBSTATION AUTOMATION								
0.1	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								
а	Main bays to be automated								
i	220 kV system	Bay Nos	11						
ii	132 kV system (Transformer bay under present scope)	Bay Nos	2						
iii	Bays to be automated of existing 132 kV substation	Bay Nos	6						
	Bays to be automated of existing 33 kV substation	Bay Nos	3						
v)	BCU for controlling & monitoring of Auxilary System	Set	1						
Н	Teleprotection & communication Equipments				1				
	Digital Protection Coupler	Nos	6						
. ,	Digital Protection Coupler(for other end)	Nos	4						
. ,	PBAX with following configuration as per TS	Set	1						

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Item No.	Item description	Estima	ated		e (Excluding VAT)	Inland transport	ation to site in LC	Total Amount (Excluding Taxes)	Custom, VAT and other taxes
		Unit	Quantity	Unit Rate	Amount	Unit Rate	Amount		
1	2	3	4	5	$6 = (4) \times (5)$	7	8=(4)x(7)	9=6+8	10
ŕ	2 wire subscriber interface card with capacity 32 local subscribers (along with 32 nos. Instruments)								
	4 wire E & M interface card with capacity 8 nos. trunks (For PLCC)								
,	E-1 interface with 2 trunks G-703								
,	2 wire interface with 1 trunk (For PSTN)								
	Testing & Maintenance equipment (print test kit only)	Set	1						
С	4 wire telephone equipment	No	1						
	LT Switchgear (As per Technical specification)								
	415V Main switchboard	Set	1						
	415V ACDB	Set	1						
	415V MLDB	Set	1						
	415V Emergency LDB	Set	1						
е	220V DCDB	Sets	2						
J	Batteries								
а	220V								
i	600 AH	Nos	2						
К	Float Cum Boost Battery Charger								
	220V Float Cum Boost Battery Charger								
	80A/80A	Nos	2						
		1403							
L	Diesel Generator with control Panel								
а	100 kVA	Set	1						
М	Fire Protection System								
	Portable /Trolley/Wheel mounted extinguishers		 		+				
	9 litre water type	Nos	5						
	50 litre foam type	Nos	2		+				
	4.5 kg CO₂ type	Nos	13		+				
	4.5 kg CO ₂ type 4.5 kg Dry Chemical Power (DCP) type	Nos	5	1	+			+	

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	5 Total Train and Equipment morading mandatory opared Tarto								
Item No.	Item description	Estima	ited		e (Excluding VAT) a LC	Inland transporta	ation to site in LC	Total Amount (Excluding Taxes)	Custom, VAT and other taxes
		Unit	Quantity	Unit Rate	Amount	Unit Rate	Amount		
1	2	3	4	5	$6 = (4) \times (5)$	7	8=(4)x(7)	9=6+8	10
	Smoke detection system	Set	1						
С	Fire detection and Alarm System	Set	1						
N	Cables along with clamps, glands, lugs and straight joints etc.								
(a)	Power Cables - (1.1kV grade)								
	3.5Cx300 sqmm (XLPE) cable for filter Machine along with termination arrangement as per TS	KM	1						
	Air conditioning System for Control room cum administrative building								
а	High wall type/Ceiling type split AC unit of 2 TR capacity	Nos	25						
	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	163						
(b)	Pipe Structure including Foundation Bolts .	MT	45						
(c)	Fastners and step bolts.(Nuts,Bolts & Washers)	MT	8						
P2	PRE-ENGINEERED BUILDING								
	220kV GIS Hall & Control Room Building including all supply materials from abroad except civil works and for								
	civil works refer Schedule 4(a)								
	220kV GIS Hall	Sq.M	510						
b)	AHU/Panel Room	Sq.M	200						
	220kV two storeyed Control Room Building	Sq.M	775						
	Communication equipments for Marsyangdi Substation								
1	Transmission equipments								
(i)	SDH Equipment (STM-4 MADM, upto 3 MSP protected direct	ions)							

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	·	Unit	Quantity	Unit Rate	Amount	Unit Rate	Amount		
1	2	3	4	5	$6 = (4) \times (5)$	7	8=(4)x(7)	9=6+8	10
	Base Equipment (Common cards, Cross-connect/control cards, Optical base cards, Power supply cards, power cabling, other hardware & accessories including sub-racks, patch cords, DDF etc. fully equipped excluding (ii) and (iii) below)	No.	2						
(ii)	Optical Interface/SFP [#] for								
	L4.2	Nos.	6						
	L4.1	Nos.	6						
	Tributary Cards								
	E1 Interface card (Minimum 16 interfaces per card)	Nos.	2						
ii	Ethernet interfaces 10/100 Mbps with Layer-2 switching (Minimum 4 interfaces per card.)	No.	4						
3	Equipment Cabinets								
(a)	For SDH Equipment	No.	2						
4	Main Distribution Frame(100 pairs)	No.	1						
	BOQ for Auxiliary Power Supply Equipments								
	SMPS based 48V DC Power Supply (DCPS) system	Nos.	1						
(ii)	VRLA type Battery bank for above DCPS system	Nos.	1						
	At Kathmandu LDC								
	SDH Equipment (STM- 4 MADM, upto 3 MSP protected directions)								
	Base Equipment (Common cards, Cross-connect/control cards, Optical base cards, Power supply cards, power cabling, other hardware & accessories including sub-racks, patch cords, DDF etc. fully equipped excluding (ii) and (iii) below)	No.	1						
(i)	Optical Interface/SFP [#] for								
	L4.2	Nos.	2						
	L4.1	Nos.	2						
	S4.1	Nos.	2						
(ii)	Tributary Cards								

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		Unit	Quantity	Unit Rate	Amount	Unit Rate	Amount		
1	2	3	4	5	$6 = (4) \times (5)$	7	8=(4)x(7)	9=6+8	10
	E1 Interface card (Minimum 16 interfaces per card)	Nos.	1						
ii	Ethernet interfaces 10/100 Mbps with Layer-2 switching (Minimum 4 interfaces per card.)	No.	2						
2	Equipment Cabinets								
(a)	For SDH Equipment	No.	1						
3	Main Distribution Frame(100 pairs)	No.	1						
	Note# :Optical interface/SFP can be provided with Optical base card or Control card with the condition that control card shall not be equipped with more than one Optical interface/SFP and optical card with not more than two Optical interface/SFP. However main and protection channel shall be terminated on separate cards Note*: Set shall include all required hardware/software for complete TMN –Craft Terminal system as specified in technical specifications. Note**: Consider for existing equipment installed at Matatitha (Existing) and Optical Interface Card(s)/SFP shall be suitable to integrate with equipment installed Marsyangdi Substation (Existing). Sub-Total Part-A								
	Part-B: CONTRACTOR ASSESSED QUANTITIES								
	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:								
а	245kV GIS Termination Arrangement:								
i	Line Bay	Set	8						

SASEC Power System Expansion Project
Marsyangdi-Kathmandu 220 kV Transmission LineProject

ICB-PMD-MKTLP-076/77-02: Design, Supply, Installation and Commissioning of 220 kV AIS Substation at Matatirtha, Kathmandu & 220 kV GIS Substation at Markichowk, Marsyangdi

LC: Local Currency (ALL Price in Local Currency)

Item No.	Item description	Estim	ated		e (Excluding VAT)	Inland transporta	ation to site in LC	Total Amount (Excluding Taxes)	Custom, VAT and other taxes
	Ī	Unit	Quantity	Unit Rate	Amount	Unit Rate	Amount		
1	2	3	4	5	$6 = (4) \times (5)$	7	8=(4)x(7)	9=6+8	10
ii	Transformer Bay (including 220 kV AIS connection for spare unit with GIS auxiliary bus module)	Set	2						
b	For 132 kV (Double Main Layout)								
-	Transformer Bay	Set	2						
II	Bus work (For 3 bays and connection to existing 132kV switchyard, excluding bus post insulators)	Set	1						
С	For spare unit of 220/132/36 kV auto transformer connection through auxiliary buses (132 kV, tertiary & Neutral auxiliary buses only), Neutral formation and delta formation (for two banks): Required 132 kV BPI for 132 kV Auxilary bus, 72.5 kV BPI for tertiary auxilary 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						
	Erection Hardware etc for 72.5kV equipments & LT Transformer connection	Set	1						
	Earthing and lightning protection including necesaary connectors/connections, risers etc. complete in all respect(but excluding LM structures for Lightning protection)								
	Earth Conductor (copper)	LS	1						
	Earth Rod (copper clad steel)	LS	1						
iii	Equipment for lightning protection	LS	1						
В	Fire Protection System								
	Pumping arrangement for HVW system & hydrant system, complete with all piping, valves, fittings,etc. inside pump house								
	220/132kV (New) Substation	Set	1						
	Hydrant system, complete U/G piping and accessories etc. outside the Pump House.								
	220/132kV (New) Substation	Set	1						
	HVW spray system, Hydrant system and complete U/G & O/G piping and accessories etc. out side the pump house for Transformer:								
c.1	Transformer		+						

SASEC Power System Expansion Project
Marsyangdi-Kathmandu 220 kV Transmission LineProject

ICB-PMD-MKTLP-076/77-02: Design, Supply, Installation and Commissioning of 220 kV AIS Substation at Matatirtha, Kathmandu & 220 kV GIS Substation at Markichowk, Marsyangdi

LC: Local Currency (ALL Price in Local Currency)

Item No.	Item description	Estim	ated		e (Excluding VAT)	Inland transport	ation to site in LC	Total Amount (Excluding Taxes)	Custom, VAT and other taxes
		Unit	Quantity	Unit Rate	Amount	Unit Rate	Amount		
1	2	3	4	5	$6 = (4) \times (5)$	7	8=(4)x(7)	9=6+8	10
i	53.33MVA , 220/132/33 KV, 1-phase Autotransformer	Sets	7						
С	Illumination System								
	Control room cum administrative building illumination	T.C.	1						
b	Fire fighting building illumination	LS	-						
	Switchyard lighting	LS	1						
	Street lighting	LS	1						
	Transit Camp illumination	LS LS	1						
	245kV GIS Building including panel room		1 1						
	Township quarter (C-Type, 4 nos)	LS LS	1						
g h	Township quarter (C-Type, 4 hos) Township quarter (D-Type, 1 nos)		1 1						
	Car parkings	LS LS	1						
'	Cai paikings	LS	1						
D	Air conditioning & ventilation System								
D.1	Air conditioning system								
	Panel room in 245kV GIS Hall	LS	1						
	Ventilation system								
	245KV GIS hall	LS	1						
G	POWER & CONTROL CABLES								
а	Power Cables(PVC)- (1.1kV grade)	LS	1						
b	Control Cable (PVC)- (1.1kV grade)	LS	1						
с	Cable glands, lugs & straight through joints for Power & Control cables	LS	1						
Н	Integration of all 220/132/33kV Bays under present scope with the SCADA of SIEMENS (SINAUT Spectrum) at Load Dispatch Centre, Kathmandu including supply of Hardware, Software, accessories etc. as per TS Section Project.	LS	1						
	Sub-Total Part-B								

SASEC Power System Expansion Project
Marsyangdi-Kathmandu 220 kV Transmission LineProject

ICB-PMD-MKTLP-076/77-02: Design, Supply, Installation and Commissioning of 220 kV AIS Substation at Matatirtha, Kathmandu & 220 kV GIS Substation at Markichowk, Marsyangdi

LC: Local Currency (ALL Price in Local Currency)

	5 No.2. Frank and Equipment mordaling mandatory opares i arts			1	1				
Item No.	Item description	Estim	ated		e (Excluding VAT) a LC	Inland transport	tation to site in LC	Total Amount (Excluding Taxes)	Custom, VAT and other taxes
		Unit	Quantity	Unit Rate	Amount	Unit Rate	Amount		
1	2	3	4	5	$6 = (4) \times (5)$	7	8=(4)x(7)	9=6+8	10
	Part-C: Mandatory Spares								
(I)	SPARES FOR AIS EQUIPMENTS								
	145kV CB								
	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						
	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						
,	Relays, Power contactors, switch fuse units, limit switches, push buttons, timers & MCB etc. (1 no. of each type)	Set	1						
	Pressure switches / Density monitor (1 no. of each type)	Set	1						
ix)	Auxiliary switch assembly (for one pole of CB)	Set	1						
	145kV Isolator								
i)	One complete pole including support Insulator, motor operating mechanism (MOM) with box but excluding structure								
	1250A, 31.5 KA, 1 E/S (no. of pole)	No.	1						
ii)	Copper contact fingers for male & female contacts	Set	2						
,	Open/Close contactor assembly, timers, key interlock push button switch & auxilliary switches	Set	1						
,	Limit Switch	Set	2						
v)	Terminal Pads & Connectors	Nos.	3						
С	145kV CT			1					
	800A, 31.5 kA with 120% extended rating	No.	1						
	216 SA	INO.	1						
	Complete LA	No.	1					+	

SASEC Power System Expansion Project
Marsyangdi-Kathmandu 220 kV Transmission LineProject

ICB-PMD-MKTLP-076/77-02: Design, Supply, Installation and Commissioning of 220 kV AIS Substation at Matatirtha, Kathmandu & 220 kV GIS Substation at Markichowk, Marsyangdi

LC: Local Currency (ALL Price in Local Currency)

Item No.	Item description	Estim	ated		e (Excluding VAT)	Inland transport	ation to site in LC	Total Amount (Excluding Taxes)	Custom, VAT and other taxes
		Unit	Quantity	Unit Rate	Amount	Unit Rate	Amount		
1	2	3	4	5	$6 = (4) \times (5)$	7	8=(4)x(7)	9=6+8	10
ii)	Surge counter/monitor	Nos.	5						
1									
Е	120kV SA								
i)	Complete LA	No.	1						
ii)	Surge counter/monitor	Nos.	5						
F	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						
iii)	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						
G	Teleprotection Equipments								
i)	Set of prints for protection coupler(digital)	Set	1						
ĺ									
Н	SAS								
i)	Bay Control Unit (IED) of each type	Set	1						
ii)	Ethernet Switch of each type	Set	1						

SASEC Power System Expansion Project
Marsyangdi-Kathmandu 220 kV Transmission LineProject

ICB-PMD-MKTLP-076/77-02: Design, Supply, Installation and Commissioning of 220 kV AIS Substation at Matatirtha, Kathmandu & 220 kV GIS Substation at Markichowk, Marsyangdi

LC: Local Currency (ALL Price in Local Currency)

	Item No.	o. Item description		ated		e (Excluding VAT) LC	Inland transport	ation to site in LC	Total Amount (Excluding Taxes)	Custom, VAT and other taxes
			Unit	Quantity	Unit Rate	Amount	Unit Rate	Amount		
l			Oilit	Quantity						
1	1	2	3	4	5	$6 = (4) \times (5)$	7	8=(4)x(7)	9=6+8	10
	I	BATTERY CHARGER(220kV)								
	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						
	J	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						
		0.1 m (1p (0								

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

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

- 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 meet
- # Specify currency in accordance with BDS ITB Clause 32.1, Part-I

Total For Extension of 220/132kV Marsyangdi Substation (220 kV GIS & 132 kV AIS) [(I-B)-

Total for Schedule 1 (Total of column 9 to be carried forward

of the Bidding Documents.

(Printed Name)

* Strike-out whichever is not applicable.

(Part-A+ Part-B+ Part C)]

to Schdule 5: Grand Summary)

Name of Bidder:	Date
Signature of Bidder:	

SASEC Power System Expansion Project
Marsyangdi-Kathmandu 220 kV Transmission LineProject

ICB-PMD-MKTLP-076/77-02: Design, Supply, Installation and Commissioning of 220 kV AIS Substation at Matatirtha, Kathmandu & 220 kV GIS Substation at Markichowk, Marsyangdi

LC: Local Currency (ALL Price in Local Currency)

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

Unit Quantity Unit Rate Amount Unit Rate Amount	Item No.	Item description	Estima	ited		(Excluding VAT)	Inland transporta	ition to site in LC	Total Amount (Excluding Taxes)	Custom, VAT and other taxes
			I India	II:4 O		Amount	Unit Rate	Amount		
	1	2	3	4	5	$6 = (4) \times (5)$	7	8=(4)x(7)	9=6+8	10

(Designation) (Common Seal)

PROJECT MANAGEMENT DIRECTORATE SASEC Power System Expansion Project Marsyangdi-Kathmandu 220 kV Transmission LineProject

ICB-PMD-MKTLP-076/77-02: Design, Supply, Installation and Commissioning of 220 kV AIS Substation at Matatirtha, Kathmandu & 220 kV GIS Substation at Markichowk, Marsyangdi

Schedule A-3: Design Services

				Unit	Prices	Total Prices			
Item No.	Item Description	Estim	Estimated Local Currency Portion		Foreign Currency Portion	Local Currency Portion	Foreign Currency Portion		
		Quantity	Unit	NRs	Currency	LC	FC		
1	2	3	4	5	6	7=3x5	8=3x6		
	Design of the remaining scope of works for Matatirtha substation as per Technical specification Design of the remaining scope of works for Marsyangdi substation as per Technical		LOT						
	specification	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:

PROJECT MANAGEMENT DIRECTORATE

SASEC Power System Expansion Project

Marsyangdi-Kathmandu 220 kV Transmission LineProject

ICB-PMD-MKTLP-076/77-02: Design, Supply, Installation and Commissioning of 220 kV AIS Substation at Matatirtha, Kathmandu & 220 kV GIS Substation at Markichowk, Marsyangdi Schedule No. 4: Installation and Other Services

Sl. No.	ilation and construction charges	Installation Charges								
No.	Item Description	Country of Origin	Type & Designatio	Unit	Qty.	Portion i	n Foreign Curre	ency	Portion in Nepalese Currency (in N	
		or origin	n			Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
I-A	Extension of 220/132/33kV Matatirtha Substation									
	Part-A: EMPLOYER ASSESSED QUANTITIES									
A1	POWER TRANSFORMER									
A1.1	POWER TRANSFORMER									
	1-Ph Autotransformers (Owner Supplied)									
a)	53.33MVA, 220/132/33 KV, 1-phase Autotransformer (Excluding insulating oil)			Nos.	7					
b)	Insulating oil for 53.33MVA, 220/132/33 KV, 1-phase Autotransformer (* 1Lot = Oil			Lot*	7					
	for 1Autotransformers)			200						
c)	33kV Current transformer (NCT) for autotrasnformer			No	2					
A2	LT TRANSFORMER (Owner Supplied)									
1.0	630 kVA,33/0.400kV			Nos	2					
B-1	245 kV equipment (Owner Supplied)	-								
1.0	245 kV Circuit Breakers (3-Phase) with support structure									
а	1600A, 40KA			Nos	7					
b	2500A, 40KA			No	1					
2.0	245kV Isolator (3-phase)-Double Break									
а	1600A, 40 KA, Isolator with one E/S			Nos	7					
b	1600A, 40 KA, Isolator with two E/s			Nos	7					
С	1600 A, 40KA, Tandem Isolator without E/S			Nos	13					
d	2500A, 40 KA, Isolator with two E/s			Nos	2					
3.0	245 kV Current Transformer (1-Phase)	1								
a	1600A, 40KA with 120% extended current rating			Nos	21		+			+
b	1600 A, 40KA with 150% extended current	1		Nos	3					
	,	1		1103						
4.0	245 kV Capacitive Voltage Transformer (1- Phase)									
а	4400 pF			Nos.	18					
	OUT IN a suring sent /Te has a surgelied by the Contractor)	<u> </u>								
B-2	245 kV equipment (To be supplied by the Contractor)				1			1		

PROJECT MANAGEMENT DIRECTORATE

SASEC Power System Expansion Project

Marsyangdi-Kathmandu 220 kV Transmission LineProject

ICB-PMD-MKTLP-076/77-02: Design, Supply, Installation and Commissioning of 220 kV AIS Substation at Matatirtha, Kathmandu & 220 kV GIS Substation at Markichowk, Marsyangdi Schedule No. 4: Installation and Other Services

Sl. No.						Installa	tion Charges			
No.	Item Description	Country of Origin	Type & Designatio	Unit	Qty.	Portion	rtion in Foreign Currency		Portion in Nepalese Currency (in NPR	
		3.5.5.	n			Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
1.0	216 kV Surge Arrestors (1-phase)			Nos.	31					
2.0	245 kV Bust Post Insulator (Except auxiliary buses of transformer)			Nos	70					
С	145 kV equipment (To be supplied by the Contractor)									
1.0	145 kV Surge Arrestors									
а	120 kV Surge Arrestors (1- Phase)			Nos	7					
2.0	145kV Bus post insulators (Except auxiliary buses of transformer)			Set	15					
D1-1	72.5kV EQUIPMENT (Owner Supplied)									
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					
D1-2	72.5kV EQUIPMENT (To be supplied by the Contractor)									
1.5	72.5 kV BPI (1-phase)			Nos.	15					
D.2-1	33kV Equipments (Owner Supplied)									
1.1	33 kV, 630A Isolators with out earth switch (3-phase, DBR type)			No.	1					
D.2-2	33kV Equipments									
1.1	30 kV Surge Arrestors (1-phase)			Nos.	3					
1.2	36 kV HG Fuse along with support insulator (1-phase)			Nos.	3					
Е	RELAY PANELS (WITH AUTOMATION)									
1.0	220 kV									
а	Circuit Breaker Relay Panel									
	With Auto Reclose			Set	5					
i	With out Auto Reclose			Set	3					
b	Line Protection Panel (Matatirtha -Marsyangdi)			Set	2					
С	Line Protection Panel (Matatirtha –Trishuli)			Set	2					
d	Current Differential Relay for other end of line (Upper Trishuli 3A Line)			Nos	2					

PROJECT MANAGEMENT DIRECTORATE

SASEC Power System Expansion Project

Marsyangdi-Kathmandu 220 kV Transmission LineProject

ICB-PMD-MKTLP-076/77-02: Design, Supply, Installation and Commissioning of 220 kV AIS Substation at Matatirtha, Kathmandu & 220 kV GIS Substation at Markichowk, Marsyangdi Schedule No. 4: Installation and Other Services

	1	Installation Charges												
No.	Item Description	Country of Origin	Type & Designatio	Unit	Qty.	Portion in Foreign C		ency	Portion in Nepales	e Currency (in NPR)				
			n			Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges				
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6				
	Transformer Protection Panel (For both HV & MV side) including Remote Tap Changing Control Panel with AVR			Set	2									
	Bus Bar Protection Panel			Set	1									
	Disconnection of protection wiring from existing protection panels of Upper Trishuli 3A Line to the respective control panels. Electrical wiring and connection in the existing contol panels (including harware modifications and addition of auxiliary relays if required) from the new 220/132kV transformer protection panel for making complete operation for LV side of 220/132kV transformers (one line=1 Set)			Set	2									
F	COMMON EQUIPMENTS													
1.0	Special Relay Test Tool kit(3phase type)			No	1									
G	SUBSTATION AUTOMATION									+				
0.1	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													
а	Main bays to be automated													
i	220 kV system			Bay Nos	10									
ii	Bays to be automated of existing 132 kV substation			Bay Nos	10									
iii	Bays to be automated of existing 33 kV substation			Bay Nos	8									
iv)	Bays to be automated of existing 11 kV substation			Bay Nos	11									
v)	BCU for controlling & monitoring of Auxilary System			Set	1									
Н	Teleprotection & communication Equipments	+								+				
	Digital Protection Coupler			Nos	4					+				
a(ii)	Digital Protection Coupler(for other end)			Nos	2									
b	PABX with following configuration as per TS			Set	1									
i)	2 wire subscriber interface card with capacity 32 local subscribers (along with 32 nos. Instruments)													
	4 wire E & M interface card with capacity 8 nos. trunks (For PLCC)													
,	E-1 interface with 2 trunks G-703													
,	2 wire interface with 1 trunk (For PSTN)													
	Testing & Maintenance equipment (print test kit only)			Set	1									
d	4 wire telephone equipment			No	1									

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SASEC Power System Expansion Project

Marsyangdi-Kathmandu 220 kV Transmission LineProject

ICB-PMD-MKTLP-076/77-02: Design, Supply, Installation and Commissioning of 220 kV AIS Substation at Matatirtha, Kathmandu & 220 kV GIS Substation at Markichowk, Marsyangdi Schedule No. 4: Installation and Other Services

Sl.	liation and Construction Charges					Installat	ion Charges			
No.	Item Description	Country of Origin	Type & Designatio	Unit	Qty.	Portion	in Foreign Curre	ency	Portion in Nepalese	Currency (in NPR)
		or origin	n			Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
I	LT Switchgear (As per Technical specification)									
а	415V Main switchboard			Set	1					
b	415V ACDB			Set	1					
С	415V MLDB			Set	1					
d	415V Emergency LDB			Set	1					
е	220V DCDB			Sets	2					
J	Batteries									
а	220V									
i	600 AH			Nos	2					
K	Float Cum Boost Battery Charger									
а	220V Float Cum Boost Battery Charger									
i	80A/80A			Nos	2					
L	Diesel Generator with control Panel									
а	100 KVA			Set	1					
M	Fire Protection System									
	Portable /Trolley/Wheel mounted extinguishers									
	9 litre water type			Nos	5					
	50 litre foam type			Nos	2					
	4.5 kg CO ₂ type			Nos	13		1	1		<u> </u>
iv	4.5 kg Dry Chemical Power (DCP) type			Nos	5		1	1		<u> </u>
	Smoke detection system			Set	1		1	1		<u> </u>
	Fire detection and Alarm System			Set	1		1	1		<u> </u>
	, , , , , , , , , , , , , , , , , , ,			561			1			1
N	Cables along with clamps, glands, lugs and straight joints etc.						†			
b	Power Cables - (1.1kV grade)						1			<u> </u>
i	3.5Cx300 sqmm (XLPE) cable for filter Machine along with termination arrangement as per TS			KM	1		<u> </u>			†
 	, , , , , , , , , , , , , , , , , , , ,			IXIVI	1		1			
0	Air conditioning System for Control room cum administrative building				 		<u> </u>	+		+
a	High wall type/Ceiling type split AC unit of 2 TR capacity			Nos	20		<u> </u>	+		1
_ u	r ngri man gyorooning type spint no drint of 2 TTC capacity			INOS	20		1	+		+
					1					1

PROJECT MANAGEMENT DIRECTORATE

SASEC Power System Expansion Project

Marsyangdi-Kathmandu 220 kV Transmission LineProject

ICB-PMD-MKTLP-076/77-02: Design, Supply, Installation and Commissioning of 220 kV AIS Substation at Matatirtha, Kathmandu & 220 kV GIS Substation at Markichowk, Marsyangdi Schedule No. 4: Installation and Other Services

Sl. No.						Installa	tion Charges			
No.	Item Description	Country of Origin	Type & Designatio	Unit	Qty.	Portion in Foreign Currency		ency	Portion in Nepalese Currency (in NPR)	
			n			Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
	Erection 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	426					
(b)	Pipe Structure including Foundation Bolts .			MT	150					
(c)	Fastners and step bolts.(Nuts,Bolts & Washers)			MT	18					
Q	Communication equipments for Matatirha Substation									
1	Transmission Equipment									
(i)	SDH Equipment (STM- 4 MADM, upto 3 MSP protected directions)									
` '	Base Equipment (Common cards, Cross-connect/control cards, Optical base cards, Power supply cards, power cabling, other hardware & accessories including sub-racks, patch cords, DDF etc. fully equipped excluding (ii) and (iii) below)			No.	2					
(ii)	Optical Interface/SFP [#] for									
(a)	L4.2			Nos.	4					
(b)	L4.1			Nos.	6					
(c)	S4.1			Nos.	2					
	Tributary Cards									
i]	E1 Interface card (Minimum 16 interfaces per card)			Nos.	2					
ii]	Ethernet interfaces 10/100 Mbps with Layer-2 switching (Minimum 4 interfaces per card.)			No.	4					
2	Equipment Cabinets									
(a)	For SDH Equipment			No.	2					_
3	TMN – Craft Terminal for SDH & PDH Equipments						1			-
(a)	Hardware			Set*	1					
(b)	Software			Set*	1					
4	Main Distribution Frame(100 pairs)			No.	1					
	BOQ for Auxiliary Power Supply Equipments									
	SMPS based 48V DC Power Supply (DCPS) system			Nos.	1					
(ii)	VRLA type Battery bank for above DCPS system			Nos.	1					

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SASEC Power System Expansion Project

Marsyangdi-Kathmandu 220 kV Transmission LineProject

ICB-PMD-MKTLP-076/77-02: Design, Supply, Installation and Commissioning of 220 kV AIS Substation at Matatirtha, Kathmandu & 220 kV GIS Substation at Markichowk, Marsyangdi Schedule No. 4: Installation and Other Services

Sl. No.						Installat	ion Charges			
No.	Item Description	Country of Origin	Type & Designatio	Unit	Qty.	Portion i	in Foreign Curre	ency	Portion in Nepalese	Currency (in NPR)
			n			Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
	Note#:Optical interface/SFP can be provided with Optical base card or Control card with the condition that control card shall not be equipped with more than one Optical interface/SFP and optical card with not more than two Optical interface/SFP. However main and protection channel shall be terminated on separate cards Note*: Set shall include all required hardware/software for complete TMN —Craft Terminal									
	system as specified in technical specifications.									
	Note**: Consider for existing equipment installed at Matatitha (Existing) and Optical Interface Card(s)/SFP shall be suitable to integrate with equipment installed Matatirtha (Existing).									
	Sub-Total Part-A									
	Part-B: CONTRACTOR ASSESSED QUANTITIES									
Α	Erection Hardware									
	Insulator strings, Disc Insulators, Hardware, conductor, Al tube, bus-bar materials, cable trays, Bay MB, clamps, spacers, connectors including equipment connectors, Junction box, earthwire, buried cable trenches/pipe equipment & lighting, all accessories etc. for the following:									
а	220 kV Layout (DMT Layout)									
	Line Bay			Set	4					
	Transformer Bay			Set	2					
iii	TBC Bay			Set	1					
	BC bay			Set	1					
V	Bus work (Three Bays)			Set	3					
	For spare unit of 220/132/36 kV auto transformer connection through auxiliary buses, Neutral formation and delta formation (for two banks): Required 245 kV BPI for HV auxiliary bus, 132 kV BPI for 132 kV Auxilary bus, 72.5 kV BPI for tertiary auxilary 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					
	Erection Hardware etc for 72.5kV equipments & LT Transformer connection			Set	1	· · · · · · · · · · · · · · · · · · ·				
	Erection Hardware etc for 36 kV Transformer & LT Transformer connection			Set	1	·				
A1	Connection of 132 kV side of Transformer on exiting 132kV Bays					·				
i	132 kV cable (with Copper conductor) of suitable current rating along with cable termination kit (both end i.e.Transformer 132 kV end and 132 bay end) for 132 kV side of Transforme connection on exiting 132kV Bays connection as per specification including one spare cable connection arrangement			Set	2					

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Sl.		Installation Charges												
No.	Item Description	Country of Origin	Type & Designatio	Unit	Qty.	Portion in Foreign C		ency	Portion in Nepales	e Currency (in NPF				
			n			Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges				
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6				
A2	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									
i	ii Equipment for lightning protection			LS	1									
В	Fire Protection System													
а	Pumping arrangement for HVW system & 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									
С	HVW spray system, Hydrant system and complete U/G & O/G piping and accessories etc. out side the pump house for Transformer:													
c.1	Transformer													
	i 53.33MVA , 220/132/33 KV, 1-phase Autotransformer			Sets	7									
С	Illumination System													
а	Fire fighting building illumination			LS	1									
b	Illumination System for switchyard panel room													
	i 220KV			Sets	4									
С	Control room cum administrative building illumination			LS	1									
d	Switchyard lighting			LS	1									
е	Street lighting			LS	1									
f	Township quarter (B-Type, 4 nos) for 2 nos. of quarter buildings			LS	1									
g	Township quarter (C-Type, 4 nos) for 1 no. of quarter buildings			LS	1									
h	Security room			LS	1									
i	Car parkings			LS	1									
D	Air conditioning System													
a	Air conditioning for S/Y panel room													
	i 220KV			Sets	4									
Е	POWER & CONTROL CABLES													

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Sl.	lation and Construction Charges					Installat	ion Charges			
No.	Item Description	Country of Origin	Type & Designatio	Unit	Qty.	Portion	n Foreign Curre	ency	Portion in Nepalese	Currency (in NPR)
			n			Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
а	Power Cables(PVC)- (1.1kV grade)			LS	1					
b	Control Cable (PVC)- (1.1kV grade)			LS	1					
c	Cable glands, lugs & straight through joints for Power & Control cables			LS	1					
F	Integration with LDC and MCC									
F.1	Integration of all 220/132/33kV Bays under present scope with the SCADA of SIEMENS (SINAUT Spectrum) at Load Dispatch Centre, Kathmandu including supply of Hardware,			LS	1					
	Software, accessories etc. as per TS Section Project.									
F.2	Integration of all Bays with the MCC at Baneshwor Substation including supply of Hardware, Software, accessories etc. to complete scope of work.			LS	1					
	Contware, accessories etc. to complete scope of work.									
	Sub-Total Part-B									
	PART-C: Civil Works (As per technical specification)									
1.0	Excavation in all types of soil and rock including backfilling disposal etc. for all leads and lifts			Cu.Mtr.	7000					
2.0	Providing and laying of Plain Cement Concrete (PCC) (1:4:8)			Cu.Mtr.	820					
3.0	Providing and laying of Plain Cement Concrete (PCC) (1:2:4)			Cu.Mtr.	500					
4.0	Providing and laying of Reinforced Cement Concrete Design Mix (M25) including pre									
	cast, shuttering, Grouting of pockets & underpinning but excluding steel			Cu.Mtr.	3100					
	reinforcement.									
5.0	Providing and laying Plain Cement Concrete 1:5:10 (1 cement : 5 sand : 10 Stone			Cu.Mtr.	2250					
	aggregate)									
	Steel Reinforcement (Fe 500)			MT	230					
7.0	Miscellaneous Structural steel used for rails , plates for rail fixing, ,gratings, gratings									
	supports etc for transformer / reactor foundation, cable supportstand earthing cleats									
	,chequered plates, embedments, edge protection angles for cable trenches but			MT	45					
	excluding the reinforcement steel and steel for lattice and pipe structures which shall									
8.0	be paid seperately. Stone filling (40mm) over grating of Transformer / reactor Foundation	-		Cu.Mtr.	10		-	+		
		 					1			
9.0	Stone spreading including antiweed treatment in switchyard but excluding PCC.			Sq. Mtr.	30000					

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Sl. No.		Installation Charges												
140.	Item Description	Country of Origin	Type & Designatio	Unit	Qty.	Portion	in Foreign Curr	ency	Portion in Nepales	e Currency (in NPR)				
			n			Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges				
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6				
10.0	Supplying & laying hume pipe with collars of grade (NP-3) but excluding concrete of bed/support/encasing of hume pipes which shall be paid seperatelyunder respective items of BPS													
i)	250mm dia			RM	150									
ii)	300mm dia			RM	120									
iii)	450mm dia			RM	80									
iv)	600mm dia			RM	88									
v)	900 mm dia			RM	300									
11.0	Concrete road as per technical specification and approved drawing including all items such as excavation, compaction, rolling, watering, WBM, etc but excluding reinforcement & concrete which shall be paid seperately under respective items of BPS	,												
a.	Concrete Road			Sq. m.	3000									
11.1	Construction of BlackTop(Bituminous/asphaltic) road as per Specification and approved drawing, all Complete			-										
a.	Black top/bitumineous (asphaltic) Road			Sq.m.	2000									
12.0	Construction of rail-cum-raod as per technical specification and approved drawing including all items such as excavation, compaction, rolling, watering, WBM, etc but excluding concrete, reinforcement and structural steel which shall be paid seperately under respective items of BPS													
a.	Section having two rails			Sq. m.	350									
13.0	Chain link fencing as per technical specification and approved drawing but excluding concrete which shall be paid seperately under respective items of BPS			RM	300									
14.0	Switch yard Gate excluding concrete which shall be paid seperately under respective items of BPS			Nos.	2									
	Supplying and erecting dewatering pumps													
	5 HP			Nos.	2									
	0.5 HP			Nos.	2									
16.0	All civil works for construction of drains as per technical specification and approved drawing excluding concrete which shall be paid seperately under respective items of BPS													
	Type AA (300mm wide x Depth up to 600mm)			RM	1800									
b.	Type BB (450 wide x Depth From 600 to 900mm)			RM	1400									

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Sl. No.	iation and construction charges					Installat	ion Charges		_	
140.	Item Description	Country of Origin	Type & Designatio	Unit	Qty.	Portion	in Foreign Curre	ency	Portion in Nepalese Currency (in NPR)	
			n			Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
	Type CC (600 wide x Depth From 900 to 1200mm)			RM	1400					
	Type DD (750 wide x Depth From 1200 to 1500mm)			RM	1200					
17.0	External water supply as per technical specification from borewell/single point of									
	water supply within substation boundary to Fire water Tank, control room Building									
	and other buildings as applicable including all items like excavation, pipes, fittings,									
	jointings, valves, chambers/manholes etc									
	80mm Dia GI Pipe			RM	100					
	50mm dia GI pipe			RM	150					
	40mm dia GI pipe			RM	100					
d.	25mm Dia GI Pipe			RM	40					
18.0	External sewerage system including all item such as excavation, piping, pipe fittings,									
	manholes, gali trap, gali chamber etc.									
	(i) 250 mm Dia.			RM	150					
	(i) 150 mm Dia.			RM	250					
	Local Sand filling around and under DG Set Foundation and other foundations as applicable.			Cu.Mtr.	300					
	Stone soling below foundations wherever specified in approved drawings during									
	detailed engineering			Cu.Mtr.	500					
	Construcion of brick works after manual excavation with backfilling of soil between									
21	the foundation and plinth level without harm to the existing structural elements as									
	per technical specification and approved drawing.									
i	Control room cum administrative building (Double story) as per TS			Cu.m	33					
	Township (quarters)									
(a)	B type (2 nos)			Cu.m	139.000					
(b)	C type			Cu.m	56.000					
	All civil works as per technical specification and approved drawing including									
	internal finish and brick work but excluding excavation, PCC, RCC, reinforcement									
	steel and external finishing which shall be paid seperately under respective items of									
	BPS									
i	Control room cum administrative building (Double story) as per TS			Sq. m.	750					
ii	Fire fighting pump house buliding as per TS			Sq. m.	98					
iii	Fire fighting Water tank			LS	1					
	Switch yard Panel Room (6.0 M X 3.9 M).			Sq. m.	96					
v	Township (quarters)									

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Sl. No.			_			Installa	tion Charges			
No.	Item Description	Country of Origin	Type & Designatio	Unit	Qty.	Portion	in Foreign Curre	ency	Portion in Nepales	e Currency (in NPR)
		or origin	n			Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
(a)	B type			Sq. m.	1000					
(b)	C type			Sq. m.	600					
vi	Car Parking shed (for 10 cars)			LS	1					
23	External finish as per specification for following buildings (Plinth area based):									
i	Control room cum administrative building (Double story) as per TS (Dachi Appa/Traditional Nepali/Newari)			Sq. m.	750					
ii	Fire fighting pump house buliding as per TS (machin made brick)			Sq. m.	98					
iii	Fire fighting Water tank as per TS (machin made brick)			LS	1					
iv	Switchyard Panel Room (6.0 M X 3.9 M) as per TS (Dachi Appa/Traditional Nepali/Newari)			Sq. m.	96					
v	Township (quarters) as per TS (machin made brick)									
(a)	B type (machin made brick)			Sq. m.	1000					
(b)	C type (machin made brick)			Sq. m.	600					
vi	Car Parking shed (for 10 cars)			LS	1					
	Septic tank as per specification and approved design according to International/British									
24	standards and soak pit as per approved drawing excluding concrete & reinforcement (For 50			LS	3					
	users)									
25	Under ground water tank as per specification and approved design									
i	10000 ltr capaity			LS	1					
ii	20000 ltr capaity			LS	1					
26	Provisional works									
i	Providing sheet piling works with MS 100 mm dia @ 45cm c/c at vertical & MS 50mm dia @ 45 cm c/c horizontal, MS plate of required thickness not less than 4mm thick for safe retention of earth and other structures, side protection, including anchorage all complete or alternative as per the site requirement. The process and method must be approved.			Sq. m.	150					
27		1								
27 a)	Site levelling Earth work in cutting & Filling in all types of soils including soft/disintegrated rock			Cu.Mtr.	15000					
28	Boundary wall construction work	+								+
	New Construction							1		

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Sl. No.			•			Installat	ion Charges			
140.	Item Description	Country of Origin	Type & Designatio	Unit	Qty.	Portion	in Foreign Curre	ency	Portion in Nepalese	Currency (in NPR)
		or Origin	n			Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
i	All civil works for Boundary wall including excavation, brick work with CD75 bricks in CM 1:6, concrete, reinforcement steel ,structural steel, plaster, painting, barbed wire and concertina coil etc all complete as per technical specification (2.5 m high brick masonary wall and 0.5 m high angle support on top).			RM	500					
b)	Supplementary work to the existing boundary wall									
i	15 mm cement plaster on the BOTH side of single or half brick wall WITH CEMENT PLASTER 1:6 (1 cement : 6 fine sand)			sqm	625					
ii	Finishing walls with weather coat of required shade, two over one coat of primer			sqm	3555					
iii	Fencing over Y M.S. Angle post Placed over boundary wall through galvanised barbed wire (4x2 lines) weighing 9.38 kg per 100 meter, fixing and tighting complete			RM	711					
iv	Fencing with Punched tape concertina coil 600 mm dia over Y M.S. Angle post Placed over boundary wall weighing 9.38 kg per 100 meter, fixing and tighting complete			RM	711					
V	Painting Steel work with approved Quality synthetic enemal paint two or more coat over two coats of Steel Primer	t		sqm	100					
29	Main boundary wall Gate (Steel) including all works complete as per technical specification			LS	2					
30	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					
31	Construction of retaining wall with random Rubble masonary in cement sand mortar (1:6) including levelling up with cement concrete (1:6:12),providing weep holes of PVC pipes (150 mm dia) with necessary filter material at the mouth of weep holes, 50 mm thick cement concrete (1:2:4) copping on the top of wall, 100 mm thick PCC (1:4:8) below RR masonary work,excavation of foundation for all lifts up to 3m above lower level . Item of excavation, PCC (1:2:4 & 1:4:8) shall be measured and paid seperately under respective items of BPS	f))		Cu. M	2000					

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S1.						Installat	ion Charges			
No.	Item Description	Country of Origin	Type & Designatio	Unit	Qty.	Portion	in Foreign Curre	ency	Portion in Nepalese	Currency (in NPR)
		or Origin	n			Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
32.0	Supplying, providing stone work packed in steel wire crats as per design & drawing to be developed by the contractor for all leads & lifts along the boundary wall & other places as required.			Cu. M	2500					
33.0	Dismantling of existing boundary wall (about 2.5 m high) of stone masonary wall with about 1.0 m high steel grill above top of masonary wall including disposal of debris, stacking of sevicable material etc. at the place within the the boundary wall of substaion as per direction of engineer incharge. Bidder is advised to visit site to acquaint themselves with the detail of existing boundary wall			RM	300					
34.0	Dismantling of existing RR masonary retaining wall including stacking of serviceable material like stones/boulders etc at suitable place within sub station boundary wall at a place to be decided by Engineer-In - Charge and disposal of unserviceable material/debris within 2 Km at a place to be finalised with Engineer In Charge	:		Cu. M	300					
35.0	All civil works for store building complete in all respect as per technical specification and approved drawing including finishing, steel truss CGI sheet, doors windoows, shutters, brick works etc but excluding excavation, PCC, RCC, reinforcement steel which shall be paid seperately under respective items of BPS									
i	Closed type store			Sq. m.	150					
ii	Semi closed type store			Sq. m.	150					
36.0	Back filling work(In 200 mm layers) for excavated pits with the help of available earth lying within S/s & township area, for tower/transfomrer foundation and providing 95% compaction. Work incldes two numbers compaction test for each tower foundation pit as per direction of Engineer Incharge.	;		cum	4300					
	Sub-Total Part-C									
	Out-10tailair-C									
	Total for Extension of 220/132/33kV Matatirha Substation (I-A) (Part-A+ Part-B+ Part C)									

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						Installa	tion Charges			
No.	Item Description	Country of Origin	Type & Designatio	Unit	Qty.	Portion	in Foreign Curre	ency	Portion in Nepales	e Currency (in NPR
		or origin	n			Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
I-B	Extension of 220/132/33kV Marsyangdi Substation (220 kV GIS & 132									
	kV AIS)									
	Part-A: EMPLOYER ASSESSED QUANTITIES									
A1	POWER TRANSFORMER									
A1.1	POWER TRANSFORMER (Owner Supplied)									
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 autotrasnformer			No	1					
A1.2	POWER TRANSFORMER(To be supplied by the Contractor)									
a)	53.33MVA , 220/132/33 KV, 1-phase Autotransformer (Excluding insulating oil)			Nos.	3					
b)	Insulating oil for 53.33MVA , 220/132/33 KV, 1-phase Autotransformer (* 1Lot = Oil for 1Autotransformers)			Lot*	3					
c)	33kV Current transformer (NCT) for autotrasnformer			No	1					
(d)	Online insulating oil drying System			Nos.	3					
(e)	Online dissolved Gas (Multi-gas) and Moisture Analyser			Nos.	3					
A2-1	LT TRANSFORMER (Owner Supplied)									
1.0	630 kVA,33/0.400kV			Nos	1					
A2-2	LT TRANSFORMER(To be supplied by the Contractor) 630 kVA,33/0.400kV									
1.0	630 KV A,33/0.400KV			Nos	1					
В	245 kV equipment									
B1	420KV GIS Equipment (Owner Supplied)									
1.01	245kV, SF6 GIS Bus Bars Module [Module description as per Technical specification, Cl. No. 2.2.2.1.1, (a) of Section Project]			Set	2					
1.02	245kV, SF6 GIS ICT bay Module [Module description as per Technical specification, Cl. No. 2.2.2.1.1, (b) of Section Project]			Set	2					

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Sl.						Installa	tion Charges			
No.	Item Description	Country of Origin	Type & Designatio	Unit	Qty.	Portion	in Foreign Curr	ency	Portion in Nepales	e Currency (in NPR)
		or Origin	n			Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
1.03	245kV, SF6 GIS Line bay Module [Module description as per Technical specification, Cl. No.2.2.2.1.1, (d) of Section Project]			Set	8					
1.04	245kV, SF6 GIS Bus Coupler bay Module [Module description as per Technical specification, Cl. No. 2.2.2.1.1, (e) of Section Project]			Set	1					
1.05	245 kV Auxiliary Bus to connect spare unit of Transformer [Module description as per Technical specification, Cl. No. 2.2.2.1.1, (c) of Section Project]			Set	1					
1.06	245kV, 1600A,40kA SF6/ Air Bushing for Connecting GIS to AIS alongwith support structure (Single Phase)			Nos	7					
1.07	245kV, 2400A,40kA SF6/ Air Bushing for Connecting GIS to AIS alongwith support structure (Single Phase)			Nos	24					
1.08	245kV, 1600A, 1phase SF6 GIS Bus duct alongwith support structure			Mtr	250					
1.09	245kV, 2400A, 1phase SF6 GIS Bus duct alongwith support structure			Mtr	950					
1.10-1	Testing & Maintenance Equipment for GIS (Owner Supplied)						+	+		+
(i)	Partial Discharge Monitoring System for 245kV GIS System as per Technical Specification, GIS			Set	1					
1.10-2	Testing & Maintenance Equipment for GIS									
(i)	EOT crane for 245kV GIS Hall			Set	1					
B2	245KV Outdoor Equipment									
1.1	216 KV Surge Arrester (1-phase)			Nos.	31					+
1.2	245kV BPI			Nos.	14					
C-1	145 kV equipment (Owner Supplied)									
1.0	145 kV Circuit Breaker (3-Phase) with support structure					·				
а	1250A, 31.5 kA			Nos	1					
2.0	145 kV Circuit Breaker (3-Phase) with support structure (To be supplied by the Contractor)									+

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Sl.						Installa	tion Charges			
No.	Item Description	Country of Origin	Type & Designatio	Unit	Qty.	Portion	in Foreign Curre	ency	Portion in Nepales	e Currency (in NPR)
			n			Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
а	1250A, 31.5 kA			Nos	1					
3.0	145kV Isolator (3-phase)-HDB (Owner Supplied)									
а	1250A, 31.5 KA, Isolator with one E/S			Nos	2					
b	1250 A, 31.5KA, Isolator without E/S			Nos	3					
4.0	145kV Isolator (3-phase)-HDB(To be supplied by the Contractor)									+
а	1250A, 31.5 KA, Isolator with one E/S			Nos	2			1		
b	1250 A, 31.5KA, Isolator without E/S			Nos	3					
5.0	145 kV Current Transformer (1- Phase)(Owner Supplied)									
а	800A, 31.5 kA with 120% extended rating			Nos	3					1
	ASS IN Company Transfer was (4. Phospilita by a complied by the Contractor)									
6.0	145 kV Current Transformer (1- Phase)(To be supplied by the Contractor) 800A, 31.5 kA with 120% extended rating			N.T.	_					
a	600A, S1.5 KA WIIT 120% extended failing			Nos	3					+
C-2	145 kV equipment (To be supplied by the Contractor)									
1.0	145 kV Surge Arrestors									
а	120 kV Surge Arrestors (1- Phase)			Nos	7					
2.0	145 kV Bus post insulators (Except for auxiliary buses of transformer)			Set	85					
D-1	72.5kV EQUIPMENT (Owner Supplied)									
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			ļ		
1.3	72.5kV, 1250A, 31.5 kA with 120% extended rating CT.			Nos.	3			ļ		
1.4	72.5kV PT.(1-phase)			Nos.	3			1		
D-2	72.5kV EQUIPMENT							ļ		
1.5	72.5 kV BPI (1-phase)			Nos.	3					
E	33kV Equipments(To be supplied by the Contractor)							1		
1.1	33 kV, 630A Isolators with out earth switch (3-phase, DBR type)			No.	1					
1.2	30 kV Surge Arrestors (1-phase)			Nos.	3					
1.3	36 kV BPI			Nos.	3			1		
1.4	36 kV HG Fuse along with support insulator (1-phase)			Nos.	3			1		

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Sl.						Installa	ion Charges			
No.	Item Description	Country of Origin	Type & Designatio	Unit	Qty.	Portion	in Foreign Curre	ency	Portion in Nepales	e Currency (in NPR
			n			Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
	RELAY PANELS (WITH AUTOMATION)									
1.0	220 kV									
	Circuit Breaker Relay Panel									
	With Auto Reclose			Set	8					
	With out Auto Reclose			Set	3					
	Line Protection Panel			Set	6					
С	Current Differential Relay for other end of line			Nos	4					
d	Transformer Protection Panel (For both HV & MV side) including Remote Tap Changing Control Panel with AVR			Set	2					
е	Bus Bar Protection Panel			Set	1					
2.0	132 kV									-
а	Circuit Breaker Relay Panel									
ii	Without Auto Reclose			Set	2					+
b	Bus Bar Protection Panel (augmentation for 2 ICT bays)			Set	2					
F	COMMON EQUIPMENTS									
	Special Relay Test Tool kit(3 phase type)			No	1					
G	SUBSTATION AUTOMATION									
	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									
а	Main bays to be automated									
i	220 kV system			Bay Nos	11					
ii	132 kV system (Transformer bays under present scope)			Bay Nos	2					
iii	Bays to be automated of existing 132 kV substation			Bay Nos	6					1
iv)	Bays to be automated of existing 33 kV substation			Bay Nos	3					
	BCU for controlling & monitoring of Auxiliary System			Set	1					
Н	Teleprotection & communication Equipments									
h(i)	Digital Protection Coupler			Nos	6			1		
h(ii)	Digital Protection Coupler(for other end)			Nos	4			1		
а	PBAX with following configuration as per TS			Set	1					1

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Sl.						Installa	tion Charges			
No.	Item Description	Country of Origin	Type & Designatio	Unit	Qty.	Portion	in Foreign Curr	ency	Portion in Nepales	e Currency (in NPR
		or Origin	n			Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
i)	2 wire subscriber interface card with capacity 32 local subscribers (along with 32 nos. Instruments)									
ii)	4 wire E & M interface card with capacity 8 nos. trunks (For PLCC)									
iii)	E-1 interface with 2 trunks G-703									
iv)	2 wire interface with 1 trunk (For PSTN)									
b	Testing & Maintenance equipment (print test kit only)			Set	1					
С	4 wire telephone equipment			No	1					
1	LT Switchgear (As per Technical specification)									
a	415V Main switchboard			Set	1		+			
b	415V ACDB			Set	1					
С	415V MLDB			Set	1					
d	415V Emergency LDB			Set	1		+			
e	220V DCDB			Sets	2					
J	Batteries									
а	220V									
	i 600 AH			Nos	2			1		
K	Float Cum Boost Battery Charger									
а	220V Float Cum Boost Battery Charger									
	i 80A/80A			Nos	2					
L	Diesel Generator with control Panel									
<u>-</u> а	100 kVA			Set	1					
M	Fire Protection System									
а	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	13					
i	v 4.5 kg Dry Chemical Power (DCP) type			Nos	5					
b	Smoke detection system			Set	1					
С	Fire detection and Alarm System			Set	1					

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Sl.	liation and Construction Charges					Installat	ion Charges			
No.	Item Description	Country of Origin	Type & Designatio	Unit	Qty.	Portion i	n Foreign Curre	ency	Portion in Nepalese	Currency (in NPR)
		or origin	n			Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
	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					
0	Air conditioning System for Control room cum administrative building									
	High wall type/Ceiling type split AC unit of 2 TR capacity			Nos	25					
				1100						
	Erection of following Steel Structures including nuts, bolts, all types of washers, packplates, step bolts and gusset plates including foundation bolts									
	Lattice Structure including Foundation Bolts			MT	163					
(b)	Pipe Structure including Foundation Bolts .			MT	45					
(c)	Fastners and step bolts.(Nuts,Bolts & Washers)			MT	8					
	Communication equipments for Marsyangdi Substation									
	Transmission equipments									
	SDH Equipment (STM- 4 MADM, upto 3 MSP protected directions)									
	Base Equipment (Common cards, Cross-connect/control cards, Optical base cards, Power supply cards, power cabling, other hardware & accessories including sub-racks, patch cords, DDF etc. fully equipped excluding (ii) and (iii) below)			No.	2					
(ii)	Optical Interface/SFP [#] for									
(a)	L4.2			Nos.	6					
(b)	L4.1			Nos.	6					
(iii)	Tributary Cards									
i	E1 Interface card (Minimum 16 interfaces per card)			Nos.	2					
ii				No.	4					
	Ethernet interfaces 10/100 Mbps with Layer-2 switching (Minimum 4 interfaces per card.)									
	Equipment Cabinets			NT-	2					
	For SDH Equipment			No.	2					
	Main Distribution Frame(100 pairs)			No.	1					
	BOQ for Auxiliary Power Supply Equipments SMPS based 48V DC Power Supply (DCPS) system			Mag	1			-		
	VRLA type Battery bank for above DCPS system			Nos. Nos.	1					
(")	VICA type battery balls for above DCF3 system	1		INOS.	1					
	At Kathmandu LDC									
	1 1 1 1 2 2	L			ļ		ļ	1	<u> </u>	

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Sl. No.			_			Installat	ion Charges			
NO.	Item Description	Country of Origin	Type & Designatio	Unit	Qty.	Portion	in Foreign Curre	ency	Portion in Nepalese	: Currency (in NPR)
		or origin	n			Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
1	Termination Equipment									
A1	SDH Equipment (STM-4MADM, upto 3MSP protected directions)									
(a)	Base Equipment (Common cards, Cross-connect/control cards, Optical base cards, Power supply cards, power cabling, other hardware & accessories including sub-racks, patch cords, DDF etc. fully equipped excluding (ii) and (iii) below)			No.	1					
(ii)	Optical Interface/SFP [#] for									
(a)	L4.2			Nos.	2					
	L4.1			Nos.	2					
('c)	S4.1			Nos.	2					
(iii)	Tributary Cards									
	E1 Interface card (Minimum 16 interfaces per card)			Nos.	1					
i	Ethernet interfaces 10/100 Mbps with Layer-2 switching (Minimum 4 interfaces per card.)			No.	2					
2	Equipment Cabinets									
(a)	For SDH Equipment			No.	1					
3	Main Distribution Frame(100 pairs)			No.	1					
	Note#:Optical interface/SFP can be provided with Optical base card or Control card with the condition that control card shall not be equipped with more than one Optical interface/SFP and optical card with not more than two Optical interface/SFP. However main and protection channel shall be terminated on separate cards	ı.								
	Note*: Set shall include all required hardware/software for complete TMN -Craft Terminal system as specified in technical specifications.									
	Note**: Consider for existing equipment installed at Matatitha (Existing) and Optical Interface Card(s)/SFP shall be suitable to integrate with equipment installed Marsyangdi Substation (Existing).									
	Sub-Total Part-A									
	Part-B: CONTRACTOR ASSESSED QUANTITIES									
								ļ		
Α	Erection Hardware							1		
	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:									

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Sl.				_	· <u> </u>	Installa	tion Charges			
No.	Item Description	Country of Origin	Type & Designatio	Unit	Qty.	Portion	in Foreign Curre	ency	Portion in Nepales	e Currency (in NPF
		or Origin	n			Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
а	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	2					
b	For 132 kV (Double Main Layout)									
i	Transformer Bay			Set	1					
ii	Bus work (For four bays, excluding bus post insulators)			Set	1					
С	For spare unit of 220/132/36 kV auto transformer connection through auxiliary buses (132 kV, tertiary & Neutral auxiliary buses only), Neutral formation and delta formation (for one bank): Required 132 kV BPI for 132 kV Auxilary bus, 72.5 kV BPI for tertiary auxiliary bus & delta formation, 36 kV BPI for Neutral formation & Neutral auxiliary bus including AI tube, bus-bar materials, clamps, spacers, connectors, including equipment connectors, support structures, Earthing of spare unit as per technical			Set	1					
d	Erection Hardware etc for 72.5kV equipments & LT Transformer connection			Set	1					
е	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					
В	Fire Protection System									
а	Pumping arrangement for HVW system & 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.									
į	220/132kV (New) Substation			Set	1					
	HVW spray system, Hydrant system and complete U/G & O/G piping and accessories etc. out side the pump house for Transformer:									
c.1	Transformer									
i	53.33MVA , 220/132/33 KV, 1-phase Autotransformer			Sets	4					
С	Illumination System									
а	Control room cum administrative building illumination			LS	1					
b	Fire fighting building illumination			LS	1					
С	Switchyard lighting			LS	1					
d	Street lighting			LS	1					

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S1.						Installat	ion Charges			
No.	Item Description	Country of Origin	Type & Designatio	Unit	Qty.	Portion i	n Foreign Curre	ency	Portion in Nepales	e Currency (in NPR)
		or Origin	n			Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
е	Transit Camp illumination			LS	1					
f	245kV GIS Building including panel room			LS	1					
g	Township quarter (C-Type, 4 nos)			LS	1					
h	Township quarter (D-Type, 1 nos)			LS	1					
i	Car parkings			LS	1					
D	Air conditioning & ventilation System									
D.1	Air conditioning system									
(i)	Panel room in 245kV GIS Hall			LS	1					
D.2	Ventilation system			LO	-					
(i)	245KV GIS hall			LS	1					
G	POWER & CONTROL CABLES									
a	Power Cables(PVC)- (1.1kV grade)			LS	1					
b b	Control Cable (PVC)- (1.1kV grade)			LS	1					
С	Cable glands, lugs & straight through joints for Power & Control cables			LS	1					
н	Integration of all 220/132/33kV Bays under present scope with the SCADA of SIEMENS (SINAUT Spectrum) at Load Dispatch Centre, Kathmandu including supply of Hardware, Software, accessories etc. as per TS Section Project.			LS	1					
	,									
	Sub-Total Part-B									
	PART-C: Civil Works (As per technical specification)									
1.0	Excavation in all types of soil and rock including backfilling disposal etc. for all leads and lifts			Cu.Mtr.	12700					
2.0	Providing and laying of Plain Cement Concrete (PCC) (1:4:8)			Cu.Mtr.	1650					
3.0	Providing and laying of Plain Cement Concrete (PCC) (1:2:4)			Cu.Mtr.	650					
4.0	Providing and laying of Reinforced Cement Concrete Design Mix (M25) including pre cast, shuttering, Grouting of pockets & underpinning but excluding steel reinforcement.			Cu.Mtr.	4600					
5.0	Providing and laying Plain Cement Concrete 1:5:10 (1 cement : 5 sand : 10 Stone aggregate)			Cu.Mtr.	2250					

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No.	Item Description	Country of Origin		Unit	Qty.	Portion	in Foreign Curre	ency	Portion in Nepales	e Currency (in NPR)
		or origin	n			Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
6.0	Steel Reinforcement (Fe 500)			MT	340					
7.0	Miscellaneous Structural steel used for rails , plates for rail fixing, ,gratings, gratings supports etc for transformer / reactor foundation,cable supportstand earthing cleats ,chequered plates, embedments, edge protection angles for cable trenches but excluding the reinforcement steel and steel for lattice and pipe structures which shall be paid seperately.			МТ	21					
8.0	Stone filling (40mm) over grating of Transformer / reactor Foundation			Cu.Mtr.	10					
9.0	Stone spreading including antiweed treatment in switchyard but excluding PCC.			Sq. Mtr.	15000					
10.0	Supplying & laying hume pipe with collars of grade (NP-3) but excluding concrete of bed/support/encasing of hume pipes which shall be paid seperately under respective items of BPS									
i)	250mm dia			RM	150					
ii)	300mm dia			RM	120					
iii)	450mm dia			RM	80					
iv)	600mm dia			RM	40					
11.0	Concrete road as per technical specification and approved drawing including all items such as excavation, compaction, rolling, watering, WBM, etc but excluding reinforcement & concrete which shall be paid seperately under respective items of BPS									
a	Concrete Road			Sq. m.	2400					
12.0	Construction of rail-cum-raod as per technical specification and approved drawing including all items such as excavation, compaction, rolling, watering, WBM, etc but excluding concrete, reinforcement and structural steel which shall be paid seperately under respective items of BPS			•						
a.	Section having two rails			Sq. m.	100					
13.0	Chain link fencing as per technical specification and approved drawing but excluding concrete which shall be paid seperately under respective items of BPS			RM	300					
14.0	Switch yard Gate excluding concrete which shall be paid seperately under respective items of BPS			Nos.	1					
15.0	Supplying and erecting dewatering pumps									
a	0.5 HP			Nos.	2					

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Sl. No.	nation and Construction Charges					Installat	ion Charges			
No.	Item Description	Country of Origin	Type & Designatio	Unit	Qty.	Portion	in Foreign Curre	ency	Portion in Nepalese Currency (in NPR)	
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(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
16.0	All civil works for construction of drains as per technical specification and approved									
	drawing excluding concrete which shall be paid seperately under respective items of BPS									
a.	Type AA (300mm wide x Depth up to 600mm)			RM	1500					
	Type BB (450 wide x Depth From 600 to 900mm)			RM	300					
	Type CC (600 wide x Depth From 900 to 1200mm)			RM	300					
	Type DD (750 wide x Depth From 1200 to 1500mm)			RM	300					
17.0	External water supply as per technical specification from borewell/single point of									
	water supply within substation boundary to Fire water Tank, control room Building									
	and other buildings as applicable including all items like excavation, pipes, fittings,									
	iointings, valves, chambers/manholes etc									
	· · · · · · · · · · · · · · · · · · ·			RM	100					
b.	comme una est pape			RM	80					
c.	40mm dia GI pipe			RM	60					
d.	25mm Dia GI Pipe			RM	40					
18.0	External sewerage system including all item such as excavation, piping, pipe fittings, manholes, gali trap, gali chamber etc.									
a.	(i) 250 mm Dia.			RM	100					
b.	(i) 150 mm Dia.			RM	100					
19.0	Local Sand filling around and under DG Set Foundation and other foundations as applicable.			Cu.Mtr.	300					
20.0	Stone soling below foundations wherever specified in approved drawings during detailed engineering			Cu.Mtr.	156					
	Construcion of brick works after manual excavation with backfilling of soil between									
21	the foundation and plinth level without harm to the existing structural elements as									
	per technical specification and approved drawing.									
i	Transit Camp			Cu.m	28					
ii	Township (quarters)									
(a)	C type			Cu.m	56.000					
(b)	D type			Cu.m	26.000					

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		or Origin	n			Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
22.0	All civil works as per technical specification and approved drawing including internal finish and brick work but excluding excavation, PCC, RCC, reinforcement steel and external finishing which shall be paid seperately under respective items of BPS									
i	Transit Camp			Sq. m.	420					
ii	Fire fighting pump house buliding as per TS			Sq. m.	98					
	Fire fighting Water tank			LS	1					
iv	Township (quarters)									
a)	C type			Sq. m.	600					
b)	D type			Sq. m.	210					
v	Car Parking shed (for 10 cars)			LS	1					
23	External finish as per specification for following buildings:									
i	Transit Camp			Sq. m.	420					
ii	Fire fighting pump house buliding as per TS			Sq. m.	98					
iii	Fire fighting Water tank			ĹS	1					
iv	Township (quarters)									
a)	C type			Sq. m.	600					
b)	D type			Sq. m.	210					
v	Car Parking shed (for 10 cars)			LS	1					
24	Septic tank as per specification and approved design according to International/British standards and soak pit as per approved drawing excluding concrete & reinforcement (For 50 users)			LS	3					
25	Under ground water tank as per specification and approved design									
i	10000 ltr capaity			LS	1					
ii	20000 ltr capaity			LS	1					
	Site levelling									
a)	Earth work in cutting & Filling in all types of soils including soft/disintegrated rock			Cu.Mtr.	25000					

PROJECT MANAGEMENT DIRECTORATE

SASEC Power System Expansion Project

Marsyangdi-Kathmandu 220 kV Transmission LineProject

ICB-PMD-MKTLP-076/77-02: Design, Supply, Installation and Commissioning of 220 kV AIS Substation at Matatirtha, Kathmandu & 220 kV GIS Substation at Markichowk, Marsyangdi Schedule No. 4: Installation and Other Services

Sl. No.						Installat	ion Charges				
140.	Item Description	Country of Origin		Unit	Qty.	Portion	in Foreign Curre	ency	Portion in Nepalese Currency (in NPR)		
		or origin	n			Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges	
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6	
	Construction of retaining wall with random Rubble masonary in cement sand mortar (1:6) including levelling up with cement concrete (1:6:12),providing weep holes of PVC pipes (150 mm dia) with necessary filter material at the mouth of weep holes,50 mm thick cement concrete (1:2:4) copping on the top of wall, 100 mm thick PCC (1:4:8) below RR masonary work,excavation of foundation for all lifts up to 3m above lower level . Item of excavation, PCC (1:2:4 & 1:4:8) shall be measured and paid seperately under respective items of BPS			Cu. M	3000						
	Supplying, providing stone work packed in steel wire crats as per design & drawing to be developed by the contractor for all leads & lifts along the boundary wall & other places as required.			Cu. M	1000						
	All Civil works for two storeyed Control Room Building (PEB) including finishing, internal cable trench, etc. complete as per technical specification and approved drawings, excluding excavation, PCC, RCC and reinforcement steel which shall be measured and paid seperately under respective items of BPS.			Sq. m.	775						
	All Civil works for 245 kV GIS Hall Building (PEB) including finishing, internal cable trench, etc. complete as per technical specification and approved drawings, excluding excavation, PCC, RCC and reinforcement steel which shall be measured and paid seperately under respective items of BPS.			Sq. m.	510						
	All Civil works for AHU Room/Panel Room (PEB) including finishing, internal cable trench, etc. complete as per technical specification and approved drawings, excluding excavation, PCC, RCC and reinforcement steel which shall be measured and paid seperately under respective items of BPS.			Sq. m.	200						
	All civil works for store building complete in all respect as per technical specification and approved drawing including finishing, steel truss CGI sheet, doors windoows, shutters, brick works etc but excluding excavation, PCC, RCC, reinforcement steel which shall be paid seperately under respective items of BPS										
	Closed type store			Sq. m.	150						
ii	Semi closed type store			Sq. m.	150						
	Sub-Total Part-C										

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Marsyangdi-Kathmandu 220 kV Transmission LineProject

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(a): Installation and Construction Charges

Sl. No.						Installati	on Charges			
No.	Item Description	Country	Type & Designatio	Unit	Qty.	Portion i	n in Foreign Currency		Portion in Nepalese Currency (in NI	
		of Origin	Origin Designation			Currency#	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
	Total For Extension of 220/132kV Marsyangdi Substation (220 kV GIS & 132 kV AIS) (Part-A+ Part-B+ Part C)									
	Total for Schedule 4(Total of column 9 and 11 to be carried forward to Schedule 5: Grand Summary)									

#	Specify currency in accord	ance with ITB	Clause 12.1 a	nd corresponding	BDS clauses,	Vol.I of
	the Bidding Documents.					

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

Date:

NEPAL ELECTRICITY AUTHORITY

PROJECT MANAGEMENT DIRECTORATE SASEC Power System Expansion Project

Marsyangdi-Kathmandu 220 kV Transmission Line Project

ICB-PMD-MKTLP-076/77-02: Design, Supply, Installation and Commissioning of 220 kV AIS Substation at Matatirtha, Kathmandu & 220 kV GIS Substation at Markichowk, Marsyangdi

Schedule No. 4 : Installation and Other Services (b):Training Charges for training to be imparted abroad

S1.		Item for which training is to be imparted.	Country where	Nos. of	Training	Total T	raining	Charges
No.	Description		training is to be	Trainee	duration	Currency	Unit	Total
	Description		imparted		in days		rate	Training
								Charges
1	2		3	4	5	6	7	8 = 4x5x7
		i) Control & Protection and Substation		5	10			
		Automation System						
	Training to Owners personnel on Design,	ii) Switchyard Equipments (CT, CVT, Isolator		5	10			
_	testing and Maintenance aspect as per Section	and Circuit Breaker) and GIS Equipments						
_ ^	Project, Technical Specification at							
	manufacturer's works	iii) Telecommunication Equipment		3	7			
		(SDH,MUX & NMS (Craft Terminal)) and						
		PLCC						
	Total for Training Charges (total of coulmn 8							
	to be carried forward to Schedule 5: Grand							
	summary)							

N	ame of Bidder:
S	gnature of Bidder:
(F	Printed Name)
1)	Designation)
(0	Common Seal)

PROJECT MANAGEMENT DIRECTORATE

SASEC Power System Expansion Project

Marsyangdi-Kathmandu 220 kV Transmission LineProject

ICB-PMD-MKTLP-076/77-02: Design, Supply, Installation and Commissioning of 220 kV AIS Substation at Matatirtha, Kathmandu & 220 kV GIS Substation at Markichowk, Marsyangdi

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

S1.			Training	Training C	harges for	Contractors
No.			duration		Trainers	
	Description of the Test	Item for which training is to be imparted.	in days	Currency	Unit rate	Total
						Training
						Charges
1	2	3	4	5	6	7 = 4x 6
		i) Control & Protection	5			
		ii) Substation Automation System including integration aspect of existing	5			
		SCADA (of Siemens supplied SINAUT Spectrum Software) at Load Dispatch				
		Center				
a)		iii) Switchyard Equipments (CT, CVT, Isolatot and Circuit Breaker) (applicable	5			
<i>a)</i>	substation as per section Project, Technical	for Matatirtha Substation))				
	Specification	iv)GIS equipment (applicable for Marsyangdi Substation)	5			
		iv) Telecommunication Equipment (SDH, MUX & NMS (Craft Terminal)) and	5			
		PLCC				
		v) Transformers	2			
	Total for Training Charges (Total of column 7					
	to be carried forward to Schedule 5: Grand					
	Summary)					

	Summary)				
REMAR	KS:				
Date:			Signature:		
			Printed Nan	ne:	
			Designation	:	
			Common Se	al:	

NOTE: 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, arrangments for trainees and premises for conducting the training shall be arranged by OWNER.

PROJECT MANAGEMENT DIRECTORATE SASEC Power System Expansion Project Marsyangdi-Kathmandu 220 kV Transmission LineProject

ICB-PMD-MKTLP-076/77-02: Design, Supply, Installation and Commissioning of 220 kV AIS Substation at Matatirtha, Kathmandu & 220 kV GIS Substation at Markichowk, Marsyangdi

Schedule No. 4: Installation and Other Services

(d): Maintenance Charges

Sl No	Description		Qty.	Total Maintenance Charges			
				Currency	Total Maintenance Charges		
1	Maintenance Charges for Communication Equipments including SDH &	Year	1				
1	MUX. for One (1) year during Warranty period	1 Cai	1				
2	Maintenance Charges for Communication Equipments including SDH &	Year	6	_			
4	MUX. for Six (6) years after Warranty period	1 cai	6				
	Total Maintenance Charges (To be carried forward to Schedule 5: Grand						
	Summary)						
Date:			Signatu	re:			

Date:	_Signature:
	Printed Name:
	Designation:
	Common Seal:

PROJECT MANAGEMENT DIRECTORATE

SASEC Power System Expansion Project Marsyangdi-Kathmandu 220 kV Transmission LineProject

ICB-PMD-MKTLP-076/77-02: Design, Supply, Installation and Commissioning of 220 kV AIS Substation at Matatirtha, Kathmandu & 220 kV GIS Substation at Markichowk, Marsyangdi

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 N	IVA Auto Transformer (for Matatirtha& Marsyangdi			
		Substations)			
1	220/132/33kV 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			
	Total of Type Tests charges (To	tal of column 5 to be carried forward to Schedule 5: Grand			

Date:	Signature:		
	Printed Name:		
	Designation:		
	Common Seal:		

PROJECT MANAGEMENT DIRECTORATE

SASEC Power System Expansion Project

Marsyangdi-Kathmandu 220 kV Transmission Line Project

ICB-PMD-MKTLP-076/77-02: Design, Supply, Installation and Commissioning of 220 kV AIS Substation at Matatirtha, Kathmandu & 220 kV GIS Substation at Markichowk, Marsyangdi

Schedule No. 4(f)

Type Test Charges for Type Tests to be conducted in Nepal.

l. No.	De	escription of Tests	Testing Location	TEST C	HARGES
				Currency #	Amount
1	2		3	4	5
	220/132/33kV 1-Ph , 53.33 MVA	Auto Transformer (for Matatirtha& Marsyangdi Substations)			
1		Temperature rise test	Not Applicable		
2		Measurement of harmonic level in no load current	Not Applicable		
3	220/132/33kV Auto Transformer	Measurement of acoustic noise level	Not Applicable		
4		Measurement of Zero seq. reactance	Not Applicable		
5		Measurement of power taken by fans and oil pumps	Not Applicable		
		al of column 5 to be carried forward to Schedule Grand Summary)			

Date:	Signature:
	Printed Name:
	Designation:
	Common Seal:

PROJECT MANAGEMENT DIRECTORATE SASEC Power System Expansion Project

Marsyangdi-Kathmandu 220 kV Transmission LineProject

ICB-PMD-MKTLP-076/77-02: Design, Supply, Installation and Commissioning of 220 kV AIS Substation at Matatirtha, Kathmandu & 220 kV GIS Substation at Markichowk, Marsyangdi

Schedule No. 5: Grand Summary

		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 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 [1+2+3+4]	0.00	0.00

Date:

Signature: Printed Name: Designation:

Common Seal:

PROJECT MANAGEMENT DIRECTORATE SASEC Power System Expansion Project Marsyangdi-Kathmandu 220 kV Transmission LineProject

ICB-PMD-MKTLP-076/77-02: Design, Supply, Installation and Commissioning of 220 kV AIS Substation at Matatirtha, Kathmandu & 220 kV GIS Substation at Markichowk, Marsyangdi

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

Item No.	Name & Description of Parts	Name of Original Manufacturer	Part No.	Number of Units in each set	Total No. of Sets to be provided	Unit Price	Total Price	Remarks

Date:

Signature:

Printed Name:

Designation:

Common Seal: