Lekhnath Damauli 220 kV Transmission Line Project Package B: Substations BMZ201667773/KfW508598 List of Queries and Clarifications Clarification No B_3 November 16, 2022

Nº	Reference	Query	Clarification
		Commercial Queries	
		We request to retain the QR conditions of previous NEA 220kV GIS tenders which will maintain uniformity and give most competitive and proven solutions to NEA.	
	Part I, Section IV - Bidding Forms: Conformity of the facilities Requirements	 i) Must have manufacturing experience of at least 7(Seven) years. li) Must have designed, manufactured and supplied GIS Switchgears of rated kV or 	
1.	For GIS manufacturers: "GIS manufacturer experience in foreign countries shall be more than 15 years. Evidence shall be provided	higher voltage class (Circuit Breaker, Disconnectors, Grounding Switches, Instrument Transformers, etc;), at least twice the bid quantity as a main supplier over last five (5) years period ending on the last date of bid submission. Out of supplied quantity, a minimum of half the bid quantity shall have been in operation satisfactorily to the end users for at least two (2) year.	The requirement of the Bidding Document shall be followed.

Nº	Reference	Query	Clarification
		 (iii) Must have successfully carried out the complete type test as per IEC in reputed independent testing laboratory on rated kV voltage class GIS Switchgears (Circuit Breaker, Disconnectors, Grounding Switches, etc;) within last 10 (Ten) Years as on the originally scheduled date of bid opening. (iv) .Must hold a valid ISO 9001:2000 (including design in scope of registration) 	
		certIflcatio We request to retain the QR conditions of	
2.	Part I, Section IV - Bidding Forms: Conformity of the facilities Requirements For Protection & Control and Telecommunication Equipment manufacturers: "Protection & Control and Telecommunication Equipment manufacturer experience In foreign countries shall be more than 15 years. Evidence shall be provided"	 previous NEA 220kV GIS tenders which will maintain uniformity and give most competitive and proven solutions to NEA. i) Must have manufacturing experience of at least 7(Seven) years ii) Must have successfully completed the supply of control & relay panel, at least twice the bid quantity as a main supplier over last five(5) years period ending on the last date of bid submission. Out of supplied quantity, a minimum of half the bid quantity shall have been in operation satisfactorily to the end users for at least two (2) Year. iii) Must hold a valid ISO 9001:2000 (including design in scope of registration certification. 	The requirement of the Bidding Document shall be followed.

Nº	Reference	Query	Clarification
		iv) Must submit the type test report carried	
		out in Internationally accredited	
		independent testing laboratory during last 7	
		(seven) year period.	
	PC		
3.	"14.1 In the country of Origin The prices bid by the Contractor shall include all taxes, duties and other charges imposed outside the Employer's country on the production, manufacture, sale and transport of the Contractor's Equipment, Plant, Materials and Supplies to be used on or furnished under the Contract, and on the services performed under the Contract. 14.2 In Nepal 14.2.1 Unless otherwise specifically declared in the contract documents, the prices bid by the Contractor and its suppliers and subcontractors shall include business taxes and other taxes except VAT and Custom duty that may be levied in accordance with the laws and regulations in force or in effect in	Please confirm on the following: We understand that as per Nepal Tax law and recent pulished Gazette notification issued by Govt. of Nepal , 1.5% TDS is applicable to contractors i.e. TDS will be deducted on entire contract value including equipment / material to be supplied under Price Schedule 1, Price Schedule 2, and Price Schedule 4, The Bidder to submit VAT registeration in Nepal in line with tender conditions.	Please note that the text quoted by the Bidder under "Reference" does not reflect the content of the bidding document! The prevailing law of GoN shall apply.

Nº	Reference	Query	Clarification
	closing date for submission of		
	tenders in the Employer's country		
	on the Equipment, Plant, Materials		
	and Supplies		
	(permanent,temporary and		
	consumables) acquired for the		
	purpose of the Contract and on		
	the services performed under the		
	Contract.Whatsoever provisions		
	made in the Contract document		
	shall not relieve the Contractor, its		
	suppliers and subcontractors from		
	their responsibility to pay income		
	tax that may be levied in the		
	Employer's country on profits		
	made by the Contractor, its		
	suppliers and subcontractors in		
	respect of the Contract.		
	14.2.2 The Project is entitled for		
	concessional 1% custom duty and		
	VAT exemption for the import of		
	Plant & Mandatory Spare Parts to		
	be supplied from abroad in Price		
	Schedule No. 1.		
	The Contractor has to follow all		
	the procedures to import Plant &		
	Mandatory Spare Parts to be		
	supplied from abroad in Price		
	Schedule No. 1. The Contractor		
	shall pay all the taxes and duties		
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Nº	Reference	Query	Clarification
	applicable at the point of entry		
	(custom). Employer will refund		
	such amount to the Contractor		
	upon submission of the related		
	original documents. However,		
	Employer will not be responsible		
	for any demurrage charges		
	applicable due to delay in custom		
	clearance.		
	14.3 The unit bid price quoted in		
	the Price Schedule Nos. 2 & 4 are		
	exclusive of VAT. VAT in each		
	supply/progress bill shall be paid		
	to the Contractor and as per law		
	of Nepal he will be responsible for		
	depositing the same to the		
	concerned Revenue office in		
	Nepal.		
	14.4 Tax Deduction at Source		
	(TDS)		
	As per the law of Nepal the		
	Employer will deduct TDS at the		
	rate as applicable at the time of		
	execution of the contract from		
	each payment to the Contractor		
	and deposit to the Revenue office.		
	The Contractor shall be provided		
	with all details in this regard		
	promptly. The Contractor shall be		
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Nº	Reference	Query	Clarification
	responsible for obtaining tax		
	clearance before issuance of Final		
	Acceptance Certificate or before		
	releasing the final 5% retention		
	amount.		
	All firms carrying out works in		
	Nepal are required to be		
	registered at Inland Revenue		
	office. The TDS shall be deducted		
	from the contract amount as per		
	the prevailing rules and regulation		
	(i.e. Income Tax Act and		
	Regulation)		
	of Government of Nepal. "		
	Vol 1, Part I Section IV Bidding	Bidder request to confirm following:	
	Forms,		
	Plant & Conformity of Facilities	Type test certificates of similar transformers	Confirmed, similar and or Higher rated transformers
		In case the Bidder/Contractor decides to	are acceptable.
	Type test certificates of similar	demonstrate the ability to withstand the	
	transformers	dynamic effects of short circuit by	
	In case the Bidder/Contractor	calculation (IEC60076 -5, subclause 4.2), the	
4.	decides to demonstrate the ability	Bidder/Contractor shall submit a proof that	
	to withstand the dynamic effects	the sourcing transformer factory has already	
	of short circuit by calculation	successfully demonstrated the ability to	
	(IEC60076 -5, subclause 4.2), the	withstand the dynamic effects of short	
	Bidder/Contractor shall submit a	circuit by test for at least two similar and or	
	proof that the sourcing	Higher transformers (in terms of Voltage	
	transformer factory has already	and Rating). This proof shall be submitted	
	successfully demonstrated the	together with the Technical Bid.	

Nº	Reference	Query	Clarification
	ability to withstand the dynamic effects of short circuit by test for at least two similar transformers (in terms of Voltage and Rating). This proof shall be submitted together with the Technical Bid.		
		Price Schedules	
5.	Schedule No I / II / IV 1.11.3 Equipment and material for interfacing with Existing Lekhnath 132 kV Substation including all necessary cabling, cubicles, equipment and materials to complete the supply and the installation - 1 Lot	Since we are not getting support from existing supplier against this line item, bidder request you to provide detailed requirement of existing system.	Please refer to Part II, Section VII-1, sub-clause 3.2 and 4.2.1
6.	Schedule No I / II / IV 2.12.3 Equipment and material for interfacing with future New Damauli 400 kV Substation including all necessary cabling, cubicles, equipment and materials to complete the supply and the installation - 1 Lot	Bidder request to provide detailed requirement for "future New Damauli 400 kV Substation" i.e. Drawigns and BoQ in order to consider the item mentioned in the price schedule, otherwise delete the future requirement from this project.	Please refer to Part II, Section VII-1, sub-clause 3.3.12.2 and 4.2.2.

Nº	Reference	Query	Clarification
		Since some of line items are not clear in the	
		price schedule, hence Bidder request to	
	Schedule No I / II / IV	confirm below line items are part of 33kV	
	Price Schedule Item no.	Switchgear and 11kV Switchgear.	
	1.9.5,		
	1.9.6,	Price Schedule Item no.	
	2.10.9,	1.9.5,	Confirmed, these items refer to protection relays to
7.	2.10.10,	1.9.6,	be installed inside the of 33kV Switchgear and 11kV
	2.10.11,	2.10.9,	Switchgear.
	2.10.12,	2.10.10,	5
	2.10.13,	2.10.11,	
	2.10.14,	2.10.12,	
	2.10.15,	2.10.13,	
	2.10.16	2.10.14,	
		2.10.15,	
		2.10.16	
		As per the referred clause, 2.3.1 - 220/132kV	Part I Schedule I / II / IV Item 2.3.1 shall read "220/132kV
		Transformer Bays with GIB and SF6/air	Transformer Bays <u>with cable connections</u> (E02, E06)"
		bushings (E02, E06) & 2.3.5 - 132/33kV	Part I Schedule I / II / IV Item 2.3.5 shall read "132/33kV
		Transformer Bay with cable conections (E01,	Transformer Bay with GIB and SF6/air bushings (E01,
<u> </u>	Bid price schedule I / II / IV, item	E05) are given in BPS, whereas in	E05)"
8.	No. 2.3.1 & 2.3.5	specification section, VII-1 Project	
		Description and Scope of Works, clause	Revised Price Schedules including the clarification above
		3.3.3, 132kV GIS, three phase cable end unit	are attached and shall be used for bidding. Updated line items are highlighted in yellow color for ease of
		for cable connection to 220/132kV	reference.
		transformer and three phase gas insulated	

Nº	Reference	Query	Clarification
		busducts (GIB) for AIS 132/33kV transformer	
		connection are mentioned.	
		Please check & clarify	
9.	Schedule No IV, Item 1.19.4.2, 2.20.4.2, 2.20.4.5 supply of overhead travelling crane		The scope of the Contractor includes supply and installation of the overhead travelling cranes. If the Contractor supplies the equipment from abroad, custom duty, VAT and other levies or taxes shall be borne by the Contractor.
10.	Schedule No IV, Item 1.19.4.5, 2.20.4.3, 2.20.4.6, 2.20.4.8, 2.20.4.11 supply of the air conditioning and ventilation		The scope of the Contractor includes supply and installation of the air conditioning and ventilation equipment. If the Contractor supplies the equipment from abroad, custom duty, VAT and other levies or taxes shall be borne by the Contractor.
		Electrical Queries	
11.	Part II, Section VII-1 Project Description and Scope of Works, Clause 3.2.3, 3.3.1 & 3.3.3 "lot of provision (light sensor) for	Requirement is not clear "Future Arc Detection". Please elaborate. Further we understand that, bidder needs to provide only the provision of the sensors.	Confirmed, the GIS shall be equipped with the provision for future installation of an arc detection system.
12.	future arc detection" Part II, Section VII-5, Technical specification, Clause no. 3.27.3	Please confirm. Please note that Auxilliary Hook is not possible to provide in Single Girder EOT Crane. Hence we understand that, 6Ton Single Girder EOT Crane shall be provided Main Hook only. Please confirm.	Subject to decision during design stage.

Nº	Reference	Query	Clarification
13.	Part II, Section VII-5, Technical specification, clause- 5.2.2.27 QR Requirements Ability to withstand the dynamic effects of short circuit the Bidder/Contractor shall submit	As per IEC 60075-5 A.3.3.3, dynamic short circuit withstand capability of the transformers can be performed using design review of the offered transformer. Hence we shall prove SC withstand capability by using design calculations as per IEC during detail engineering stage —Please confirm	The requirement of the specification shall be followed.
	a proof that the sourcing transformer factory has already successfully demonstrated the same by test for at least two similar transformers	We can furnish higher rating (MVA and KV) SC test report. Also if more than one higher rating SC test report is required then it may be older than 10 years as transformer manufacturers do not offen conduct the SC test, unless otherwise Insisted as per contract. Please confirm	Higher higher rating (MVA and KV) is acceptable in principle (see clarification 4), however type test reports shall not be older than 10 years as required by Part I, Section IV - Bidding Forms: Conformity of the facilities.
14.	Part II, Section VII-5, Technical specification, Clause no. 16.3	As per Technical Specification We understand that, Fire Detection & Alarm System shall be Conventional Type. Please confirm.	Addressable Fire Detection & Alarm System shall be provided.
15.	Clarification -2 Prebid Clarification No 162 Query raised by bidder "The creepage mentioned for the bushing as 43.3 mm/kV (USCD) i.e. 31 mm/kV SCD. Please confirm." Clarification by NEA "Confirmed"	We understand that 43.3 mm/kV (USCD) is equivalent to 25 mm/kV SCD instead of 31 mm/kV. Please confirm our understanding is correct.	Confirmed, 43.3 mm/kV (USCD) is equivalent to 25 mm/kV SCD.

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Nº	Reference	Query	Clarification				
	General						
16.	Techical Specification / Price Schedule Order of Precednece.	There are many mismatch between Specification, Drawings and Price Schedule. Please confirm the Order of Precedence of the bidding documents and Qty. of each line item shall be as per price schedule only. (for example 1 case mentioned here, e.g. in Annex D5-11 4 nos. 48V Battery shown however 2 nos. mentioned in Price	As a general requirement, please refer to Part II, Section VII-1, subclause 3.1.1, page 17, first paragraph and to Part III, Section X, Contract Agreement. In case of 48 V Batteries, the quantities as identified the price schedules and in Part II, Section VII-1,				
		Schedule.)	sub-clause 3.1.7 and 3.3.8 shall apply (i.e. two systems for each Substation). Annex D5-11 4 shows double string configuration, but this is not mandatory.				

	Substation Package B Kreditanstalt für Wiederaufbau	(KfW)				
	Nepal Electricity Authority (N					
	Schedule No. I: Plant, and Mandatory Spare Parts	Supplied fro	m Abroa	1		
Itom	Description	Code	Unit	Quantity	Unit Price	Total Price
Item	Description	(Country	Unit	Quantity		
		of origin)			CIP	CIP
					(USD)	(USD)
				1	2	3=1x2
1	220kV Extension of the 132kV switchyard in Lekhnath					
1.1	Extension of existing 132kV Switchyard					
1.1.1	132kV Transformer Bays (E13, E14)		aat	2		
<u>1.1.1.1</u> 1.1.1.2	Set of 3-pole circuit breaker Sets of 3-pole disconnector with earthing switch		set set	2 4		
			set	2		
1.1.1.4	1-pole current transformer		nos	6		
	1-pole voltage transformer		nos	6		
	Gantries for busbar and feeders		lot	1		
<u>1.1.1.7</u> 1.1.1.8	Busbar and feeder conductors Insulators and fittings		lot lot	1		
	All other necessary equipment and materials to complete the supply and the					
1.1.1.9	installation		lot	1		
1.1.2	Transformer AIS equipment and auxiliary system for fast reconnection					
1.1.2.1	of the spare transformer unit Surge arresters for the 220 kV transformer side		nos	7		
1.1.2.2	Surge arresters for the 132 kV transformer side		nos	7		
1.1.2.3	Surge arresters for the tertiary (33 kV) side		nos	7		
1.1.2.4	Gantries for 220 kV and 132 kV auxiliary busbar		lot	1		
1.1.2.5	OHL conductors for 220 kV and 132 kV auxiliary busbar for fast		lot	1		
	reconnection of the spare transformer unit					
1.1.2.6	220 kV insulators and fittings 132 kV insulators and fittings		lot lot	1		
1.1.2.7	Materials for the interconnection of the auto-transformers tertiaries with the		IOL			
1.1.2.8	new 33 kV switchgear by means of busbar and cable including facility for		lot	1		
-	fast reconnection of spare transformer					
1.1.2.9	All other necessary equipment and materials to complete the supply and the	:	lot	1		
1.1.2.0	installation		101	-		
1.1.3	Additional extension and relocation works					
	All necessary equipment and materials for relocation of existing lighting			4		
1.1.3.1	poles affected by the extension of the 132 kV switchyard		lot	1		
	All necessary equipment and materials for relocation of two (2) existing					
1.1.3.2	lightning protection masts affected by the extension of the 132 kV	r	lot	1		
	switchyard All necessary equipment and materials for relocation, within the substation's					
1.1.3.3	property, of an out-of-service transformer currently located in front of bay		lot	1		
	E14					
1.2	220/132/33kV Autotransformer					
1.2.1	Single-phase autotransformers 220/132/33 kV 100 MVA/phase, equipped with on-load tap changer		nos	7		
100	Automatic voltage regulator, including the relevant software and integration		1			
1.2.2	in the SCMS		set	2		
1.2.3	Online transformer condition monitoring system, including the relevant		set	7		
	software and integration in the SCMS	├		· · ·		
1.2.4	All other necessary equipment and materials to complete the supply and the installation		lot	1		
		├───				
1.3	220 kV Gas Insulated Switchgear					
1.3.1	Transformer bay (D03, D07) with GIB and SF6/air bushings		set	2		
1.3.2	Local control panel with bay cabling for feeder D03, D07		set	2		
1.3.3	OHL Bay (D04, D06) with GIB and SF6/air bushings	↓]	set	2		
<u>1.3.4</u> 1.3.5	Local control panel with bay cabling for feeder D04, D06 Measuring Bay (D05)		set set	2		
1.3.5	Bus Coupler Bay D05		set	1		
	Local control panel with bay cabling for feeder D05 and (D05), including					
1.3.7	cable connections to bus bar measuring and bus bar earthing		set	1		
1.3.8	Sensors for partial discharge measurement		lot	1		
1.3.9	Provision (light sensor) for future arc detection GIS steel supports for all bays and for GIB's, including wall bushings		lot	1		
1.3.10	(material from GIS manufacturer for closing the wall openings)		lot	1		
1.3.11	Wall boards as specified (typical bay sections, single line diagram and gas		lot	1		
	compartment plan, gas density rules, gas temperature pressure curves etc.)	1		1		

1.3.13 i 1.4 2 1.4.1 2 1.4.2 2 1.4.3 2 1.4.4 2 1.4.5 i 1.4.5 i 1.5.1 (1.5.2 i 1.5.3 (Kreditanstalt für Wiederaufbau (Nepal Electricity Authority (NE Schedule No. I: Plant, and Mandatory Spare Parts Description Key box including specified labelled keys and pad locks for 220kV GIS All other necessary equipment and materials to complete the supply and the installation 220 kV AIS Equipment 220 kV AIS Equipment 220 kV OHL surge arresters 220 kV OHL gantry 220 kV insulators and fittings All other necessary equipment and materials to complete the supply and the installation 33 kV Switchgear	EA)	m Abroad	d Quantity 1 1 1 1 6 6 6	Unit Price CIP (USD) 2	Total Price CIP (USD) 3=1x2
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1.5.1 (1.5.2 F	33 kV Switchgear					
1.5.1 (1.5.2 F						
1.5.2 F	Outgoing feeder to auxiliary transformer (K02, K04)		set	2		[
153	Riser measurement panel (K01, K03)		set	2		[
153	All other necessary equipment, accessories and materials to complete the					
	supply and the installation		lot	1		l
				1 1		
1.6 2	Zig Zag Earthing Auxiliary Transformers					
	Three-phase zig zag auxiliary transformers 33/0.4 kV, hermetically sealed					l
			nos	2		1
	type with off load tap changer, each of minimum 630 kVA					l
	Tank mounted surge arresters for the primary (33 kV) side.		unit	6		
1.6.3	All other necessary equipment and materials to complete the supply and the		lot	1		1
1.0.3 i	installation		101	I.		1
1.7	LV Auxiliary Power Supply System					
1.7.1 (0.4 kV main switchgear, metal-clad type		set	1		
	220 V DC switchgear with two bus sections		set	1		[
	220 V battery chargers		set	2		
1	220 V DC batteries of Ni-Cd type, each with a minimum capacity of 600 Ah					
	(10h discharge rate)		set	2		
	48 V DC switchgear with two bus sections		set	1		
	× · · · · · · · · · · · · · · · · · · ·			-		
	48 V battery chargers		set	2		1
1.7.7	48 V DC batteries of Ni-Cd type, each with a minimum capacity of 150 Ah		set	2		1
	230 V AC UPS System		set	2		
170	All other necessary equipment and materials to complete the supply and the		1-4	4		
1.7.9 ['] i	installation		lot	1		1
						[
40	Discal generator unit (DGII)	i t				[
1.8 I	Diesel generator unit (DGU)					
Т	Diesel generator unit, minimum of 50 kVA, in a prefabricated container					
	equipped with fire-detection system and exhaust gas evacuation system		set	1		
	including fuel tank		001			l
	5					
182	All other necessary equipment and materials to complete the supply and the		lot	1		1
ii	installation			· · ·		
1.9 I	Protection & Control					
1.9.1	220 kV OHL Protection Terminals <i>incl. POW control_</i> and BCU (D04, D06)		set	2		
	220kV Bus coupler (D05) and Busbar Protections and BCU			1		
		<u>├</u> ───┤	set			
100	300MVA 220 kV side autotransformer protection incl. POW control and		a - 1	_		l
	BCU (D03, D07)		set	2		
				<u> </u>		
	300MVA 132kV side autotransformer protection and BCU (E13, E14)		set	2		
1.9.5	20MVA 33kV side autotransformer bay control and protection BCPU (K01,		ect	2		l
	K03) (installed in MV Switchgear)		set	2		
	Auxiliary Earthing Tansformer bay control and protection BCPU (K02, K04)			1		
			set	2		1
((installed in MV Switchgear)					
147	Marshalling panel for the transformer control circuits for fast reconnection of		set	2		l
5	spare transformer		Set	2		
1.9.8	All other necessary equipment and materials to complete the supply and the		lot	1		

	Substation Package B Kreditanstalt für Wiederaufbau ((KfW)				
	Nepal Electricity Authority (NE					
	Schedule No. I: Plant, and Mandatory Spare Parts		m Abroad	ł		
ltom	Description	Codo	11:14	Quantitu	Linit Drice	Total Driag
ltem	Description	Code (Country	Unit	Quantity	Unit Price	Total Price
		of origin)			CIP	CIP
		, , ,			(USD)	(USD)
				1	2	3=1x2
4 4 0	Synchrophasor Measurement Unit (PMU)		lat	4		
1.10	for monitoring voltage and current as defined in the Scope, including software, documentation, cubicles, accessories		lot	1		
	software, documentation, cubicles, accessories					
1.11	SCADA and SCMS					
	SCADA and SCMS system for new 220/132/33/11 kV Substation					
	including all necessary cabling, cubicles, desks, chairs, equipment and					
1.11.1	materials to complete the supply and the installation, The Contractor shall		set	1		
	ensure that after handing over, a minimum of 50% spare function capacity					
	(hardware and software, number of I/O to be handled by the SCMS)					
1.11.2	Equipment and material for interfacing with NLDC/ECC including all necessary cabling, cubicles, equipment and materials to		aat	1		
1.11.2	complete the supply and the installation		set	'		
4 4 4 9	Equipment and material for interfacing with Existing Lekhnath 132 kV					
1.11.3	Substation including all necessary cabling, cubicles, equipment and		set	1		
	materials to complete the supply and the installation					
	T	<u>↓ </u>				
1.12	Telecommunication SDH Equipment					
1.12.1	SDH Equipment SDH node for FOC connections to the new 220/132/33/11kV GIS Damauli		lot	1		
1.12.1	Substation and to the existing 132/33/11kV Lekhnath Substation		101	'		
1.12.2	Fibre optical cables and patch cords		lot	1		
	Optical Distribution Frame and accessories	1	lot	1		
1.12.4	IP-PBX telephony system, including appropriate telephone sets		lot	1		
1.12.5	All other necessary cubicles, software, equipment and materials to		lot	1		
	complete the supply and the installation					
1.13	Metering					
	Meter for 220kV OHL					
1.13.1	Main & Control		set	2		
1.13.2	Meter for 220/132/33 kV autotransformers (220 kV side and 132 kV side)		set	4		
1.13.2	Main & Control		501	4		
1.13.3	Meter for auxiliary transformers		set	4		
	Main & Control Communication equipment (Ethernet Switches / Patch Panels / FOs /					
1.13.4	Cables etc)		lot	1		
1.13.5	GPRS-GSM communication device		set	1		
1.13.6	Cabinet		lot	1		
1.13.7	Notebook PC including related software for local access for meter reading		set	1		
1.13.8	All other necessary, software, equipment and materials to complete the		lot	1		
	supply and the installation					
1.14	Power and Control Cables					
	33 kV Cables, sealing ends, terminals and accessories for 33 kV auxiliary					
1.14.1	system including accessories		lot	1		
1.14.2	LV Power and Control cables and accessories for auxiliary supply,		lot	1		
1.17.2	protection, control, metering, fire protection, including accessories		101			
1.14.3	All other necessary equipment and materials to complete the supply and the		lot	1		
	installation					
1.15	Earthing and lightning protection systems		lot	1		
1.15			101			
1.16	Lighting and small power system		lot	1		
	Fire Protection system					
	Fire detection system		lot	1		
	Portable fire extinguishers		lot	1		
	Fire fighting system			<u> </u>		
	Containerised fire fighting pump system		lot	1		
	Fire fighting water tank		lot	1		
	Fire fighting water supply pump with well		lot	1		
	Transformer deluge systems for power transformers Fire hydrant network and interconnection piping		set lot	7		
1.17.3.5	All accessories necessary for the satisfactory operation of the system but		IOL			
1.17.3.6	which are not separately listed		lot	1		
	minor are not separately inted					

	Substation Package B Kreditanstalt für Wiederaufbau	(KfW)				
	Nepal Electricity Authority (Ni					
	Schedule No. I: Plant, and Mandatory Spare Parts		m Abroa	ł		
	Decederation		11.24	0		Train
Item	Description	Code (Country	Unit	Quantity	Unit Price	Total Price
		of origin)			CIP	CIP
		•••••••••			(USD)	(USD)
				1	2	3=1x2
1.18	CCTV system					
1.18.1	Central unit		set	1		
1.18.2	Control panel		set	1		
1.18.3 1.18.4	Monitor Indoor Camera		set lot	2		
1.18.5	Outdoor Camera		lot	1		
1.18.6	All other necessary equipment and materials to complete the extension		lot	1		
2	Construction of 220/132/33/11 kV substation in Damauli					
2.1	220 kV Gas Insulated Switchgear					
2.1.1	OHL Bays with GIB and SF6/air bushings (D06, D07, D08, D13, D14, D15)		set	6		
2.1.1			001	ů		
2.1.2	Local control panel with bay cabling for feeder (D06, D07, D08, D13, D14, D15)		set	6		
2.1.3	220/132kV Transformer Bay with GIB and SF6/air bushings (D09 and D12)		set	2		
2.1.4	Local control panel with bay cabling for feeder (D09 and D12)		set	2		
2.1.5	Bus Coupler Bays (D05, D16)		set	2		
2.1.6	Local control panel with bay cabling for feeder (D05, D16)		set	2		
2.1.7	Measuring Bays ((D10) and (D11)) Busbar Sectionalizers (D10, D11)		set	2		
2.1.8	Local control panel with bay cabling for feeder D10 and D11, including		set set	2		
2.1.0	cable connections to bus bar measuring and bus bar earthing		001	-		
2.1.10	Sensors for partial discharge measurement		lot	1		
2.1.11	Provision (light sensor) for future arc detection		lot	1		
2.1.12	GIS steel supports for all bays and for GIB's, including wall bushings (material from GIS manufacturer for closing the wall openings)		lot	1		
2.1.13	Wall boards as specified (typical bay sections, single line diagram and gas compartment plan, gas density rules, gas temperature pressure curves etc.)		lot	1		
2.1.14	Key box including specified labelled keys and pad locks for 220kV GIS		lot	1		
2.1.15	All other necessary equipment and materials to complete the supply and the installation		lot	1		
				-		
2.2 2.2.1	220 kV AIS Equipment 220kV OHL surge arresters		200	18		
2.2.1	220kV OFIL surge anesters 220kV capacitive voltage transformers		nos nos	18		
	220 kV OHL gantry		lot	1		
2.2.4	220 kV insulators and fittings		lot	1		
2.2.5	All other necessary equipment and materials to complete the supply and the installation		lot	1		
2.3	132 kV Gas Insulated Switchgear					
2.3.1	220/132kV Transformer Bays with cable connections (E02, E06)		set	2		
2.3.2	Local control panel with bay cabling for feeder E02, E06		set	2		
2.3.3	OHL Bays with GIB and SF6/air bushings (E03, E07)		set	2		
2.3.4	Local control panel with bay cabling for feeder E03, E07		set	2		
2.3.5	132/33kV Transformer Bay with GIB and SF6/air bushings (E01, E05)		set	2		
2.3.6	Local control panel with bay cabling for feeder E01, E05		set	2		
2.3.7	Measuring Bay (E04)		set	1		
2.3.8	Bus Coupler E04		set	1		
2.3.9	Local control panel with bay cabling for feeder E04 and (E04), including		set	1		
	cable connections to bus bar measuring and bus bar earthing					
2.3.10 2.3.11	Sensors for partial discharge measurement Provision (light sensor) for future arc detection		lot lot	1		
2.3.12	GIS steel supports for all bays and for GIB's, including wall bushings (material from GIS manufacturer for closing the wall openings)		lot	1		
2.3.13	Wall boards as specified (typical bay sections, single line diagram and gas compartment plan, gas density rules, gas temperature pressure curves etc.)		lot	1		
2.3.14	Key box including specified labelled keys and pad locks for 132kV GIS		lot	1		
2.3.15	All other necessary equipment and materials to complete the supply and the installation		lot	1		

	Substation Package B Kreditanstalt für Wiederaufbau (KfW)				
	Nepal Electricity Authority (NE					
	Schedule No. I: Plant, and Mandatory Spare Parts		m Abroad	1		
						-
ltem	Description	Code	Unit	Quantity	Unit Price	Total Price
		(Country			CIP	CIP
		of origin)				
				4	(USD)	(USD)
2.4	122 LV/ AIS Equipment			1	2	3=1x2
2.4 2.4.1	132 kV AIS Equipment 132 kV OHL surge arresters		nos	6		
2.4.1	132 kV capacitive voltage transformers		nos	6		
2.4.3	132 kV OHL gantry		lot	1		
2.4.4	132 kV insulators and fittings		lot	1		
	All other necessary equipment and materials to complete the supply and the					
2.4.5	installation		lot	1		
2.5	Power Transformers					
2.5.1	220/132 Power Transformer					
2.5.1.1	Three-phase power transformer 220/132 kV 50/63 MVA, equipped with on-		nos	2		
2.5.1.2	load tap changer line surge arresters for the primary (220 kV) side		nos	6		
2.5.1.2	line surge arresters for the primary (220 kV) side		nos nos	6		
	automatic voltage regulator, including the relevant software and integration					
2.5.1.4	in the SCMS		set	2		
	All other necessary equipment and materials to complete the supply and the					
2.5.1.5	installation		lot	1		
2.5.2	132/33 kV Power Transformer					
2.5.2.1	Three-phase power transformer 132/33kV 24/30 MVA, equipped with on-			2		
2.5.2.1	load tap changer		nos	2		
2.5.2.2	Line surge arresters for the secondary (132 kV) side		nos	6		
2.5.2.3	Line surge arresters for the secondary (33 kV) side		nos	6		
2.5.2.4	Automatic voltage regulator, including the relevant software and integration		set	2		
2.0.2.1	in the SCMS		001	-		
2.5.2.5	All other necessary equipment and materials to complete the supply and the		lot	1		
	installation					
2.5.3	33/11 kV Power Transformer					
2.5.3.1	Three-phase power transformer 33/11kV 6/8 MVA, equipped with on-load tap changer		nos	2		
2.5.3.2	Line surge arresters for the secondary (33 kV) side		nos	6		
2.5.3.3	Line surge arresters for the secondary (30 kV) side		nos	6		
	Automatic voltage regulator, including the relevant software and integration					
2.5.3.4	in the SCMS		set	2		
	All other necessary equipment and materials to complete the supply and the					
2.5.3.5	installation		lot	1		
2.6	MV Metal Clad AIS Switchgear	İ				
2.6.1	33 kV Switchgear					
2101111	Incomers for 132/33kV transformer connection (J02, J11)		nos	2		
2.6.1.2	Outgoing feeders (J04, J10)		nos	2		
2.6.1.3	Outgoing feeder 33/11 kV transformer (J03, J12)		nos	2		
2.6.1.4	Outgoing feeders to auxiliary transformer (J05, J09)		nos	2		
2.6.1.5	Bus tie (J07)		nos	1		
2.6.1.6	Riser measurement panel (J08)		nos	1		
2.6.1.7	Measurement panel (J06)		nos	1		
2.6.1.8	All other necessary equipment, accessories and materials to complete the		lot	1		
	supply and the installation					
2.6.2	11 kV Switchgear					
2.6.2.1	Incomers for 33/11kV transformer connection (K03, K08)		nos	2		
2.6.2.2	Outgoing feeders (K04, K05, K09, K11, K12)		nos	5		
2.6.2.3	Bus tie (K07)		nos	1		
2.6.2.4	Riser measurement panel (K06)	1	nos	1		-
2.6.2.5	Measurement panel (K10)		nos	1		
	All other necessary equipment, accessories and materials to complete the			4		
2.6.2.6	supply and the installation		lot	1		
				1		
2.7	Auxiliary Transformers					
2.7.1	Three-phase auxiliary transformers 33/0.4 kV, hermetically sealed type with		nos	2		
	off load tap changer, each of minimum 630 kVA		105			
2.7.2	Tank mounted surge arresters for the primary (33 kV) side.	1	nos	6		

	Substation Package B Kreditanstalt für Wiederaufbau (KfW)				
	Nepal Electricity Authority (NE					
	Schedule No. I: Plant, and Mandatory Spare Parts	Supplied fro	m Abroad	ł		
		1				
Item	Description	Code	Unit	Quantity	Unit Price	Total Price
		(Country of origin)			CIP	CIP
		or origin)			(USD)	(USD)
				1	2	3=1x2
070	All other necessary equipment and materials to complete the supply and the		lat			
2.7.3	installation		lot	1		
2.8	LV Auxiliary Power Supply System					
2.8.1	0.4 kV main switchgear, metal-clad type		set	1		
2.8.2	220 V DC switchgear with two bus sections		set	1 2		
	220 V battery chargers 220 V DC batteries of Ni-Cd type, each with a minimum capacity of 600 Ah		set			
2.8.4	(10h discharge rate)		set	2		
2.8.5	48 V DC switchgear with two bus sections		set	1		
2.8.6	48 V battery chargers		set	2		
2.8.7	48 V DC batteries of Ni-Cd type, each with a minimum capacity of 150 Ah		set	2		
2.8.8	230 V AC UPS System		set	2		
2.8.9	All other necessary equipment and materials to complete the supply and the		lot	1		
	installation		-			
						<u> </u>
2.9	Diesel generator unit (DGU)					
	Diesel generator unit, minimum of 100 kVA, in a prefabricated container					
2.9.1	equipped with fire-detection system and exhaust gas evacuation system		set	1		
	including fuel tank			-		
2.9.2	All other necessary equipment and materials to complete the supply and the		lot	1		
	installation					
2.10	Protection & Control					
	220 kV OHL Protection Terminals incl. POW control and BCU (D06, D07,					
2.10.1	D08, D13, D14, D15)		set	6		
0.40.0				0		
2.10.2	220kV Bus-sectionaliser and Busbar protection and BCU (D10, D11)		set	2		
0 10 0	2204// Bus souther and Busher protection (D05, D16)		aat	2		
2.10.3	220kV Bus-coupler and Busbar protection (D05, D16)		set	2		
2.10.4	50/63 MVA 220/132 kV Transformer 220 kV side protection and BCU (D09,		set	2		
2.10.4	D12)		Set	2		
2.10.5	50/63 MVA 220/132/ kV Transformer 132 kV side protection and BCU (E02,		set	2		
2.10.0	E06)			-		
2.10.6	132 kV OHL Protection Terminals and BCU (E03, E07)		set	2		
2.10.7	132kV Bus-coupler and Busbar protections and BCU (E04)		set	1		
	132/33kV 24/30 MVA Transformer feeder protection 132 kV side and BCU					
2.10.8	(E01, E05)		set	2		
	132/33kV 24/30 MVA Transformer feeder bay control and protection					
2.10.9	(BCPU) 33 kV side (J02, J09)		set	2		
2.10.0	(installed in 33 kV switchgear)			-		
	33kV Bus-coupler bay control and protection (BCPU) (J07)					
2.10.10	(installed in 33 kV switchgear)		set	1		
0.40.44				_		
2.10.11	33kV Feeder bay control and protection (BCPU) (J04, J08)		set	2		
2.10.12	33/11kV 8/10MVA Transformer feeder bay control and protection (BCPU)		sot	2		
2.10.12	33 kV side (J03, J10)		set	۷		
2.10.13	33/11kV 8/10MVA Transformer feeder protection 11 kV side (K03, K08)		set	2		
2.10.10	(installed in 11 kV switchgear)		301	-		
2.10.14	11kV Feeder bay control and protection (BCPU) (K04, K05, K11, K12, K13,		set	5		
2.10.14	K14) (installed in 11 kV switchgear)		361	5		
2.10.15	11kV Auxiliary Transformer Feeder bay control and protection (BCPU) (K06,		set	2		
2.10.10	K10) (installed in 11 kV switchgear)		301	-		
2.10.16	11kV Bus-coupler protection (K07)	I T	set	1		
2.10.10			351	I		
2.10.17	All other necessary equipment and materials to complete the supply and the		lot	1		
	installation		101			
	Ourschusselses an Management (1954)					
	Synchrophasor Measurement Unit (PMU) for monitoring voltage and current as defined in the Scope, including		1	4		
0 4 4	wor monitoring voltage and current as defined in the Scope including		set	1		
2.11	software, documentation, cubicles, accessories		001	-		

	Substation Package B Kreditanstalt für Wiederaufbau (KfW)				
	Nepal Electricity Authority (Ni					
	Schedule No. I: Plant, and Mandatory Spare Parts	Supplied fro	m Abroa	ł		
Item	Description	Code	Unit	Quantity	Unit Price	Total Price
nom	Boostiption	(Country	Unit	quantity	CIP	CIP
		of origin)				
				1	(USD) 2	(USD) 3=1x2
2.12	SCADA and SCMS					0 1/12
	SCADA and SCMS system for new 220/132/33/11 kV Substation					
2.12.1	including all necessary cabling, cubicles, desks, chairs, equipment and materials to complete the supply and the installation. The Contractor shall		lot	1		
2.12.1	ensure that after handing over, a minimum of 50% spare function capacity		101	i		
	(hardware and software, number of I/O to be handled by the SCMS)					
0 40 0	Equipment and material for interfacing with NLDC/ECC		1-4	4		
2.12.2	including all necessary cabling, cubicles, equipment and materials to complete the supply and the installation		lot	1		
	Equipment and material for interfacing with future New Damauli 400 kV					
2.12.3	Substation including all necessary cabling, cubicles, equipment and		lot	1		
	materials to complete the supply and the installation					
2.13	Telecommunication					
2.10	SDH Equipment			1		
2.13.1	SDH node for FOC connections of new 220 kV GIS Lekhnath Substation, to		lot	1		
	Tanahu HPP, 220 kV Bharatpur Substation, Old Damauli and 132 kV					
	Bharatpur. Fibre optical cables, including approach cable from splicing box to SDH					
2.13.2	equipment and patch cords		lot	1		
2.13.3	Optical Distribution Frame and accessories		lot	1		
2.13.4	IP-PBX telephony system, including appropriate telephone sets All other necessary cubicles, software, equipment and materials to		lot	1		
2.13.5	complete the supply and the installation		lot	1		
2.14	Metering					
2.14.1	Meter for 220kV OHL Main & Control		set	6		
	Meter for 132 OHL					
2.14.2	Main & Control		set	2		
2.14.3	Meter for 220/132 kV Transformers, (220 kV side and 132 kV side),		set	4		
	Main & Control Meter for 132/33 kV Transformers, 132 kV side and 33 kV side),					
2.14.4	Main & Control		set	4		
2.14.5	Meter for 33/11 kV Transformers, (33 kV side and 11 kV side),		set	4		
	Main & Control Meter for 33 kV Feeders					
2.14.6	Main & Control		set	2		
2.14.7	Meter for 11 kV Feeders		set	5		
2.14.7	Main & Control		301	5		
2.14.8	Meter for auxiliary transformers Main & Control		set	2		
2 1 4 0	Communication equipment (Ethernet Switches / Patch Panels / FOs /		lat	1		
2.14.9	Cables etc)		lot	1		
2.14.10 2.14.11	GPRS-GSM communication device Cabinet		lot lot	1		
2.14.11	Notebook PC including related software for local access for meter reading		set	1		
2.14.13	All other necessary, software, equipment and materials to complete the		lot	1		
2.14.13	supply and the installation		101	1		
2.15	Power and Control Cables					
2.10	HV cable systems comprising 132 kV XLPE cables for the connection					
2.15.1	between the secondary windings of 220/132 kV transformers and the		lot	1		
	132 kV switchgear					
	MV cable systems comprising 33 kV XLPE cables for the connection			1		
2.15.2	between secondary windings of 132/33 kV transformers and 33 kV		lot	1		
	switchgear					
	MV cable systems comprising 33 kV XLPE cables for the connection					
2.15.3	between 33 kV switchgear and 33/11 kV transformers		lot	1		
0.45.4	MV cable systems comprising 33 kV XLPE cables for the connection		1.1			
2.15.4	between 33kV switchgear and auxiliary transformers		lot	1		
	MV cable systems comprising 11 kV XLPE cables for the connection					
2.15.5	between secondary windings of 33/11 kV transformers and 11 kV		lot	1		
	switchgear					
2.15.6	MV cable systems comprising 11 kV XLPE cables for the connection of three 11 kV feeders between between 11 kV switchgear and distribution		lot	1		
Z. 10.0	Truee II KV reeders between between II KV Switchgear and distribution		IOL			

	Substation Package B Kreditanstalt für Wiederaufbau (KfW)				
	Nepal Electricity Authority (NE					
	Schedule No. I: Plant, and Mandatory Spare Parts		m Abroad	ł		
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Item	Description	Code (Country	Unit	Quantity	Unit Price	Total Pric
		of origin)			CIP	CIP
		or origin/			(USD)	(USD)
				1	2	3=1x2
2.15.7	LV Power and Control cables and accessories for auxiliary supply,		lot	1		
2.13.7	protection, control, metering including accessories		IOL	I		
2.15.8	All other necessary equipment and materials to complete the supply and the		lot	1		
20.0	installation					
2.46	Forthing and lightning protection systems		lot	1		
2.16	Earthing and lightning protection systems		101	'		
2.17	Lighting and small power system		lot	1		
2.18	Fire Protection system					
2.18.1	Fire detection system		lot	1		
	Portable fire extinguishers		lot	1		
2.18.3	Fire fighting system					
	Containerised fire fighting pump system		lot	1		
	Fire fighting water tank		lot	1		
	Fire fighting water supply pump with well		lot	1		
	Transformer deluge systems for power transformers		set	6		
2.18.3.5	Fire hydrant network and interconnection piping		lot	1		
2.18.3.6	All accessories necessary for the satisfactory operation of the system but which are not separately listed		lot	1		
				-		
2.40	CCTV eveter					
2.19 2.19.1	CCTV system Central unit		set	1		
2.19.1	Control panel		set	1		
2.19.2	Monitor		set	2		
2.19.4	Indoor Camera		lot	1		
2.19.5	Outdoor Camera		lot	1		
2.19.6	All other necessary equipment and materials to complete the extension		lot	1		
2						
3	Mandatory Spare Parts					
3	Mandatory Spare Parts					
3.1	High Voltage GIS equipment					
	High Voltage GIS equipment For 220 kV GIS		lot	1		
3.1 3.1.1	High Voltage GIS equipment		lot lot	1 1 1		
3.1 3.1.1 3.1.1.1 3.1.1.2	High Voltage GIS equipment For 220 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed)					
3.1 3.1.1 3.1.1.1 3.1.1.2 3.1.2	High Voltage GIS equipment For 220 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) For 132 kV GIS		lot	1		
3.1 3.1.1 3.1.1.1 3.1.1.2 3.1.2 3.1.2 .1	High Voltage GIS equipment For 220 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) For 132 kV GIS Close coils (four of each type installed)		lot lot	1		
3.1 3.1.1 3.1.1.1 3.1.1.2 3.1.2 3.1.2 .1	High Voltage GIS equipment For 220 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) For 132 kV GIS		lot	1		
3.1 3.1.1 3.1.1.1 3.1.1.2 3.1.2 3.1.2 .1	High Voltage GIS equipment For 220 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) For 132 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) Trip coils (four of each type installed)		lot lot	1		
3.1 3.1.1 3.1.1.1 3.1.1.2 3.1.2 3.1.2.1 3.1.2.2	High Voltage GIS equipment For 220 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) For 132 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) High Voltage AIS equipment For 220 kV equipment		lot lot	1		
3.1 3.1.1 3.1.1.1 3.1.2 3.1.2.1 3.1.2.2 3.1.2.1 3.1.2.2 3.2 3.2 3.2.1 3.2.1.1	High Voltage GIS equipment For 220 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) For 132 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) Trip coils (four of each type installed) High Voltage AIS equipment For 220 kV equipment 1-ph capacitive voltage transformer		lot lot	1 1 1 1 2		
3.1 3.1.1 3.1.1.1 3.1.2 3.1.2.1 3.1.2.2 3.2 3.2 3.2.1 3.2.1.1 3.2.1.2	High Voltage GIS equipment For 220 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) For 132 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) Trip coils (four of each type installed) High Voltage AIS equipment For 220 kV equipment I-ph capacitive voltage transformer 1-ph lighting arrester, including one counter		lot lot lot nos nos	1 1 1 2 3		
3.1 3.1.1 3.1.1.1 3.1.2.2 3.1.2.1 3.1.2.2 3.2 3.2 3.2 1.1 3.2.1.2 3.2.1.1 3.2.1.2 3.2.1.3	High Voltage GIS equipment For 220 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) For 132 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) Trip coils (four of each type installed) High Voltage AIS equipment For 220 kV equipment 1-ph capacitive voltage transformer 1-ph lighting arrester, including one counter Tension insulator set		lot lot lot nos set	1 1 1 2 3 3		
3.1 3.1.1 3.1.1.1 3.1.2 3.1.2.1 3.1.2.2 3.2.1 3.2.1.1 3.2.1.1 3.2.1.2 3.2.1.3 3.2.1.4	High Voltage GIS equipment For 220 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) For 132 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) High Voltage AIS equipment For 220 kV equipment 1-ph capacitive voltage transformer 1-ph lighting arrester, including one counter Tension insulator set Suspension insulator set		lot lot lot nos set set	1 1 1 2 3 3 3 3		
3.1 3.1.1 3.1.1.1 3.1.2.2 3.1.2.1 3.1.2.2 3.2 3.2 3.2 3.2.1.1 3.2.1.2 3.2.1.3	High Voltage GIS equipment For 220 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) For 132 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) Trip coils (four of each type installed) High Voltage AIS equipment For 220 kV equipment 1-ph capacitive voltage transformer 1-ph lighting arrester, including one counter Tension insulator set		lot lot lot nos set	1 1 1 2 3 3		
3.1 3.1.1 3.1.1.1 3.1.2 3.1.2.1 3.1.2.2 3.2 3.2 3.2.1 3.2.1.1 3.2.1.2 3.2.1.3 3.2.1.3 3.2.1.4 3.2.1.5	High Voltage GIS equipment For 220 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) For 132 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) Trip coils (four of each type installed) High Voltage AIS equipment For 220 kV equipment 1-ph capacitive voltage transformer 1-ph lighting arrester, including one counter Tension insulator set Suspension insulator set Clamps and fittings (five of of each type installed)		lot lot lot nos set set	1 1 1 2 3 3 3 3		
3.1 3.1.1 3.1.1.1 3.1.2 3.1.2.1 3.1.2.2 3.2.1 3.2.1.1 3.2.1.1 3.2.1.2 3.2.1.3 3.2.1.4	High Voltage GIS equipment For 220 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) For 132 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) High Voltage AIS equipment For 220 kV equipment 1-ph capacitive voltage transformer 1-ph lighting arrester, including one counter Tension insulator set Suspension insulator set		lot lot lot nos set set	1 1 1 2 3 3 3 3		
3.1 3.1.1 3.1.1.1 3.1.2.1 3.1.2.2 3.2 3.2.1 3.2.1.2 3.2.1.2 3.2.1.3 3.2.1.4 3.2.1.5 3.2.2.1 3.2.2.1 3.2.2.1	High Voltage GIS equipment For 220 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) For 132 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) Trip coils (four of each type installed) Trip coils (four of each type installed) High Voltage AIS equipment For 220 kV equipment 1-ph capacitive voltage transformer 1-ph lighting arrester, including one counter Tension insulator set Suspension insulator set Clamps and fittings (five of of each type installed) For 132 kV circuit breakers Single pole of circuit breaker Driving mechanism single-pole		lot lot lot nos nos set set set set set	1 1 1 2 3 3 3 1 1 1 1		
3.1 3.1.1 3.1.1.1 3.1.2 3.1.2 3.1.2.1 3.1.2.2 3.2.1 3.2.1.2 3.2.1.3 3.2.1.4 3.2.1.5 3.2.1.4 3.2.1.5 3.2.2.1 3.2.2.2 3.2.2.2 3.2.2.3	High Voltage GIS equipment For 220 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) For 132 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) High Voltage AIS equipment For 220 kV equipment 1-ph capacitive voltage transformer 1-ph lighting arrester, including one counter Tension insulator set Suspension insulator set Clamps and fittings (five of of each type installed) For 132 kV circuit breakers Single pole of circuit breaker Driving mechanism single-pole Close coils (four of each type installed)		lot lot lot nos nos set set set set lot	1 1 1 2 3 3 3 1 1 1 1 1		
3.1 3.1.1 3.1.1.1 3.1.2.1 3.1.2.2 3.2 3.2.1 3.2.1.2 3.2.1.2 3.2.1.3 3.2.1.4 3.2.1.5 3.2.2.1 3.2.2.1 3.2.2.1	High Voltage GIS equipment For 220 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) For 132 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) Trip coils (four of each type installed) Trip coils (four of each type installed) High Voltage AIS equipment For 220 kV equipment 1-ph capacitive voltage transformer 1-ph lighting arrester, including one counter Tension insulator set Suspension insulator set Clamps and fittings (five of of each type installed) For 132 kV circuit breakers Single pole of circuit breaker Driving mechanism single-pole		lot lot lot nos nos set set set set set	1 1 1 2 3 3 3 1 1 1 1		
3.1 3.1.1 3.1.1.1 3.1.2.1 3.1.2.2 3.2.1 3.2.1.1 3.2.1.2 3.2.1.1 3.2.1.2 3.2.1.3 3.2.1.4 3.2.1.5 3.2.2.1 3.2.2.1 3.2.2.2 3.2.2.1 3.2.2.2 3.2.2.3 3.2.2.4	High Voltage GIS equipment For 220 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) For 132 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) For 132 kV GIS Close coils (four of each type installed) High Voltage AIS equipment For 220 kV equipment 1-ph capacitive voltage transformer 1-ph lighting arrester, including one counter Tension insulator set Suspension insulator set Clamps and fittings (five of of each type installed) For 132 kV circuit breakers Single pole of circuit breaker Driving mechanism single-pole Close coils (four of each type installed) Trip coils (four of each type installed)		lot lot lot nos nos set set set set lot	1 1 1 2 3 3 3 1 1 1 1 1		
3.1 3.1.1 3.1.1.1 3.1.2.2 3.1.2.1 3.1.2.2 3.2.1 3.2.1.1 3.2.1.2 3.2.1.1 3.2.1.2 3.2.1.3 3.2.1.4 3.2.1.5 3.2.2.1 3.2.2.2 3.2.2.1 3.2.2.2 3.2.2.3 3.2.2.4 3.2.3	High Voltage GIS equipment For 220 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) For 132 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) For 132 kV GIS Close coils (four of each type installed) High Voltage AIS equipment For 220 kV equipment 1-ph capacitive voltage transformer 1-ph lighting arrester, including one counter Tension insulator set Suspension insulator set Clamps and fittings (five of of each type installed) For 132 kV circuit breakers Single pole of circuit breaker Driving mechanism single-pole Close coils (four of each type installed) Trip coils (four of each type installed) For 132 kV disconnectors and earthing switches		lot lot lot nos set set set set lot lot	1 1 1 2 3 3 3 3 1 1 1 1 1 1 1		
3.1 3.1.1 3.1.1.1 3.1.2.1 3.1.2.1 3.1.2.2 3.2 3.2.1 3.2.1.2 3.2.1.3 3.2.1.4 3.2.1.5 3.2.2.1 3.2.2.1 3.2.2.2 3.2.2.1 3.2.2.2 3.2.2.3 3.2.2.4 3.2.3 3.2.3.1	High Voltage GIS equipment For 220 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) For 132 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) Trip coils (four of each type installed) Trip coils (four of each type installed) High Voltage AIS equipment For 220 kV equipment 1-ph capacitive voltage transformer 1-ph lighting arrester, including one counter Tension insulator set Suspension insulator set Clamps and fittings (five of of each type installed) For 132 kV circuit breakers Single pole of circuit breaker Driving mechanism single-pole Close coils (four of each type installed) Trip coils (four of each type installed) Trip coils (four of each type installed) Trip coils (four of each type installed) For 132 kV disconnectors and earthing switches Disconnector contacts		lot lot lot nos nos set set set set lot lot lot	1 1 1 2 3 3 3 1 1 1 1 1 1 1 2		
3.1 3.1.1 3.1.1.1 3.1.1.2 3.1.2.1 3.1.2.2 3.2.1 3.2.1.1 3.2.1.2 3.2.1.3 3.2.1.4 3.2.1.5 3.2.1.4 3.2.1.5 3.2.2.1 3.2.2.1 3.2.2.2 3.2.2.3 3.2.2.4 3.2.3.1 3.2.3.1 3.2.3.2	High Voltage GIS equipment For 220 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) For 132 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) For 132 kV GIS Close coils (four of each type installed) High Voltage AIS equipment For 220 kV equipment 1-ph capacitive voltage transformer 1-ph lighting arrester, including one counter Tension insulator set Suspension insulator set Clamps and fittings (five of of each type installed) For 132 kV circuit breakers Single pole of circuit breaker Driving mechanism single-pole Close coils (four of each type installed) Trip coils (four of each type installed) For 132 kV disconnectors and earthing switches		lot lot lot nos set set set set lot lot	1 1 1 2 3 3 3 3 1 1 1 1 1 1 1		
3.1 3.1.1 3.1.1.1 3.1.1.2 3.1.2.1 3.1.2.2 3.2.1 3.2.1.1 3.2.1.2 3.2.1.3 3.2.1.1 3.2.1.2 3.2.1.3 3.2.1.4 3.2.1.4 3.2.2.1 3.2.2.1 3.2.2.1 3.2.2.1 3.2.2.2 3.2.2.3 3.2.2.4 3.2.3.1 3.2.3.3	High Voltage GIS equipment For 220 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) For 132 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) Trip coils (four of each type installed) Trip coils (four of each type installed) High Voltage AIS equipment For 220 kV equipment 1-ph capacitive voltage transformer 1-ph lighting arrester, including one counter Tension insulator set Suspension insulator set Clamps and fittings (five of of each type installed) For 132 kV circuit breakers Single pole of circuit breaker Driving mechanism single-pole Close coils (four of each type installed) Trip coils (four of each type installed) For 132 kV disconnectors and earthing switches Disconnector contacts Earthing switch contacts		lot lot lot nos nos set set set set lot lot lot set set	1 1 1 2 3 3 3 1 1 1 1 1 1 2 2 2		
3.1 3.1.1 3.1.1.1 3.1.2.1 3.1.2.1 3.1.2.2 3.2 3.2.1.1 3.2.1.2 3.2.1.3 3.2.1.3 3.2.1.4 3.2.1.4 3.2.1.4 3.2.2.1 3.2.2.1 3.2.2.1 3.2.2.1 3.2.2.1 3.2.2.3 3.2.2.4 3.2.3.1 3.2.3.3	High Voltage GIS equipment For 220 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) For 132 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) Trip coils (four of each type installed) High Voltage AIS equipment For 220 kV equipment 1-ph capacitive voltage transformer 1-ph lighting arrester, including one counter Tension insulator set Suspension insulator set Clamps and fittings (five of of each type installed) For 132 kV circuit breakers Single pole of circuit breaker Driving mechanism single-pole Close coils (four of each type installed) Trip coils (four of each type installed) For 132 kV disconnectors and earthing switches Disconnector contacts Earthing switch contacts Motor of disconnector drive		lot lot lot nos nos set set set lot lot lot set set set set	1 1 1 2 3 3 3 1 1 1 1 1 1 1 1 2 2 2 1		
3.1 3.1.1 3.1.1.1 3.1.2.1 3.1.2.1 3.1.2.2 3.2 3.2 3.2 3.2 3.2.1.1 3.2.1.2 3.2.1.3 3.2.1.4 3.2.1.2 3.2.1.3 3.2.1.4 3.2.1.5 3.2.2.1 3.2.2.2 3.2.2.1 3.2.2.2 3.2.2.3 3.2.2.4 3.2.3.1 3.2.3.2 3.2.3.1 3.2.3.5	High Voltage GIS equipment For 220 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) For 132 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) Trip coils (four of each type installed) High Voltage AIS equipment For 220 kV equipment 1-ph capacitive voltage transformer 1-ph lighting arrester, including one counter Tension insulator set Suspension insulator set Clamps and fittings (five of of each type installed) For 132 kV circuit breakers Single pole of circuit breaker Driving mechanism single-pole Close coils (four of each type installed) Trip coils (four of each type installed) For 132 kV disconnectors and earthing switches Disconnector contacts Earthing switch contacts Motor of disconnector drive Motor of earthing switch drive Aux. contact block for disconnector and earthing switch		lot lot lot nos set set set set lot lot lot set set set set	1 1 1 2 3 3 3 1 1 1 1 1 1 1 1 1 1 1 1 1		
3.1 3.1.1 3.1.1.1 3.1.2.1 3.1.2.1 3.1.2.2 3.2 3.2.1 3.2.1.2 3.2.1.3 3.2.1.4 3.2.1.2 3.2.1.3 3.2.1.4 3.2.1.5 3.2.2.1 3.2.2.1 3.2.2.2 3.2.2.3 3.2.2.4 3.2.3.1 3.2.3.2 3.2.3.1 3.2.3.4 3.2.3.5 3.2.4	High Voltage GIS equipment For 220 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) For 132 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) Trip coils (four of each type installed) High Voltage AIS equipment For 220 kV equipment 1-ph capacitive voltage transformer 1-ph lighting arrester, including one counter Tension insulator set Suspension insulator set Clamps and fittings (five of of each type installed) For 132 kV circuit breakers Single pole of circuit breaker Driving mechanism single-pole Close coils (four of each type installed) Trip coils (four of each type installed) For 132 kV disconnectors and earthing switches Disconnector contacts Earthing switch contacts Motor of disconnector drive Motor of earthing switch drive Aux. contact block for disconnector and earthing switch For other 132 kV equipment		lot lot lot nos set set set set lot lot lot lot set set set set set set	1 1 1 1 2 3 3 3 1 1 1 1 1 1 1 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1		
3.1 3.1.1 3.1.1.2 3.1.2.1 3.1.2.2 3.2 3.2.1 3.2.1.3 3.2.1.4 3.2.1.3 3.2.1.4 3.2.1.5 3.2.1.4 3.2.1.5 3.2.2.1 3.2.2.1 3.2.2.2 3.2.2.3 3.2.2.4 3.2.3.1 3.2.3.2 3.2.3.3 3.2.3.4 3.2.3.2 3.2.3.3 3.2.3.4 3.2.3.5 3.2.3.4 3.2.3.4 3.2.3.5 3.2.3.4 3.2.3.4 3.2.3.5 3.2.3.4	High Voltage GIS equipment For 220 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) For 132 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) High Voltage AIS equipment For 220 kV equipment 1-ph capacitive voltage transformer 1-ph lighting arrester, including one counter Tension insulator set Suspension insulator set Clamps and fittings (five of of each type installed) For 132 kV circuit breakers Single pole of circuit breaker Driving mechanism single-pole Close coils (four of each type installed) For 132 kV disconnectors and earthing switches Disconnector contacts Earthing switch contacts Motor of disconnector drive Motor of earthing switch drive Aux. contact block for disconnector and earthing switch Aux. contact block for disconnector and earthing switch For other 132 kV equipment 1-ph lighting arrester, including one counter		lot lot lot nos set set set set lot lot lot set set set set set set	1 1 1 2 3 3 3 1 1 1 1 1 1 1 1 1 1 1 1 1		
3.1 3.1.1 3.1.1.2 3.1.2.1 3.1.2.2 3.2 3.2.1 3.2.1.3 3.2.1.4 3.2.1.3 3.2.1.4 3.2.1.5 3.2.2.1 3.2.2.1 3.2.2.3 3.2.2.4 3.2.2.3 3.2.2.4 3.2.3.1 3.2.3.2 3.2.3.3 3.2.3.4 3.2.3.2 3.2.3.3 3.2.3.4 3.2.3.2 3.2.3.3 3.2.3.4 3.2.3.5 3.2.3.4 3.2.3.4	High Voltage GIS equipment For 220 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) For 132 kV GIS Close coils (four of each type installed) Trip coils (four of each type installed) Trip coils (four of each type installed) High Voltage AIS equipment For 220 kV equipment 1-ph capacitive voltage transformer 1-ph lighting arrester, including one counter Tension insulator set Suspension insulator set Clamps and fittings (five of of each type installed) For 132 kV circuit breakers Single pole of circuit breaker Driving mechanism single-pole Close coils (four of each type installed) Trip coils (four of each type installed) For 132 kV disconnectors and earthing switches Disconnector contacts Earthing switch contacts Motor of disconnector drive Motor of earthing switch drive Aux. contact block for disconnector and earthing switch For other 132 kV equipment		lot lot lot nos set set set set lot lot lot lot set set set set set set	1 1 1 1 2 3 3 3 1 1 1 1 1 1 1 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1		

	Substation Package B					
	Kreditanstalt für Wiederaufbau (Nepal Electricity Authority (N					
	Schedule No. I: Plant, and Mandatory Spare Parts		m Abroad	1		
		Cuppilou ilo		-		
ltem	Description	Code	Unit	Quantity	Unit Price	Total Price
		(Country			CIP	CIP
		of origin)				
					(USD)	(USD)
				1	2	3=1x2
3.3	Autotransformers and Power Transformers					
3.3.1	Bushing (one of each type HV/MV/LV/Neutral)					
3.3.1.1	For 220/132/33 kV Autotransformers		lot	2		
	For 220/132 kV Power Transformers		lot	1		
	For 132/33 kV Power Transformers For 33/11 kV Power Transformers	-	lot	1		
3.3.1.4	Transformer oil		lot	1		
2215			lot	1		
3.3.1.5	set of drums with minimum 5% of total oil volume of all transformers		IOL	I		
	installed Air drying agent					
3.3.1.6	sufficient quantity for 5 replacements for all transformers installed		lot	1		
3.4	For MV switchgear					
	For 33 kV switchgear					
	33kV Withdrawable Circuit Breaker with breaker trolley		nos	1		
	33kV Surge arrester		nos	3		
	33kV Fuse (six of each rating)		lot	1		-
5				1 1		-
3.4.2	For 11 kV switchgear	1				
	11kV Withdrawable Circuit Breaker with breaker trollev		nos	2		
	11kV Surge arrester	1	nos	3		
3.4.2.3	11kV Fuse (six of each rating)		lot	1		
	······································					
3.5	For LV Auxiliary Power Supply System					
		1				
3.5.1	For 0.4 kV main switchgear / 220 V DC switchgear / 48 V DC switchgear					
	Incoming Circuit Breaker					
3.5.1.1	5% of each type and rating totally installed but as a minimum 2 unit of each		lot	1		
	type and size					
	Outgoing Circuit Breaker					
3.5.1.2	5% of each type and rating totally installed but as a minimum 2 unit of each		lot	1		
	type and size					
3.5.1.3	Outgoing feeder terminal block (five complete three phase / PE / N blocks of		lot	1		
	each type and size)					
3.5.1.4	Surge arrester		lot	1		
3.5.2	Batteries			_		
3.5.2.1	220 V battery cell Connector		nos	5		
3.5.2.2	48 V battery cell Connector		nos	5		
3.6	For Diesel generator unit (DGU)					
3.6.1	Air filter		set	3		
3.6.2	Oil filter		set	5		
3.6.3	Fuel filter		set	5		
3.6.4	Motor lube oil (three fillings)		lot	1		
3.6.5	Gaskets (two of each type)		lot	1		
27	For protection equipment					
3.7 3.7.1	For protection equipment Line differential protection relay (one of each type)		ect	1		
3.7.1	Transformer differential protection relay (one of each type)	<u>⊦</u>	set set	1		
3.7.2	Busbar differential protection relay decentral field unit (one of each type)		set	1		
3.7.4	Busbar differential protection relay decentral neid drift (one of each type)		set	1		
3.7.5	Overcurrent protection relay (one of each type)		set	1		
3.7.6	HV Bay Control unit (one of each type)		set	1		
3.7.7	Combined protection and bay control for MV switchgear		set	1		<u> </u>
3.7.8	Lockout Relay		set	4		
3.7.9	Trip circuit supervision Relay		set	4		
	CT circuit test terminal block (complete for three phase circuit, ten of each					
3.7.10	type and size)		lot	2		
	VT circuit test terminal block (complete for three phase circuit, ten of each					
3.7.11		1 1	lot	2		

	Substation Package B Kreditanstalt für Wiederaufbau	(KfW)				
	Nepal Electricity Authority (N	ÈA)		-		
	Schedule No. I: Plant, and Mandatory Spare Parts	Supplied fro	m Abroa			
Item	Description	Code	Unit	Quantity	Unit Price	Total Pric
		(Country			CIP	CIP
		of origin)				
				1	(USD) 2	(USD) 3=1x2
					2	0-112
3.8	For SCMS and SCADA system					
0.0.4	Complete set of spare parts for the entire SCMS System of Lekhnath and					
3.8.1	Damauli substations, comprising at minimum 20% of each device applied per system but as a minimum 1 pc of each item		lot	1		
	per system but as a minimum 1 pc of each item					
3.9	For telecommunications system					
	Complete set of spare parts for the entire Telecommunication System of					
3.9.1	Lekhnath and Damauli substations, comprising at minimum 20% of each		lot	1		
	device applied per system but as a minimum 1 pc of each item					
3.10	Metering system					
3.10.1	Meters (one of each type)		nos	2		
3.10.2	Communication equipment (Ethernet switches and Patch panels)		set	2		
3.10.3	GPRS-GSM communication device		set	1		
	For LV Auxiliary System, Protection, Metering and Control Cubicles,			+		
3.11	etc. in General					
	Miniature Circuit Breaker (MCB)	1		1 1		1
3.11.1	10% of each type and rating totally installed but as a minimum 2 units of		lot	1		
	each item					
2 4 4 2	Fuses		1-4	4		
3.11.2	10% of each type and rating totally installed but as a minimum six units of each type and rating		lot	1		
	LV surge arrestors					
3.11.3	10% of each type and rating totally installed but as a minimum two units of		lot	1		
	each type and rating					
	Control Switches, Selector Switches, Push buttons etc.					
3.11.4	5% of each type and configuration totally installed but as a minimum 2 units of each type and size		lot	1		
	Indicating lights					
3.11.5	10% of each type and color totally installed but as a minimum 5 units of		lot	1		
	each type and color					
	Terminal block					
3.11.6	10% of each type and size/rating totally installed but as a minimum: 50 terminals of each type and size up to and including 10 mm2		lot	1		
	10 terminals of each type and size larger than 10 mm2					
3.12	For LV Installation					
2 4 2 4	Small power outlets		1-4	4		
3.12.1	10% of each type and rating installed but as a minimum 10 units of each type and rating		lot	1		
	Power outlets			1		
3.12.2	5% of each type and rating installed but as a minimum 2 units of each type		lot	1		
	and rating					
0.40.0	Junction boxes					
3.12.3	10% of each type and rating installed but as a minimum 5 units of each type and rating		lot	1		
	Lighting Fixtures					
3.12.4	5% of each type and rating installed but as a minimum 2 units of each type		lot	1		
	and rating					
0.40 5	LED modules					
3.12.5	20% of each type and rating installed but as a minimum 10 units of each type and rating		lot	1		
	LED electronic control gear (ECG)			+		
3.12.6	10% of each type and rating installed but as a minimum 5 units of each type		lot	1		
	and rating					
2 4 2	Eiro Brotestion System			┥──┤		
3.13	Fire Protection System			+		
3.13.1	Fire detectors		lot	2		
0.10.1	5% of each type and rating installed but as a minimum 4 units of each type		101	2		
	Fire alarm break glass units			1		
3.13.2	5% of each type and rating installed but as a minimum 4 units of each type		lot	2		
0.40.0	Spare break glass for fire alarm break glass units					
3.13.3	set with 10 break glasses		set	5		

	Substation Package					
	Kreditanstalt für Wiederauf					
	Nepal Electricity Authorit Schedule No. I: Plant, and Mandatory Spare F		mAbroa	4		
	Schedule No. 1. Flant, and Manualory Spare r	ans Supplied Ito				
Item	Description	Code	Unit	Quantity	Unit Price	Total Price
		(Country				
		of origin)			CIP	CIP
		- - /			(USD)	(USD)
				1	2	3=1x2
3.13.4	Fire Alarm horn		set	2		
3.14	For containerised fire fighting pump system					
3.14.1	Air filter		set	3		
3.14.2	Oil filter		set	5		
3.14.3	Fuel filter		set	5		
3.14.4	Motor lube oil (three fillings)		lot	1		
3.14.5 3.15	Gaskets (two of each type)		lot	1		
3.15	For deluges systems and hydrant network Gaskets (two of each type)		lot	1		
5.10.1	Gaskers (INO OF Each Lype)		101			
3.16	For Water supply system					
3.16.1	Valve (one of each size and type)		lot	2		
3.16.2	Gaskets (five of each type)		lot	2		
3.16.3	Water filter		set	5		
3.17	For Airconditioning system					
3.17.1	Gaskets (five of each type)		set	2		
3.17.2	Air filter (three of each type)		set	4		
4.	Special Tools					
4.1	SF6 gas service cart		nos	1		
4.2	SF6 gas filling cart		nos	3		
4.3	Analyser for gas measurement		nos	1		
4.4	Portable SF6 gas leakage detector in a case		nos	3		
4.5	Density guard testing device in a case		nos	1		
4.6	Precision gauge with hose in transport case		nos	1		
4.7	Tool box with torque spanner for GIS (each type if different), etc		set	3		
4.8	SF6 bottle (each type, if different) 40 kg (with gas)		set	6		
4.9	Insulation resistance test set (range 0.5 – 1.0 - 2.5 - 5 - 10 kV)		set	2		
4.10	Calibration instruments for the line type heat detection		set	2		
4.11	Tools and test equipmnet for fore detectors		set	2		
				+		
				-		
				+		
				+		
				+		
	TOTAL (to Schedule No. VI Grand Summary)			1 1		
				1		1
		Nan	ne of Bio	der:		
		Signa	ture of E	Bidder:		

	Substation Package B Kreditanstalt für Wiederaufbau (ł	KfW)			
	Nepal Electricity Authority (NE	A)			
	Schedule No. II: Plant, and Mandatory Spare Parts Supplied fro	om within the	Employer's Cou	untry	
ltom	Description	Unit	Quantity	Unit Drico	Total Drice
Item	Description	Unit	Quantity	Unit Price EXW	Total Price EXW
				(NPR)	(NPR)
			1	2	3=1x2
			•		0 1/12
1	220kV Extension of the 132kV switchyard in Lekhnath				
1	220kV Extension of the 132kV switchyard in Lekinath				
1.1	Extension of existing 132kV Switchyard				
1.1.1	132kV Transformer Bays (E13, E14)				
1.1.1.1	Set of 3-pole circuit breaker	set	2		
1.1.1.2	Sets of 3-pole disconnector with earthing switch	set	4		
1.1.1.3	Set of 3-pole pantograph disconnector	set	2		
1.1.1.4	1-pole current transformer	nos	6		
1.1.1.5	1-pole voltage transformer	nos	6		
1.1.1.6	Gantries for busbar and feeders	lot	1		
<u>1.1.1.7</u> 1.1.1.8	Busbar and feeder conductors Insulators and fittings	lot	1		
	All other necessary equipment and materials to complete the supply and	lot	1		
1.1.1.9	the installation	lot	1		
1.1.2	Transformer AIS equipment and auxiliary system for fast				
1.1.2.1	reconnection of the spare transformer unit Surge arresters for the 220 kV transformer side	500	7		
1.1.2.1	Surge arresters for the 220 kV transformer side	nos	7		
1.1.2.3	Surge arresters for the tertiary (<u>33</u> kV) side	nos	7		
1.1.2.4	Gantries for 220 kV and 132 kV auxiliary busbar	lot	1		
1.1.2.5	OHL conductors for 220 kV and 132 kV auxiliary busbar for fast	lot	1		
	reconnection of the spare transformer unit				
1.1.2.6	220 kV insulators and fittings	lot	1		
1.1.2.7	132 kV insulators and fittings	lot	1		
1.1.2.8	Materials for the interconnection of the auto-transformers tertiaries with the new 33 kV switchgear by means of busbar and cable including facility	lot	1		
1.1.2.9	for fast reconnection of spare transformer All other necessary equipment and materials to complete the supply and the installation	lot	1		
1.1.3	Additional extension and relocation works				
1.1.3.1	All necessary equipment and materials for relocation of existing lighting poles affected by the extension of the 132 kV switchyard	lot	1		
1.1.3.2	All necessary equipment and materials for relocation of two (2) existing lightning protection masts affected by the extension of the 132 kV switchyard	lot	1		
1.1.3.3	All necessary equipment and materials for relocation, within the substation's property, of an out-of-service transformer currently located in front of bay E14	lot	1		
1.2	220/132/33kV Autotransformer				
1.2.1	Single-phase autotransformers 220/132/33 kV 100 MVA/phase, equipped with on-load tap changer	nos	7		
1.2.2	Automatic voltage regulator, including the relevant software and integration in the SCMS	set	2		
1.2.3	Online transformer condition monitoring system, including the relevant software and integration in the SCMS	set	7		
1.2.4	All other necessary equipment and materials to complete the supply and the installation	lot	1		
1.3	220 kV Gas Insulated Switchgear				
1.3.1	Transformer bay (D03, D07) with GIB and SF6/air bushings	set	2		
1.3.2	Local control panel with bay cabling for feeder D03, D07	set	2		
1.3.3	OHL Bay (D04, D06) with GIB and SF6/air bushings	set	2		
<u>1.3.4</u> 1.3.5	Local control panel with bay cabling for feeder D04, D06 Measuring Bay (D05)	set set	2		
1.3.6	Bus Coupler Bay D05	set	1		
	Local control panel with bay cabling for feeder D05 and (D05), including	561			
1.3.7	cable connections to bus bar measuring and bus bar earthing	set	1		
1.3.8	Sensors for partial discharge measurement	lot	1		
1.3.9	Provision (light sensor) for future arc detection	lot	1		
	GIS steel supports for all bays and for GIB's, including wall bushings				
1.3.10	(material from GIS manufacturer for closing the wall openings) Wall boards as specified (typical bay sections, single line diagram and gas	lot	1		
1.3.11	compartment plan, gas density rules, gas temperature pressure curves etc.)	lot	1		
1.3.12	Key box including specified labelled keys and pad locks for 220kV GIS	lot	1		

	Substation Package B Kreditanstalt für Wiederaufbau (K				
	Nepal Electricity Authority (NE/				
	Schedule No. II: Plant, and Mandatory Spare Parts Supplied fro	om within the	Employer's Cou	untry	
Item	Description	Unit	Quantity	Unit Price	Total Pri
				EXW	EXW
				(NPR)	(NPR)
			1	2	3=1x2
4 0 4 0	All other necessary equipment and materials to complete the supply and	1-4			
1.3.13	the installation	lot	1		
1.4	220 kV AIS Equipment				
1.4.1	220kV OHL surge arresters	nos	6		
1.4.2	220kV capacitive voltage transformers	unit	6		
1.4.3	220 kV OHL gantry	lot	1		
1.4.4	220 kV insulators and fittings	lot	1		
4 4 5	All other necessary equipment and materials to complete the supply and	lat	4		
1.4.5	the installation	lot	1		
1.5	33 kV Switchgear				İ
1.5.1	Outgoing feeder to auxiliary transformer (K02, K04)	set	2		
1.5.2	Riser measurement panel (K01, K03)	set	2		
	All other necessary equipment, accessories and materials to complete the				1
1.5.3	supply and the installation	lot	1		
			1	1	1
1.6	Zig Zag Earthing Auxiliary Transformers		1		
	Three-phase zig zag auxiliary transformers 33/0.4 kV, hermetically sealed		1		
1.6.1	type with off load tap changer, each of minimum 630 kVA	nos	2		
1.6.2	Tank mounted surge arresters for the primary (33 kV) side.	unit	6		
	All other necessary equipment and materials to complete the supply and	unit	0		
1.6.3	the installation	lot	1		
4 7	I.V. Auviliany Dower Cumply System				
1.7 1.7.1	LV Auxiliary Power Supply System 0.4 kV main switchgear, metal-clad type	aat	1		
		set	1		
1.7.2	220 V DC switchgear with two bus sections	set			
1.7.3	220 V battery chargers	set	2		
1.7.4	220 V DC batteries of Ni-Cd type, each with a minimum capacity of 600	set	2		
475	Ah (10h discharge rate)		4		
1.7.5	48 V DC switchgear with two bus sections	set	1		-
1.7.6	48 V battery chargers	set	2		
1.7.7	48 V DC batteries of Ni-Cd type, each with a minimum capacity of 150 Ah	set	2		
4 7 0					-
1.7.8	230 V AC UPS System	set	2		
1.7.9	All other necessary equipment and materials to complete the supply and	lot	1		
	the installation				
1.8	Diesel generator unit (DGU)				
	Diesel generator unit, minimum of 50 kVA, in a prefabricated container				
1.8.1	equipped with fire-detection system and exhaust gas evacuation system	set	1		
	including fuel tank				
1.8.2	All other necessary equipment and materials to complete the supply and	lot	1		
1.5.2	the installation		ļ '		
1.9	Protection & Control				
1.9.1	220 kV OHL Protection Terminals <i>incl. POW control</i> and BCU (D04, D06)	set	2		
		351	2		
1.9.2	220kV Bus coupler (D05) and Busbar Protections and BCU	set	1		
1.9.3	300MVA 220 kV side autotransformer protection incl. POW control and	aat	2		
1.9.0	BCU (D03, D07)	set	۷		
1.9.4	300MVA 132kV side autotransformer protection and BCU (E13, E14)	set	2		
	20MVA 33kV side autotransformer bay control and protection BCPU (K01,				
1.9.5	K03) (installed in MV Switchgear)	set	2		
4.0.0	Auxiliary Earthing Tansformer bay control and protection BCPU (K02,				
1.9.6	K04) (installed in MV Switchgear)	set	2		
	Marshalling panel for the transformer control circuits for fast reconnection		-		
1.9.7	of spare transformer	set	2		
	All other necessary equipment and materials to complete the supply and		1		
1.9.8	the installation	lot	1		
	Synchrophasor Measurement Unit (PMU)		1		
1.10	for monitoring voltage and current as defined in the Scope, including	lot	1		
1.10		101			
	software, documentation, cubicles, accessories		1	1	

	Substation Package B				
	Kreditanstalt für Wiederaufbau (I Nepal Electricity Authority (NE				
	Schedule No. II: Plant, and Mandatory Spare Parts Supplied fro		Employer's Cou	untry	
Item	Description	Unit	Quantity	Unit Price	Total Price
nom	Beschption	onit	Quantity	EXW	EXW
				(NPR)	(NPR)
1.11	SCADA and SCMS		1	2	3=1x2
1.11					
	SCADA and SCMS system for new 220/132/33/11 kV Substation including all necessary cabling, cubicles, desks, chairs, equipment and				
1.11.1	materials to complete the supply and the installation, The Contractor shall	set	1		
	ensure that after handing over, a minimum of 50% spare function capacity				
	(hardware and software, number of I/O to be handled by the SCMS)				
	Equipment and material for interfacing with NLDC/ECC				
1.11.2	including all necessary cabling, cubicles, equipment and materials to	set	1		
	complete the supply and the installation Equipment and material for interfacing with Existing Lekhnath 132 kV				
1.11.3	Substation including all necessary cabling, cubicles, equipment and	set	1		
	materials to complete the supply and the installation				
1.12	Telecommunication				
1.14					
1.12.1	SDH Equipment SDH node for FOC connections to the new 220/132/33/11kV GIS Damauli	lot	1		
	Substation and to the existing 132/33/11kV Lekhnath Substation	101			
1.12.2	Fibre optical cables and patch cords	lot	1		
1.12.3	Optical Distribution Frame and accessories	lot	1		
1.12.4	IP-PBX telephony system, including appropriate telephone sets	lot	1		
1.12.5	All other necessary cubicles, software, equipment and materials to complete the supply and the installation	lot	1		
	complete the supply and the installation				
1.13	Metering Meter for 220kV OHL				
1.13.1	Main & Control	set	2		
1.13.2	Meter for 220/132/33 kV autotransformers (220 kV side and 132 kV side)	aat	4		
1.13.2	Main & Control	set	4		
1.13.3	Meter for auxiliary transformers Main & Control	set	4		
4 4 0 4	Communication equipment (Ethernet Switches / Patch Panels / FOs /	1-4	4		
1.13.4	Cables etc)	lot	1		
<u>1.13.5</u> 1.13.6	GPRS-GSM communication device Cabinet	set lot	1		
			1		
1.13.7	Notebook PC including related software for local access for meter reading	set	1		
1.13.8	All other necessary, software, equipment and materials to complete the supply and the installation	lot	1		
1.14	Power and Control Cables				
1.14.1	33 kV Cables, sealing ends, terminals and accessories for33kV auxiliary system including accessories	lot	1		
	LV Power and Control cables and accessories for auxiliary supply,				
1.14.2	protection, control, metering, fire protection, including accessories	lot	1		
1.14.3	All other necessary equipment and materials to complete the supply and	lot	1		
-	the installation				
1.15	Earthing and lightning protection systems	lot	1		
4.40		1-4			
1.16	Lighting and small power system	lot	1		
1.17	Fire Protection system			<u> </u>	
1.17.1	Fire detection system	lot	1		
1.17.2 1.17.3	Portable fire extinguishers Fire fighting system	lot	1		
1.17.3.1	Containerised fire fighting pump system	lot	1		
1.17.3.2	Fire fighting water tank	lot	1		
1.17.3.3 1.17.3.4	Fire fighting water supply pump with well Transformer deluge systems for power transformers	lot set	1 7		
1.17.3.5	Fire hydrant network and interconnection piping	lot	1		
	All accessories necessary for the satisfactory operation of the system but	lot	1		
1.17.3.6	which are not separately listed		-		
1.17.3.6				1	1
1.18 1.18.1	CCTV system Central unit	set	1		
1.18 1.18.1 1.18.2	CCTV system Central unit Control panel	set	1		
1.18 1.18.1	CCTV system Central unit				

	Substation Package B Kreditanstalt für Wiederaufbau (ł				
	Nepal Electricity Authority (NE				
	Schedule No. II: Plant, and Mandatory Spare Parts Supplied fro		Employer's Cou	untry	
				-	
ltem	Description	Unit	Quantity	Unit Price	Total Price
				EXW	EXW
				(NPR)	(NPR)
1 10 0	All other according on the sector is the sector is the sector is a	1-4	1	2	3=1x2
1.18.6	All other necessary equipment and materials to complete the extension	lot	1		
2	Construction of 220/132/33/11 kV substation in Damauli				
0.4	000 kV Orac brandstad Oruštak margi				
2.1	220 kV Gas Insulated Switchgear				
2.1.1	OHL Bays with GIB and SF6/air bushings (D06, D07, D08, D13, D14,	set	6		
2.1.2	Local control panel with bay cabling for feeder (D06, D07, D08, D13, D14,	set	6		
	D15) 220/132kV Transformer Bay with GIB and SF6/air bushings (D09 and				
2.1.3		set	2		
	D12)				
2.1.4	Local control panel with bay cabling for feeder (D09 and D12)	set	2		
2.1.5	Bus Coupler Bays (D05, D16)	set	2		
2.1.6	Local control panel with bay cabling for feeder (D05, D16)	set	2		ļ
2.1.7	Measuring Bays ((D10) and (D11))	set	2		ļ
2.1.8	Busbar Sectionalizers (D10, D11)	set	2		ļ
2.1.9	Local control panel with bay cabling for feeder D10 and D11, including	set	2		
-	cable connections to bus bar measuring and bus bar earthing				
2.1.10	Sensors for partial discharge measurement	lot	1		
2.1.11	Provision (light sensor) for future arc detection	lot	1		
2.1.12	GIS steel supports for all bays and for GIB's, including wall bushings	lot	1		
	(material from GIS manufacturer for closing the wall openings) Wall boards as specified (typical bay sections, single line diagram and gas				
0 4 4 0		let.	4		
2.1.13	compartment plan, gas density rules, gas temperature pressure curves	lot	1		
2.1.14	etc.) Key box including specified labelled keys and pad locks for 220kV GIS	lot	1		
2.1.14	All other necessary equipment and materials to complete the supply and	101	1		-
2.1.15	the installation	lot	1		
2.2	220 kV AIS Equipment				
2.2.1	220kV OHL surge arresters	nos	18		
2.2.2	220kV capacitive voltage transformers	nos	18		
2.2.3	220 kV OHL gantry	lot	1		
2.2.4	220 kV insulators and fittings	lot	1		
	All other necessary equipment and materials to complete the supply and				
2.2.5	the installation	lot	1		
2.3	132 kV Gas Insulated Switchgear				
2.3.1	220/132kV Transformer Bays with cable conections (E02, E06)	set	2		
2.3.2	Local control panel with bay cabling for feeder E02, E06	set	2		
2.3.3	OHL Bays with GIB and SF6/air bushings (E03, E07)	set	2		
2.3.4	Local control panel with bay cabling for feeder E03, E07	set	2		
2.3.5	132/33kV Transformer Bay with GIB and SF6/air bushings (E01, E05)	set	2		
2.3.6	Local control panel with bay cabling for feeder E01, E05	set	2		ļ
2.3.7	Measuring Bay (E04)	set	1		ļ
2.3.8	Bus Coupler E04	set	1		
2.3.9	Local control panel with bay cabling for feeder E04 and (E04), including	set	1		
	cable connections to bus bar measuring and bus bar earthing				ļ
2.3.10	Sensors for partial discharge measurement	lot	1		
2.3.11	Provision (light sensor) for future arc detection GIS steel supports for all bays and for GIB's, including wall bushings	lot	1		
2.3.12		lot	1		
	(material from GIS manufacturer for closing the wall openings) Wall boards as specified (typical bay sections, single line diagram and gas				<u> </u>
2.3.13	compartment plan, gas density rules, gas temperature pressure curves	lot	1		
2.0.10	etc.)	101			
2.3.14	Key box including specified labelled keys and pad locks for 132kV GIS	lot	1		
	All other necessary equipment and materials to complete the supply and				1
2.3.15	the installation	lot	1		
2.4	132 kV AIS Equipment				1
2.4.1	132 kV OHL surge arresters	nos	6		1
2.4.2	132 kV capacitive voltage transformers	nos	6		İ
2.4.3	132 kV OHL gantry	lot	1		
2.4.4	132 kV insulators and fittings	lot	1		
2.4.5	All other necessary equipment and materials to complete the supply and	lot	1		

	Substation Package B Kreditanstalt für Wiederaufbau (K	(fW)			
	Nepal Electricity Authority (NE)				
	Schedule No. II: Plant, and Mandatory Spare Parts Supplied fro	om within the	Employer's Cou	untry	
ltem	Description	Unit	Quantity	Unit Price EXW	Total Price EXW
				(NPR)	(NPR)
			1	2	3=1x2
					-
2.5	Power Transformers				
2.5.1	220/132 Power Transformer				
2.5.1.1	Three-phase power transformer 220/132 kV 50/63 MVA, equipped with on-	nos	2		
0 5 4 0	load tap changer		0		
2.5.1.2 2.5.1.3	line surge arresters for the primary (220 kV) side line surge arresters for the secondary (132 kV) side	nos	6		
	automatic voltage regulator, including the relevant software and	nos	0		
2.5.1.4	integration in the SCMS	set	2		
	All other necessary equipment and materials to complete the supply and				
2.5.1.5	the installation	lot	1		
2.5.2	132/33 kV Power Transformer				
	Three-phase power transformer 132/33kV 24/30 MVA, equipped with on-				
2.5.2.1	load tap changer	nos	2		
2.5.2.2	Line surge arresters for the secondary (132 kV) side	nos	6		
2.5.2.3	Line surge arresters for the secondary (33 kV) side	nos	6		
	Automatic voltage regulator, including the relevant software and		-		
2.5.2.4	integration in the SCMS	set	2		
0 5 0 5	All other necessary equipment and materials to complete the supply and	1-4			
2.5.2.5	the installation	lot	1		
2.5.3	33/11 kV Power Transformer				
2.5.3.1	Three-phase power transformer 33/11kV 6/8 MVA, equipped with on-load	nos	2		
	tap changer	1103			
2.5.3.2	Line surge arresters for the secondary (33 kV) side	nos	6		
2.5.3.3	Line surge arresters for the secondary (11 kV) side	nos	6		
2.5.3.4	Automatic voltage regulator, including the relevant software and	set	2		
2.0.01.	integration in the SCMS		-		
2.5.3.5	All other necessary equipment and materials to complete the supply and	lot	1		
	the installation				
	MV/ Motol Clad AIC Switchman				
2.6 2.6.1	MV Metal Clad AIS Switchgear				
2.6.1.1	33 kV Switchgear Incomers for 132/33kV transformer connection (J02, J11)	200	2		
2.6.1.1	Outgoing feeders (J04, J10)	nos	2		
2.6.1.3	Outgoing feeders (304, 310) Outgoing feeder 33/11 kV transformer (J03, J12)	nos nos	2		
2.6.1.4	Outgoing feeders to auxiliary transformer (J05, J09)	nos	2		
2.6.1.5	Bus tie (J07)	nos	1		
2.6.1.6	Riser measurement panel (J08)	nos	1		1
2.6.1.7	Measurement panel (J06)	nos	1		
	All other necessary equipment, accessories and materials to complete the				
2.6.1.8	supply and the installation	lot	1		
2.6.2	11 kV Switchgear				
2.6.2.1	Incomers for 33/11kV transformer connection (K03, K08)	nos	2		
2.6.2.2	Outgoing feeders (K04, K05, K09, K11, K12)	nos	5		
2.6.2.3	Bus tie (K07)	nos	1		
2.6.2.4	Riser measurement panel (K06)	nos	1		
2.6.2.5	Measurement panel (K10)	nos	1		
2.6.2.6	All other necessary equipment, accessories and materials to complete the supply and the installation	lot	1		
2.7	Auviliant Transformers				
	Auxiliary Transformers Three-phase auxiliary transformers 33/0.4 kV, hermetically sealed type				
Z .1	The phase auxiliary liansionners 55/0.4 kV, nermetically sealed type	nos	2		
2.7.1	with off load tap changer, each of minimum 620 W/A	1100			
2.7.1	with off load tap changer, each of minimum 630 kVA		6		
	with off load tap changer, each of minimum 630 kVA Tank mounted surge arresters for the primary (33 kV) side. All other necessary equipment and materials to complete the supply and	nos	6		

	Substation Package B Kreditanstalt für Wiederaufbau (K				
	Nepal Electricity Authority (NE	A)			
	Schedule No. II: Plant, and Mandatory Spare Parts Supplied fro	om within the	Employer's Cou	intry	
Item	Description	Unit	Quantity	Unit Price	Total Pric
Item	Description	Unit	Quantity	EXW	EXW
				(NPR)	(NPR)
			1	2	3=1x2
2.8	LV Auxiliary Power Supply System				
2.8.1	0.4 kV main switchgear, metal-clad type	set	1		
2.8.2	220 V DC switchgear with two bus sections	set	1		
2.8.3	220 V battery chargers 220 V DC batteries of Ni-Cd type, each with a minimum capacity of 600	set	2		
2.8.4	Ah (10h discharge rate)	set	2		
2.8.5	48 V DC switchgear with two bus sections	set	1		
2.8.6	48 V battery chargers	set	2		
2.8.7	48 V DC batteries of Ni-Cd type, each with a minimum capacity of 150 Ah	set	2		
2.8.8	230 V AC UPS System	set	2		
2.8.9	All other necessary equipment and materials to complete the supply and	lot	1		
	the installation	101			
	Discal conceptor unit (DOII)				
2.9	Diesel generator unit (DGU) Diesel generator unit, minimum of 100 kVA, in a prefabricated container				
2.9.1	equipped with fire-detection system and exhaust gas evacuation system	set	1		
2.0.1	including fuel tank	301			
	All other necessary equipment and materials to complete the supply and				
2.9.2	the installation	lot	1		
2.10	Protection & Control				
2.10.1	220 kV OHL Protection Terminals <i>incl. POW control</i> and BCU (D06, D07,	set	6		
	D08, D13, D14, D15)		-		
2.10.2	220kV Bus-sectionaliser and Busbar protection and BCU (D10, D11)	set	2		
2.10.3	220kV Bus-coupler and Busbar protection (D05, D16) 50/63 MVA 220/132 kV Transformer 220 kV side protection and BCU	set	2		
2.10.4	(D09, D12)	set	2		
	50/63 MVA 220/132/ kV Transformer 132 kV side protection and BCU				
2.10.5	(E02. E06)	set	2		
2.10.6	132 kV OHL Protection Terminals and BCU (E03, E07)	set	2		
2.10.7	132kV Bus-coupler and Busbar protections and BCU (E04)	set	1		
2.10.8	132/33kV 24/30 MVA Transformer feeder protection 132 kV side and BCU	set	2		
2.10.0	(E01, E05)	361	2		
	132/33kV 24/30 MVA Transformer feeder bay control and protection				
2.10.9	(BCPU) 33 kV side (J02, J09)	set	2		
	(installed in 33 kV switchgear) 33kV Bus-coupler bay control and protection (BCPU) (J07)				
2.10.10	(installed in 33 kV switchgear)	set	1		
2.10.11	33kV Feeder bay control and protection (BCPU) (J04, J08)	set	2		
2.10.11	33/11kV 8/10MVA Transformer feeder bay control and protection (BCPU)	501	2		
2.10.12	33 kV side (J03, J10)	set	2		
	(installed in 33 kV switchgear)				
2.10.13	33/11kV 8/10MVA Transformer feeder protection 11 kV side (K03, K08)	set	2		
2.10.13	(installed in 11 kV switchgear)	301	۷		
o (o · · ·	11kV Feeder bay control and protection (BCPU) (K04, K05, K11, K12,				
2.10.14	K13, K14)	set	5		
	(installed in 11 kV switchgear) 11kV Auxiliary Transformer Feeder bay control and protection (BCPU)				
2.10.15	(K06, K10)	set	2		
2.10.10	(NO0, NTO) (installed in 11 kV switchgear)	301	۷		
2.10.16	11kV Bus-coupler protection (K07)	set	1		
	All other necessary equipment and materials to complete the supply and				
2.10.17	the installation	lot	1		
	Synchrophasor Measurement Unit (PMU)				
2.11	for monitoring voltage and current as defined in the Scope, including	set	1		
	software, documentation, cubicles, accessories				
2 4 2	SCADA and SCMS				
2.12	SCADA and SCMS				
	SCADA and SCMS system for new 220/132/33/11 kV Substation				
	including all necessary cabling, cubicles, desks, chairs, equipment and				
2.12.1	materials to complete the supply and the installation, The Contractor shall	lot	1		
	ensure that after handing over, a minimum of 50% spare function capacity				
	(hardware and software, number of I/O to be handled by the SCMS)				

	Substation Package B Kreditanstalt für Wiederaufbau (/	(fW)			
	Nepal Electricity Authority (NE				
	Schedule No. II: Plant, and Mandatory Spare Parts Supplied fro		Employer's Cou	untry	
Item	Description	Unit	Quantity	Unit Price EXW	Total Price EXW
				(NPR)	(NPR)
			1	2	3=1x2
	Equipment and material for interfacing with NLDC/ECC				
2.12.2	including all necessary cabling, cubicles, equipment and materials to	lot	1		
	complete the supply and the installation				
0 40 0	Equipment and material for interfacing with future New Damauli 400 kV	1-4			
2.12.3	Substation including all necessary cabling, cubicles, equipment and materials to complete the supply and the installation	lot	1		
2.13	Telecommunication				
	SDH Equipment				
	SDH node for FOC connections of new 220 kV GIS Lekhnath Substation,				
2.13.1	to	lot	1		
	Tanahu HPP, 220 kV Bharatpur Substation, Old Damauli and 132 kV				
	Bharatpur. Fibre optical cables, including approach cable from splicing box to SDH				
2.13.2	equipment and patch cords	lot	1		
2.13.3	Optical Distribution Frame and accessories	lot	1		
2.13.4	IP-PBX telephony system, including appropriate telephone sets	lot	1		
2.13.5	All other necessary cubicles, software, equipment and materials to	lot	1		
2.10.0	complete the supply and the installation	101			
2.14	Metering				
	Meter for 220kV OHL				
2.14.1	Main & Control	set	6		
2.14.2	Meter for 132 OHL	set	2		
2.14.2	Main & Control	001	2		
2.14.3	Meter for 220/132 kV Transformers, (220 kV side and 132 kV side),	set	4		
	Main & Control Meter for 132/33 kV Transformers, 132 kV side and 33 kV side),				
2.14.4	Main & Control	set	4		
2.14.5	Meter for 33/11 kV Transformers, (33 kV side and 11 kV side),	aat	4		
2.14.0	Main & Control	set	4		
2.14.6	Meter for 33 kV Feeders	set	2		
-	Main & Control Meter for 11 kV Feeders				
2.14.7	Main & Control	set	5		
0.44.0	Meter for auxiliary transformers				
2.14.8	Main & Control	set	2		
2.14.9	Communication equipment (Ethernet Switches / Patch Panels / FOs /	lot	1		
	Cables etc)				
<u>2.14.10</u> 2.14.11	GPRS-GSM communication device Cabinet	lot lot	1		
		101			
2.14.12	Notebook PC including related software for local access for meter reading	set	1		
2.14.13	All other necessary, software, equipment and materials to complete the	lot	1		
2.17.10	supply and the installation	101	1		
0.45	Power and Control Coblec				
2.15	Power and Control Cables HV cable systems comprising 132 kV XLPE cables for the connection				
2.15.1	between the secondary windings of 220/132 kV transformers and the	lot	1		
	132 kV switchgear				
	MV cable systems comprising 33 kV XLPE cables for the connection				
2.15.2	between secondary windings of 132/33 kV transformers and 33 kV	lot	1		
	switchgear				
2.15.3	MV cable systems comprising 33 kV XLPE cables for the connection	lot	1		
	between 33 kV switchgear and 33/11 kV transformers MV cable systems comprising 33 kV XLPE cables for the connection		+	L	
2.15.4	between 33kV switchgear and auxiliary transformers	lot	1		
	MV cable systems comprising 11 kV XLPE cables for the connection		1		
2.15.5	between secondary windings of 33/11 kV transformers and 11 kV	lot	1		
	switchgear				
0.45.0	MV cable systems comprising 11 kV XLPE cables for the connection of	1.1			
2.15.6	three 11 kV feeders between between 11 kV switchgear and distribution	lot	1		
	OHL pole location on the north side of the substation towards the river LV Power and Control cables and accessories for auxiliary supply,				
2.15.7		lot	1		

2.15.8 2.16 2.17 2.18 2.18.1 2.18.2 2.18.3 2.18.3.1 2.18.3.2 2.18.3.3 2.18.3.4 2.18.3.5 2.18.3.5 2.18.3.6 2.19 2.19.1	Kreditanstalt für Wiederaufbau (K Nepal Electricity Authority (NE/ Schedule No. II: Plant, and Mandatory Spare Parts Supplied fro Description Description All other necessary equipment and materials to complete the supply and the installation Earthing and lightning protection systems Lighting and small power system Fire Protection system Portable fire extinguishers Fire fighting system Containerised fire fighting pump system Fire fighting water tank Fire fighting water supply pump with well Transformer deluge systems for power transformers Fire hydrant network and interconnection piping	A)	Employer's Con Quantity 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Unit Price EXW (NPR) 2	Total Pric EXW (NPR) 3=1x2
2.15.8 2.16 2.17 2.18 2.18.1 2.18.2 2.18.3 2.18.3.1 2.18.3.2 2.18.3.2 2.18.3.2 2.18.3.3 2.18.3.4 2.18.3.5 2.18.3.6 2.18.3.6 2.19 2.19.1	Description All other necessary equipment and materials to complete the supply and the installation Earthing and lightning protection systems Lighting and small power system Fire Protection system Fire detection system Portable fire extinguishers Fire fighting system Containerised fire fighting pump system Fire fighting water tank Fire fighting water supply pump with well Transformer deluge systems for power transformers	Unit lot lot lot lot lot	Quantity	Unit Price EXW (NPR)	EXW (NPR)
2.15.8 2.16 2.17 2.18 2.18.1 2.18.3 2.18.3.1 2.18.3.2 2.18.3.3 2.18.3.3 2.18.3.4 2.18.3.5 2.18.3.6 2.18.3.6 2.19 2.19 2.19.1	All other necessary equipment and materials to complete the supply and the installation Earthing and lightning protection systems Lighting and small power system Fire Protection system Fire detection system Portable fire extinguishers Fire fighting system Containerised fire fighting pump system Fire fighting water tank Fire fighting water supply pump with well Transformer deluge systems for power transformers	lot lot lot lot		EXW (NPR)	EXW (NPR)
2.15.8 2.16 2.17 2.18 2.18.1 2.18.3 2.18.3.1 2.18.3.2 2.18.3.3 2.18.3.3 2.18.3.4 2.18.3.5 2.18.3.6 2.18.3.6 2.19 2.19 2.19.1	All other necessary equipment and materials to complete the supply and the installation Earthing and lightning protection systems Lighting and small power system Fire Protection system Fire detection system Portable fire extinguishers Fire fighting system Containerised fire fighting pump system Fire fighting water tank Fire fighting water supply pump with well Transformer deluge systems for power transformers	lot lot lot lot		EXW (NPR)	EXW (NPR)
2.15.8 2.16 2.17 2.18 2.18.1 2.18.2 2.18.3 2.18.3.1 2.18.3.2 2.18.3.3 2.18.3.4 2.18.3.5 2.18.3.5 2.18.3.6 2.19 2.19 2.19.1	the installation Earthing and lightning protection systems Lighting and small power system Fire Protection system Portable fire extinguishers Fire fighting system Containerised fire fighting pump system Fire fighting water tank Fire fighting water supply pump with well Transformer deluge systems for power transformers	lot lot lot	1 1 1	(NPR)	(NPR)
2.15.8 2.16 2.17 2.18 2.18.1 2.18.2 2.18.3 2.18.3.1 2.18.3.2 2.18.3.3 2.18.3.4 2.18.3.5 2.18.3.5 2.18.3.6 2.19 2.19 2.19.1	the installation Earthing and lightning protection systems Lighting and small power system Fire Protection system Portable fire extinguishers Fire fighting system Containerised fire fighting pump system Fire fighting water tank Fire fighting water supply pump with well Transformer deluge systems for power transformers	lot lot lot	1 1 1	2	
2.15.8 2.16 2.17 2.18 2.18.1 2.18.2 2.18.3 2.18.3.1 2.18.3.2 2.18.3.3 2.18.3.4 2.18.3.5 2.18.3.5 2.18.3.6 2.19 2.19 2.19.1	the installation Earthing and lightning protection systems Lighting and small power system Fire Protection system Portable fire extinguishers Fire fighting system Containerised fire fighting pump system Fire fighting water tank Fire fighting water supply pump with well Transformer deluge systems for power transformers	lot lot lot	1		
2.16 2.17 2.18 2.18.1 2.18.2 2.18.3 2.18.3.1 2.18.3.2 2.18.3.3 2.18.3.3 2.18.3.4 2.18.3.5 2.18.3.6 2.19 2.19.1	Earthing and lightning protection systems Lighting and small power system Fire Protection system Fire detection system Portable fire extinguishers Fire fighting system Containerised fire fighting pump system Fire fighting water tank Fire fighting water supply pump with well Transformer deluge systems for power transformers	lot lot lot	1		
2.17 2.18 2.18.1 2.18.2 2.18.3 2.18.3.1 2.18.3.2 2.18.3.3 2.18.3.4 2.18.3.5 2.18.3.5 2.18.3.6 2.19.1	Lighting and small power system Fire Protection system Fire detection system Portable fire extinguishers Fire fighting system Containerised fire fighting pump system Fire fighting water tank Fire fighting water supply pump with well Transformer deluge systems for power transformers	lot lot lot	1		
2.17 2.18 2.18.1 2.18.2 2.18.3 2.18.3.1 2.18.3.2 2.18.3.3 2.18.3.3 2.18.3.4 2.18.3.5 2.18.3.5 2.18.3.6 2.19.1	Lighting and small power system Fire Protection system Fire detection system Portable fire extinguishers Fire fighting system Containerised fire fighting pump system Fire fighting water tank Fire fighting water supply pump with well Transformer deluge systems for power transformers	lot lot lot	1		
2.18 2.18.1 2.18.2 2.18.3 2.18.3.1 2.18.3.2 2.18.3.3 2.18.3.4 2.18.3.5 2.18.3.6 2.19.1	Fire Protection system Fire detection system Portable fire extinguishers Fire fighting system Containerised fire fighting pump system Fire fighting water tank Fire fighting water supply pump with well Transformer deluge systems for power transformers	lot lot			
2.18 2.18.1 2.18.2 2.18.3 2.18.3.1 2.18.3.2 2.18.3.3 2.18.3.4 2.18.3.5 2.18.3.6 2.19.1	Fire Protection system Fire detection system Portable fire extinguishers Fire fighting system Containerised fire fighting pump system Fire fighting water tank Fire fighting water supply pump with well Transformer deluge systems for power transformers	lot lot			1
2.18.1 2.18.2 2.18.3 2.18.3.1 2.18.3.2 2.18.3.3 2.18.3.4 2.18.3.5 2.18.3.6 2.18.3.6 2.19.1	Fire detection system Portable fire extinguishers Fire fighting system Portainerised fire fighting pump system Containerised fire fighting pump system Pire fighting water tank Fire fighting water supply pump with well Pire fighting systems for power transformers	lot	1		
2.18.1 2.18.2 2.18.3 2.18.3.1 2.18.3.2 2.18.3.3 2.18.3.3 2.18.3.4 2.18.3.5 2.18.3.6 2.18.3.6 2.19 2.19 2.19.1	Fire detection system Portable fire extinguishers Fire fighting system Portainerised fire fighting pump system Containerised fire fighting pump system Pire fighting water tank Fire fighting water supply pump with well Pire fighting systems for power transformers	lot	1		
2.18.2 2.18.3 2.18.3.1 2.18.3.2 2.18.3.3 2.18.3.3 2.18.3.4 2.18.3.5 2.18.3.6 2.19 2.19.1	Portable fire extinguishers Fire fighting system Containerised fire fighting pump system Fire fighting water tank Fire fighting water supply pump with well Transformer deluge systems for power transformers				
2.18.3.1 2.18.3.2 2.18.3.3 2.18.3.4 2.18.3.5 2.18.3.6 2.18.3.6 2.19 2.19.1	Containerised fire fighting pump system Fire fighting water tank Fire fighting water supply pump with well Transformer deluge systems for power transformers	lot	1		
2.18.3.2 2.18.3.3 2.18.3.4 2.18.3.5 2.18.3.6 2.19.1	Fire fighting water tank Fire fighting water supply pump with well Transformer deluge systems for power transformers	lot			
2.18.3.3 2.18.3.4 2.18.3.5 2.18.3.6 2.18.3.6 2.19 2.19.1	Fire fighting water supply pump with well Transformer deluge systems for power transformers		1		
2.18.3.4 2.18.3.5 2.18.3.6 2.19 2.19.1	Transformer deluge systems for power transformers	lot	1		
2.18.3.5 2.18.3.6 2.19 2.19.1		lot	1		
2.18.3.6 2.19 2.19.1	Fire hydrant network and interconnection piping	set	6		ļ
2.18.3.0 2.19 2.19.1		lot	1	ļ	
2.19 2.19.1	All accessories necessary for the satisfactory operation of the system but	lot	1		
2.19.1	which are not separately listed				
2.19.1	CCTV sustan				
	CCTV system Central unit	aat	1		
2 1 0 2		set	1		
	Control panel Monitor	set	2		
	Indoor Camera	set lot	1		
	Outdoor Camera	lot	1		
	All other necessary equipment and materials to complete the extension	lot	1		
2.10.0		101	•		
3	Mandatory Spare Parts				
	High Voltage GIS equipment				
	For 220 kV GIS				
3.1.1.1	Close coils (four of each type installed)	lot	1		
3.1.1.2	Trip coils (four of each type installed)	lot	1		
	-				
	For 132 kV GIS				
3.1.2.1	Close coils (four of each type installed)	lot	1		
3.1.2.2	Trip coils (four of each type installed)	lot	1		
3.2	High Voltage AIS equipment				
	For 220 kV equipment				
	1-ph capacitive voltage transformer	nos	2		
	1-ph lighting arrester, including one counter	nos	3	ļ	
	Tension insulator set	set	3		
	Suspension insulator set	set	3	ļ	
3.2.1.5	Clamps and fittings (five of of each type installed)	set	1		
3.2.2	For 122 kV airouit brookers				
	For 132 kV circuit breakers Single pole of circuit breaker	oot	1		
	Driving mechanism single-pole	set set	1		
	Close coils (four of each type installed)	lot	1		
	Trip coils (four of each type installed)	lot	1		
3.2.1.4		101	· ·		
3.2.2.4	For 132 kV disconnectors and earthing switches				
	Disconnector contacts	set	2		
3.2.3	Earthing switch contacts	set	2		
3.2.3 3.2.3.1		set	1		l
3.2.3 3.2.3.1 3.2.3.2	Motor of disconnector drive	set	1		
3.2.3 3.2.3.1 3.2.3.2 3.2.3.3					(
3.2.3 3.2.3.1 3.2.3.2 3.2.3.3 3.2.3.4	Motor of disconnector drive	set	1		
3.2.3 3.2.3.1 3.2.3.2 3.2.3.3 3.2.3.4 3.2.3.5	Motor of disconnector drive Motor of earthing switch drive Aux. contact block for disconnector and earthing switch	set	1		
3.2.3 3.2.3.1 3.2.3.2 3.2.3.3 3.2.3.4 3.2.3.5 3.2.3.5 3.2.4	Motor of disconnector drive Motor of earthing switch drive	set nos	1		

	Substation Package B Kreditanstalt für Wiederaufbau (I	KfW)			
	Nepal Electricity Authority (NE		Employed Or		
	Schedule No. II: Plant, and Mandatory Spare Parts Supplied free	om within the	Employer's Cou	intry	
ltem	Description	Unit	Quantity	Unit Price EXW	Total Price EXW
				(NPR)	(NPR)
3.2.4.3	Puononaian inculator oot	aat	1 5	2	3=1x2
3.2.4.3	Suspension insulator set Clamps and fittings (ten of of each type installed)	set set	5		
0.2.4.4		301	1		
3.3	Autotransformers and Power Transformers				
3.3.1	Bushing (one of each type HV/MV/LV/Neutral)	-	-		
3.3.1.1	For 220/132/33 kV Autotransformers	lot	2		
3.3.1.2 3.3.1.3	For 220/132 kV Power Transformers For 132/33 kV Power Transformers	lot lot	1		
3.3.1.4	For 33/11 kV Power Transformers	lot	1		
3.3.1.5	Transformer oil set of drums with minimum 5% of total oil volume of all transformers	lot	1		
	installed Air drying agent				
3.3.1.6	sufficient quantity for 5 replacements for all transformers installed	lot	1		
3.4	For MV switchgear				
3.4.1	For 33 kV switchgear				
3.4.1.1 3.4.1.2	33kV Withdrawable Circuit Breaker with breaker trolley 33kV Surge arrester	nos	1 3		
3.4.1.3	33kV Fuse (six of each rating)	lot	1		
3.4.2	For 11 kV switchgear				
3.4.2.1	11kV Withdrawable Circuit Breaker with breaker trolley	nos	2		
3.4.2.2	11kV Surge arrester	nos	3		
3.4.2.3	11kV Fuse (six of each rating)	lot	1		
3.5	For LV Auxiliary Power Supply System				
3.5.1	For 0.4 kV main switchgear / 220 V DC switchgear / 48 V DC switchgear				
3.5.1.1	Incoming Circuit Breaker 5% of each type and rating totally installed but as a minimum 2 unit of each type and size	lot	1		
3.5.1.2	Outgoing Circuit Breaker 5% of each type and rating totally installed but as a minimum 2 unit of each type and size	lot	1		
3.5.1.3	Outgoing feeder terminal block (five complete three phase / PE / N blocks of each type and size)	lot	1		
3.5.1.4	Surge arrester	lot	1		
	Pattering.		 		
3.5.2 3.5.2.1	Batteries 220 V battery cell Connector	noc	5		
3.5.2.1	48 V battery cell Connector	nos	5		
3.6	For Diesel generator unit (DGU)				
3.6.1	Air filter	set	3		
3.6.2 3.6.3	Oil filter Fuel filter	set set	5 5		
3.6.4	Motor lube oil (three fillings)	lot	1		
3.6.5	Gaskets (two of each type)	lot	1		
3.7	For protection equipment		1		
3.7.1	Line differential protection relay (one of each type)	set	1		
3.7.2	Transformer differential protection relay (one of each type)	set	1		
3.7.3	Busbar differential protection relay decentral field unit (one of each type)	set	1		
3.7.4 3.7.5	Busbar differential protection relay entral unit (one of each type) Overcurrent protection relay (one of each type)	set	1		
3.7.5	HV Bay Control unit (one of each type)	set set	1		
3.7.7	Combined protection and bay control for MV switchgear	set	1		
3.7.8	Lockout Relay	set	4		
3.7.9	Trip circuit supervision Relay	set	4		
3.7.10	CT circuit test terminal block (complete for three phase circuit, ten of each type and size)	lot	2		
3.7.11	VT circuit test terminal block (complete for three phase circuit, ten of each type and size)	lot	2		

	Substation Package B Kreditanstalt für Wiederaufbau (I	KfW)			
	Nepal Electricity Authority (NE				
	Schedule No. II: Plant, and Mandatory Spare Parts Supplied fro	om within the	Employer's Cou	untry	
	1				
Item	Description	Unit	Quantity	Unit Price	Total Price
				EXW	EXW
				(NPR)	(NPR)
			1	2	3=1x2
2.0					
3.8	For SCMS and SCADA system				
201	Complete set of spare parts for the entire SCMS System of Lekhnath and Damauli substations, comprising at minimum 20% of each device applied	lat	1		
3.8.1		lot	I		
	per system but as a minimum 1 pc of each item				
3.9	For tale communications system				
3.9	For telecommunications system Complete set of spare parts for the entire Telecommunication System of				
3.9.1	Lekhnath and Damauli substations, comprising at minimum 20% of each	lot	1		
5.9.1	device applied per system but as a minimum 1 pc of each item	101	ļ		
	device applied per system but as a minimum 1 pc of each item				
3.10	Motoring system				
<u>3.10</u> 3.10.1	Metering system Meters (one of each type)	nos	2		
3.10.1	Communication equipment (Ethernet switches and Patch panels)	set	2		
3.10.2 3.10.3	GPRS-GSM communication device	set	1		
5.10.3		501			
	For LV Auxiliary System, Protection, Metering and Control Cubicles,		+		
3.11	etc. in General				
	Miniature Circuit Breaker (MCB)		+		
3.11.1	10% of each type and rating totally installed but as a minimum 2 units of	lot	1		
0.11.1	each item	101			
	Fuses				
3.11.2	10% of each type and rating totally installed but as a minimum six units of	lot	1		
0.11.2	each type and rating	101	1		
	LV surge arrestors				
3.11.3	10% of each type and rating totally installed but as a minimum two units of	lot	1		
5.11.5	each type and rating	101	1		
	Control Switches, Selector Switches, Push buttons etc.				
3.11.4	5% of each type and configuration totally installed but as a minimum 2	lot	1		
5.11.4	units of each type and size	101	1		
	Indicating lights				
3.11.5	10% of each type and color totally installed but as a minimum 5 units of	lot	1		
0.11.0	each type and color	101			
	Terminal block				
	10% of each type and size/rating totally installed but as a minimum:				
3.11.6	50 terminals of each type and size up to and including 10 mm2	lot	1		
	10 terminals of each type and size ap to and moduling to min2				
3.12	For LV Installation				
	Small power outlets		1		
3.12.1	10% of each type and rating installed but as a minimum 10 units of each	lot	1		
	type and rating	101			
	Power outlets		1		
3.12.2	5% of each type and rating installed but as a minimum 2 units of each	lot	1		
	type and rating	101			
	Junction boxes		1		
3.12.3	10% of each type and rating installed but as a minimum 5 units of each	lot	1		
	type and rating	101			
	Lighting Fixtures		1		1
3.12.4	5% of each type and rating installed but as a minimum 2 units of each	lot	1		
	type and rating	101			
	LED modules		1		
3.12.5	20% of each type and rating installed but as a minimum 10 units of each	lot	1		
	type and rating				
	LED electronic control gear (ECG)		1		1
3.12.6	10% of each type and rating installed but as a minimum 5 units of each	lot	1		
	type and rating	101			
3.13	Fire Protection System				
	Fire detectors				
3.13.1	5% of each type and rating installed but as a minimum 4 units of each	lot	2		
	type		_		
	Fire alarm break glass units		1		
3.13.2	5% of each type and rating installed but as a minimum 4 units of each	lot	2		
	type	101	<u> </u>		
	Spare break glass for fire alarm break glass units		1		1
3.13.2	set with 10 break glasses	set	5		

	Substation Package Kreditanstalt für Wiederaufb				
	Nepal Electricity Authority Schedule No. II: Plant, and Mandatory Spare Parts Supplie		Employor's Cou	intry	
	Schedule No. II. Flant, and Mandatory Spare Farts Supplie		Employer's Cot	intry	
Item	Description	Unit	Quantity	Unit Price	Total Price
				EXW	EXW
				(NPR)	(NPR)
			1	2	3=1x2
3.14	For containerised fire fighting pump system				
3.14.1	Air filter	set	3		
3.14.2	Oil filter	set	5		
3.14.3	Fuel filter	set	5		
3.14.4	Motor lube oil (three fillings)	lot	1		
3.14.5	Gaskets (two of each type)	lot	1		
3.15	For deluges systems and hydrant network				
3.15.1	Gaskets (two of each type)	lot	1		
3.16	For Water supply system				
3.16.1	Valve (one of each size and type)	lot	2		
3.16.2	Gaskets (five of each type)	lot	2		
3.16.3	Water filter	set	5		
3.17	For Airconditioning system				
3.17.1	Gaskets (five of each type)	set	2		
3.17.2	Air filter (three of each type)	set	4		
4.	Special Tools				
4.1	SF6 gas service cart	nos	1		
4.2	SF6 gas filling cart	nos	3		
4.3	Analyser for gas measurement	nos	1		
4.4	Portable SF6 gas leakage detector in a case	nos	3		
4.5	Density guard testing device in a case	nos	1		
4.6	Precision gauge with hose in transport case	nos	1		
4.7	Tool box with torque spanner for GIS (each type if different), etc	set	3		
4.8	SF6 bottle (each type, if different) 40 kg (with gas)	set	6		
4.9	Insulation resistance test set (range 0.5 –1.0 - 2.5 - 5 - 10 kV)	set	2		
4.10	Calibration instruments for the line type heat detection	set	2		
4.11	Tools and test equipmnet for fore detectors	set	2		
	TOTAL (to Schedule No. VI Grand Summary)				
	,				
		Name of Bidde	er:		
		Signature of Bid	der:		

	Substation Package B Kreditanstalt für Wiederaufbau	(KfW)			
	Nepal Electricity Authority (N	· /			
	Schedule No. III: Design Se				
ltem	Description	Unit	Quantity	Unit Price	Total Price
				(USD)	(USD)
			1	2	3=1x2
			_		
1	Construction of 220kV Extension of the 132kV switchyard in Lekhnath				
1.1	Electrical Works	lot	1		
1.1.1	Electrical System Design	lot	1		
1.1.2	Protection system design including PMU and metering	lot	1		
1.1.3	SCADA and SCMS design				
1.1.3.1	SCADA and SCMS system for new 220 kV Substation	lot	1		
1.1.3.2	Design for interfacing with NLDC/ECC	lot	1		
1.1.3.3	Design for interfacing with Existing Lekhnath 132 kV Substation	lot	1		
1.1.4	Telecommunication design	lot	1		
	Electical installation design,				
1.1.5	including power and control cable systems, earthing and lightning	lot	1		
1.1.5	protection systems, lighting and small power system, fire detection system	101	'		
	protection systems, lighting and small power system, life detection system				
1.1.6	Other design items				
1.1.6.1	Earthing resistance test, earthing study and earthing system test	lot	1		
1.1.6.2	Insulation Coordination Study	lot	1		
1.1.6.3	Protection Settings Study and Adjustments	lot	1		
1.1.6.4	132 kV Cable System Studies	lot	1		
1.1.6.5	Transport study for large and heavy equipment	lot	1		
4.0					<u> </u>
1.2	Civil Works	1.4			
1.2.1	Topographical surveys soil investigations	lot	1		
1.2.2	Document Preparation and Submission for Permits	lot	1		
1.2.3	Building design	lot	1		
1.2.4 1.2.5	Transformer and equipment foundation design Design of channels, ducts etc. for cables	lot lot	1		
1.2.5	Design of roads, paving, landscaping, fencing, gates		1		
1.2.7	Design of roads, paving, landscaping, lencing, gates Design of site preparation, leveling and compacting, temporary facilities	lot			
1.2.7		lot	1		
1.2.0	Design of water supply system	lot	1		
1.2.10	Design of drainage and sewage systems Design of air-conditioning, ventilation and heating systems	lot lot	1		
1.2.10	Design of overhead Traveling Crane	lot	1		
1.2.12	Design of fire protection system	lot	1		
1.2.12		101	-		
2	Construction of 220/132/33/11 kV Substation in Damauli				
2.1	Electrical Works	lot	1		
2.1.1	Electrical System Design	lot	1		
2.1.2	Protection system design including PMU and metering	lot	1		
	ISCADA and SCMS design				
2.1.3	SCADA and SCMS design				
2.1.3.1	SCADA and SCMS system for new 220 kV Substation	lot	1		
2.1.3.1 2.1.3.2	SCADA and SCMS system for new 220 kV Substation Design for interfacing with NLDC/ECC	lot	1		
2.1.3.1 2.1.3.2 2.1.3.3	SCADA and SCMS system for new 220 kV Substation Design for interfacing with NLDC/ECC Design for interfacing with future New Damauli 400 kV	lot lot			
2.1.3.1 2.1.3.2	SCADA and SCMS system for new 220 kV Substation Design for interfacing with NLDC/ECC	lot	1		
2.1.3.1 2.1.3.2 2.1.3.3 2.1.4 2.1.5	SCADA and SCMS system for new 220 kV Substation Design for interfacing with NLDC/ECC Design for interfacing with future New Damauli 400 kV Telecommunication design Electical installation design, including power and control cable systems, earthing and lightning protection systems, lighting and small power system, fire detection system	lot lot	1		
2.1.3.1 2.1.3.2 2.1.3.3 2.1.4 2.1.5 2.1.6	SCADA and SCMS system for new 220 kV Substation Design for interfacing with NLDC/ECC Design for interfacing with future New Damauli 400 kV Telecommunication design Electical installation design, including power and control cable systems, earthing and lightning protection systems, lighting and small power system, fire detection system Other design items	lot lot lot	1 1 1 1		
2.1.3.1 2.1.3.2 2.1.3.3 2.1.4 2.1.5 2.1.6 2.1.6.1	SCADA and SCMS system for new 220 kV Substation Design for interfacing with NLDC/ECC Design for interfacing with future New Damauli 400 kV Telecommunication design Electical installation design, including power and control cable systems, earthing and lightning protection systems, lighting and small power system, fire detection system Other design items Earthing resistance test, earthing study and earthing system test	lot lot lot lot	1 1 1 1 1		
2.1.3.1 2.1.3.2 2.1.3.3 2.1.4 2.1.5 2.1.6 2.1.6.1 2.1.6.2	SCADA and SCMS system for new 220 kV Substation Design for interfacing with NLDC/ECC Design for interfacing with future New Damauli 400 kV Telecommunication design Electical installation design, including power and control cable systems, earthing and lightning protection systems, lighting and small power system, fire detection system Other design items Earthing resistance test, earthing study and earthing system test Insulation Coordination Study	lot lot lot lot lot	1 1 1 1 1 1 1 1		
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2.1.3.1 2.1.3.2 2.1.3.3 2.1.4 2.1.5 2.1.6 2.1.6.1 2.1.6.2	SCADA and SCMS system for new 220 kV Substation Design for interfacing with NLDC/ECC Design for interfacing with future New Damauli 400 kV Telecommunication design Electical installation design, including power and control cable systems, earthing and lightning protection systems, lighting and small power system, fire detection system Other design items Earthing resistance test, earthing study and earthing system test Insulation Coordination Study	lot lot lot lot lot	1 1 1 1 1 1 1 1		
2.1.3.1 2.1.3.2 2.1.3.3 2.1.4 2.1.5 2.1.6 2.1.6.1 2.1.6.2 2.1.6.3	SCADA and SCMS system for new 220 kV Substation Design for interfacing with NLDC/ECC Design for interfacing with future New Damauli 400 kV Telecommunication design Electical installation design, including power and control cable systems, earthing and lightning protection systems, lighting and small power system, fire detection system Other design items Earthing resistance test, earthing study and earthing system test Insulation Coordination Study Protection Settings Study and Adjustments in Other Substations Civil Works Topographical surveys soil investigations	lot lot lot lot lot	1 1 1 1 1 1 1 1		
2.1.3.1 2.1.3.2 2.1.3.3 2.1.4 2.1.5 2.1.6 2.1.6.1 2.1.6.2 2.1.6.3 2.2 2.2.1 2.2.2	SCADA and SCMS system for new 220 kV Substation Design for interfacing with NLDC/ECC Design for interfacing with future New Damauli 400 kV Telecommunication design Electical installation design, including power and control cable systems, earthing and lightning protection systems, lighting and small power system, fire detection system Other design items Earthing resistance test, earthing study and earthing system test Insulation Coordination Study Protection Settings Study and Adjustments in Other Substations Civil Works	lot lot lot lot lot lot lot	1 1 1 1 1 1 1 1 1		
2.1.3.1 2.1.3.2 2.1.3.3 2.1.4 2.1.5 2.1.6 2.1.6.1 2.1.6.2 2.1.6.3 2.2 2.2.1 2.2.2 2.2.3	SCADA and SCMS system for new 220 kV Substation Design for interfacing with NLDC/ECC Design for interfacing with future New Damauli 400 kV Telecommunication design Electical installation design, including power and control cable systems, earthing and lightning protection systems, lighting and small power system, fire detection system Other design items Earthing resistance test, earthing study and earthing system test Insulation Coordination Study Protection Settings Study and Adjustments in Other Substations Civil Works Topographical surveys soil investigations Document Preparation and Submission for Permits Building design	lot lot lot lot lot lot lot lot	1 1 1 1 1 1 1 1 1 1 1 1		
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2.1.3.1 2.1.3.2 2.1.3.3 2.1.4 2.1.5 2.1.6 2.1.6.1 2.1.6.2 2.1.6.3 2.2 2.2.1 2.2.2 2.2.3 2.2.4 2.2.5 2.2.6 2.2.7	SCADA and SCMS system for new 220 kV Substation Design for interfacing with NLDC/ECC Design for interfacing with future New Damauli 400 kV Telecommunication design Electical installation design, including power and control cable systems, earthing and lightning protection systems, lighting and small power system, fire detection system Other design items Earthing resistance test, earthing study and earthing system test Insulation Coordination Study Protection Settings Study and Adjustments in Other Substations Civil Works Topographical surveys soil investigations Document Preparation and Submission for Permits Building design Transformer and equipment foundation design Design of channels, ducts etc. for cables Design of site preparation, leveling and compacting, temporary facilities	lot lot lot lot lot lot lot lot lot lot	1 1 1 1 1 1 1 1 1 1 1 1 1 1		
2.1.3.1 2.1.3.2 2.1.3.3 2.1.4 2.1.5 2.1.6 2.1.6.1 2.1.6.2 2.1.6.3 2.2 2.2.1 2.2.2 2.2.3 2.2.4 2.2.5 2.2.6 2.2.7 2.2.8	SCADA and SCMS system for new 220 kV Substation Design for interfacing with NLDC/ECC Design for interfacing with future New Damauli 400 kV Telecommunication design Electical installation design, including power and control cable systems, earthing and lightning protection systems, lighting and small power system, fire detection system Other design items Earthing resistance test, earthing study and earthing system test Insulation Coordination Study Protection Settings Study and Adjustments in Other Substations Civil Works Topographical surveys soil investigations Document Preparation and Submission for Permits Building design Transformer and equipment foundation design Design of channels, ducts etc. for cables Design of site preparation, leveling and compacting, temporary facilities Design of flood protection works	lot lot lot lot lot lot lot lot lot lot	1 1 1 1 1 1 1 1 1 1 1 1 1 1		
2.1.3.1 2.1.3.2 2.1.3.3 2.1.4 2.1.5 2.1.6 2.1.6.1 2.1.6.2 2.1.6.3 2.1.6.3 2.2.1 2.2.2 2.2.3 2.2.4 2.2.5 2.2.6 2.2.7 2.2.8 2.2.9	SCADA and SCMS system for new 220 kV Substation Design for interfacing with NLDC/ECC Design for interfacing with future New Damauli 400 kV Telecommunication design Electical installation design, including power and control cable systems, earthing and lightning protection systems, lighting and small power system, fire detection system Other design items Earthing resistance test, earthing study and earthing system test Insulation Coordination Study Protection Settings Study and Adjustments in Other Substations Civil Works Topographical surveys soil investigations Document Preparation and Submission for Permits Building design Transformer and equipment foundation design Design of channels, ducts etc. for cables Design of site preparation, leveling and compacting, temporary facilities Design of flood protection works Design of flood protection works	lot lot lot lot lot lot lot lot lot lot	1 1		
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2.1.3.1 2.1.3.2 2.1.3.3 2.1.4 2.1.5 2.1.6 2.1.6.1 2.1.6.2 2.1.6.2 2.1.6.3 2.2 2.2.1 2.2.2 2.2.3 2.2.4 2.2.5 2.2.6 2.2.7 2.2.8 2.2.9 2.2.10 2.2.11 2.2.12 2.2.12	SCADA and SCMS system for new 220 kV Substation Design for interfacing with NLDC/ECC Design for interfacing with future New Damauli 400 kV Telecommunication design Electical installation design, including power and control cable systems, earthing and lightning protection systems, lighting and small power system, fire detection system Other design items Earthing resistance test, earthing study and earthing system test Insulation Coordination Study Protection Settings Study and Adjustments in Other Substations Civil Works Topographical surveys soil investigations Document Preparation and Submission for Permits Building design Transformer and equipment foundation design Design of roads, paving, landscaping, fencing, gates Design of flood protection works Design of flood protection works Design of drainage and sewage systems Design of drainage and sewage systems Design of orier conditioning, ventilation and heating systems Design of fire protection system	lot lot lot lot lot lot lot lot lot lot	1 1		
2.1.3.1 2.1.3.2 2.1.3.3 2.1.4 2.1.5 2.1.6 2.1.6.1 2.1.6.2 2.1.6.2 2.1.6.3 2.2.1 2.2.2 2.2.3 2.2.4 2.2.5 2.2.6 2.2.7 2.2.8 2.2.9 2.2.10 2.2.11 2.2.12 2.2.11 2.2.12 2.2.12 2.2.12	SCADA and SCMS system for new 220 kV Substation Design for interfacing with NLDC/ECC Design for interfacing with future New Damauli 400 kV Telecommunication design Electical installation design, including power and control cable systems, earthing and lightning protection systems, lighting and small power system, fire detection system Other design items Earthing resistance test, earthing study and earthing system test Insulation Coordination Study Protection Settings Study and Adjustments in Other Substations Civil Works Topographical surveys soil investigations Document Preparation and Submission for Permits Building design Transformer and equipment foundation design Design of channels, ducts etc. for cables Design of site preparation, leveling and compacting, temporary facilities Design of flood protection works Design of drainage and sewage systems Design of drainage and sewage systems Design of orier supply system Design of orier protection system Design of orier protection system Design of fire protection system Design of fire protection system Design of fire protection system <td< td=""><td>lot lot lot lot lot lot lot lot lot lot</td><td>1 1</td><td></td><td></td></td<>	lot lot lot lot lot lot lot lot lot lot	1 1		
2.1.3.1 2.1.3.2 2.1.3.3 2.1.4 2.1.5 2.1.6 2.1.6.1 2.1.6.2 2.1.6.2 2.1.6.3 2.2 2.2.1 2.2.2 2.2.3 2.2.4 2.2.5 2.2.6 2.2.7 2.2.8 2.2.9 2.2.10 2.2.11 2.2.12 2.2.12	SCADA and SCMS system for new 220 kV Substation Design for interfacing with NLDC/ECC Design for interfacing with future New Damauli 400 kV Telecommunication design Electical installation design, including power and control cable systems, earthing and lightning protection systems, lighting and small power system, fire detection system Other design items Earthing resistance test, earthing study and earthing system test Insulation Coordination Study Protection Settings Study and Adjustments in Other Substations Civil Works Topographical surveys soil investigations Document Preparation and Submission for Permits Building design Transformer and equipment foundation design Design of roads, paving, landscaping, fencing, gates Design of flood protection works Design of flood protection works Design of drainage and sewage systems Design of drainage and sewage systems Design of orier conditioning, ventilation and heating systems Design of fire protection system	lot lot lot lot lot lot lot lot lot lot	1 1		

	Substa	tion Package B			
		ür Wiederaufbau (KfW)			
	Nepal Electr	icity Authority (NEA)			
	Schedule No.	. III: Design Services			
Item	Description	Unit	Quantity	Unit Price	Total Price
				(USD)	(USD)
			1	2	3=1x2
<u>3.4</u>	LV auxiliary systems	lot	<u>1</u>		
<u>3.5</u>	Protection and control systems	lot	<u>1</u>		
<u>3.6</u>	<u>SCMS</u>	<u>lot</u>	<u>1</u>		
<u>3.7</u>	SCADA	<u>lot</u>	<u>1</u>		
<u>3.8</u>	Telecommunication	<u>lot</u>	<u>1</u>		
<u>3.9</u>	CCTV System	<u>lot</u>	<u>1</u>		
<u>3.10</u>	Fire protection system	lot	<u>1</u>		
	TOTAL (to Schedule No. III Grand Summary)				
		Name of Bidde	er:		
		Signature of B	idder:		

	Substation Package Kreditanstalt für Wiederaufb Nanel Electricity Authority	au (KfW)				
	Nepal Electricity Authority Schedule No. IV: Installation and C					
ltem	Description	Unit	Quantity	Unit Price Inland Transportation	Unit Price Installation and other Services	Total Price
			1	(NPR) 2	(NPR) 3	(NPR) 4=1x(2+3)
1	220kV Extension of the 132kV switchyard in Lekhnath					
1.1	Extension of existing 132kV Switchyard					
1.1.1	132kV Transformer Bays (E13, E14)					
<u>1.1.1.1</u> 1.1.1.2	Set of 3-pole circuit breaker Sets of 3-pole disconnector with earthing switch	set set	2 4			
1.1.1.2	Set of 3-pole pantograph disconnector	set	2			
1.1.1.4	1-pole current transformer	units	6			
1.1.1.5	1-pole voltage transformer Gantries for busbar and feeders	units lot	6			
1.1.1.7	Busbar and feeder conductors	lot	1			
1.1.1.8	Insulators and fittings	lot	1			
1.1.1.9	All other necessary equipment and materials to complete the supply and the installation	lot	1			
1.1.2	Transformer AIS equipment and auxiliary system for fast reconnection of the spare transformer unit					
1.1.2.1	Surge arresters for the 220 kV transformer side	units	7	1		
1.1.2.2	Surge arresters for the 132 kV transformer side	units	7		T	
1.1.2.3	Surge arresters for the tertiary (<u>33</u> kV) side Gantries for 220 kV and 132 kV auxiliary busbar	units lot	7			
	OHL conductors for 220 kV and 132 kV auxiliary busbar for fast reconnection of the			1		
1.1.2.5	spare transformer unit	lot	1			
1.1.2.6	220 kV insulators and fittings 132 kV insulators and fittings	lot lot	1			
1.1.2.8	Interconnection of the auto-transformers tertiaries with the new 33 kV switchgear by means of busbar and cable including facility for fast reconnection of spare	lot	1			
1.1.2.9	transformer All other necessary work to complete the supply and the installation	lot	1			
1.1.3 1.1.3.1	Additional extension and relocation works Relocation of existing lighting poles affected by the extension of the 132 kV	lot	1			
1.1.3.2	switchyard Relocation of two (2) existing lightning protection masts affected by the extension of	lot	1			
	the 132 kV switchyard Relocation, within the substation's property, of an out-of-service transformer					
1.1.3.3	currently located in front of bay E14	lot	1			
1.2	220/132/11kV Autotransformer Single-phase autotransformers 220/132/33 kV 100 MVA/phase, equipped with on-					
1.2.1	load tap changer	unit	7			
1.2.2	Automatic voltage regulator, including the relevant software and integration in the SCMS	set	2			
1.2.3	Online transformer condition monitoring system, including the relevant software and integration in the SCMS.	set	7			
1.2.4	All other necessary equipment and materials to complete the supply and the installation	lot	1			
1.3	220 kV Gas Insulated Switchgear					
1.3.1	Transformer bay (D03, D07) with GIB and SF6/air bushings	set	2			
1.3.2 1.3.3	Local control panel with bay cabling for feeder D03, D07	set set	2			
1.3.4	OHL Bay (D04, D06) with GIB and SF6/air bushings Local control panel with bay cabling for feeder D04, D06	set	2			
1.3.5	Measuring Bay (D05)	set	1			
1.3.6	Bus Coupler Bay D05 Local control panel with bay cabling for feeder D05 and (D05), including cable	set	1			
1.3.7	connections to bus bar measuring and bus bar earthing	set	1			
1.3.8	Online switchgear monitoring system for all 6 bays, including the relevant software and integration in the SCMS.	lot	1			
1.3.9	PD UHF measuring system for periodical measurement on site	lot	1			
1.3.10	GIS steel supports for all bays and for GIB's, including wall bushings (material from GIS manufacturer for closing the wall openings)	lot	1			
1.3.11	Wall boards as specified (typical bay sections, single line diagram and gas compartment plan, gas density rules, gas temperature pressure curves etc.)	lot	1			
1.3.12	Key box including specified labelled keys and pad locks for 220kV GIS	lot	1			
1.3.13	All other necessary equipment and materials to complete the supply and the installation	lot	1			
1.4	220 kV AIS Equipment					
<u>1.4.1</u> 1.4.2	220kV OHL surge arresters 220kV capacitive voltage transformers	unit unit	6 6			
	220 kV OHL gantry	lot	1			
1.4.3	220 kV insulators and fittings	lot	1			
1.4.3 1.4.4		lot	1			
	All other necessary equipment and materials to complete the supply and the installation					
1.4.4 1.4.5	installation					
1.4.4 1.4.5 1.5 1.5.1	installation 33 kV Switchgear Outgoing feeder to auxiliary transformer (K02, K04)	set	2			
1.4.4 1.4.5 1.5	installation 33 kV Switchgear Outgoing feeder to auxiliary transformer (K02, K04) Riser measurement panel (K01, K03) All other necessary equipment, accessories and materials to complete the supply		2 2 1			
1.4.4 1.4.5 1.5 1.5.1 1.5.2 1.5.3	installation 33 kV Switchgear Outgoing feeder to auxiliary transformer (K02, K04) Riser measurement panel (K01, K03) All other necessary equipment, accessories and materials to complete the supply and the installation	set set	2			
1.4.4 1.4.5 1.5.1 1.5.2 1.5.3 1.6	installation 33 kV Switchgear Outgoing feeder to auxiliary transformer (K02, K04) Riser measurement panel (K01, K03) All other necessary equipment, accessories and materials to complete the supply and the installation Zig Zag Earthing Auxiliary Transformers Three-phase zig zag auxiliary transformers 33/0.4 kV, hermetically sealed type with	set set lot	2			
1.4.4 1.4.5 1.5 1.5.1 1.5.2 1.5.3 1.6 1.6.1	installation 33 kV Switchgear Outgoing feeder to auxiliary transformer (K02, K04) Riser measurement panel (K01, K03) All other necessary equipment, accessories and materials to complete the supply and the installation 2ig Zag Earthing Auxiliary Transformers Three-phase zig zag auxiliary transformers 33/0.4 kV, hermetically sealed type with off load tap changer, each of minimum 630 kVA	set set lot unit	2 1 2			
1.4.4 1.4.5 1.5 1.5.1 1.5.2 1.5.3 1.6 1.6.1 1.6.2	installation 33 kV Switchgear Outgoing feeder to auxiliary transformer (K02, K04) Riser measurement panel (K01, K03) All other necessary equipment, accessories and materials to complete the supply and the installation 2ig Zag Earthing Auxiliary Transformers Three-phase zig zag auxiliary transformers 33/0.4 kV, hermetically sealed type with off load tap changer, each of minimum 630 kVA Tank mounted surge arresters for the primary (33 kV) side. All other necessary equipment and materials to complete the supply and the	set set lot unit unit	2 1 2 6			
1.4.4 1.4.5 1.5 1.5.1 1.5.2 1.5.3 1.6 1.6.1 1.6.2 1.6.3	Installation 33 kV Switchgear Outgoing feeder to auxiliary transformer (K02, K04) Riser measurement panel (K01, K03) All other necessary equipment, accessories and materials to complete the supply and the installation 2ig Zag Earthing Auxiliary Transformers Three-phase zig zag auxiliary transformers 33/0.4 kV, hermetically sealed type with off load tap changer, each of minimum 630 kVA Tank mounted surge arresters for the primary (33 kV) side. All other necessary equipment and materials to complete the supply and the installation	set set lot unit	2 1 2			
1.4.4 1.4.5 1.5 1.5.1 1.5.2 1.5.3 1.6 1.6.1 1.6.2	installation 33 kV Switchgear Outgoing feeder to auxiliary transformer (K02, K04) Riser measurement panel (K01, K03) All other necessary equipment, accessories and materials to complete the supply and the installation 2ig Zag Earthing Auxiliary Transformers Three-phase zig zag auxiliary transformers 33/0.4 kV, hermetically sealed type with off load tap changer, each of minimum 630 kVA Tank mounted surge arresters for the primary (33 kV) side. All other necessary equipment and materials to complete the supply and the	set set lot unit unit	2 1 2 6			

	Substation Package B					
	Kreditanstalt für Wiederaufba Nepal Electricity Authority					
	Schedule No. IV: Installation and O					
ltem	Description	Unit	Quantity	Unit Price Inland Transportation	Unit Price Installation and other Services	Total Price
				(NPR)	(NPR)	(NPR)
			1	2	3	4=1x(2+3)
1.7.4	220 V DC batteries of Ni-Cd type, each with a minimum capacity of 600 Ah (10h discharge rate)	set	2			
1.7.5	48 V DC switchgear with two bus sections	set	1			
1.7.6	48 V battery chargers	set	2	-		
<u>1.7.7</u> 1.7.8	48 V DC batteries of Ni-Cd type, each with a minimum capacity of 150 Ah 230 V AC UPS System	set set	2			
	All other necessary equipment and materials to complete the supply and the		1			
1.7.9	installation	lot	1			
1.8	Diesel generator unit (DGU)					
1.8.1	Diesel generator unit, minimum of 50 kVA, in a prefabricated container equipped with fire-detection system and exhaust gas evacuation system including fuel tank	set	1			
1.8.2	All other necessary equipment and materials to complete the supply and the installation	lot	1			
1.9	Protection					
1.9.1	220 kV OHL Protection Terminals <i>incl. POW control</i> and BCU (D04, D06)	set	2	1		
1.9.2	220kV Bus coupler (D05) and Busbar Protections and BCU	set	1			
1.9.3	300MVA 220 kV side autotransformer protection <u>incl. POW control</u> and BCU (D03,	set	2			
1.9.4	D07) 300MVA 132kV side autotransformer protection and BCU (E13, E14)	set	2			
	20MVA 33kV side autotransformer bay control and protection BCPU (K01, K03)		2			
1.9.5	(installed in MV Switchgear) Auxiliary Earthing Tansformer bay control and protection BCPU (K02, K04)	set set	2			
	(installed in MV Switchgear) marshalling panel for the transformer control circuits for fast reconnection of spare		2			
1.9.7	transformer All other necessary equipment and materials to complete the supply and the	set				
1.9.8	installation	lot	1			
1.10	Synchrophasor Measurement Unit (PMU) for monitoring voltage and current as defined in the Scope, including software, documentation, cubicles, accessories	lot	1			
1.11	SCADA and SCMS					
1.11.1	SCADA and SCMS system for new 220 kV Substation includiong all necessary cabling, cubicles, equipment and materials to complete the	set	1			
1.11.2	supply and the installation Equipment and material for interfacing with NLDC/ECC including all necessary cabling, cubicles, equipment and materials to complete the	set	1			
	supply and the installation Equipment and material for interfacing with Existing Lekhnath 132 kV Substation					
1.11.3	including all necessary cabling, cubicles, equipment and materials to complete the supply and the installation	set	1			
1.12	Telecommunication		+	-		
	SDH Equipment					
1.12.1	SDH node for FOC connections to the new 220/132/33/11kV GIS Damauli Substation and to the existing 132/33/11kV Lekhnath Substation	lot	1			
1.12.2	Fibre optical cables and patch cords	lot	1			
1.12.3	Optical Distribution Frame and accessories IP-PBX telephony system, including appropriate telephone sets	lot lot	1	+		
1.12.4	All other necessary cubicles, software, equipment and materials to complete the supply and the installation	lot	1			
1.13	Metering					
1.13.1	Meter for 220kV OHL Main & Control	set	2			
1.13.2	Meter for 220/132/33 kV autotransformers (220 kV side and 132 kV side) Main & Control	set	4			
	Meter for auxiliary transformers					

	Substation Package I Kreditanstalt für Wiederaufb					
	Nepal Electricity Authority					
	Schedule No. IV: Installation and C	Other Services				
				-		
ltem	Description	Unit	Quantity	Unit Price Inland Transportation	Unit Price Installation and other Services	Total Pric
				(NPR)	(NPR)	(NPR)
			1	2	3	4=1x(2+3
1.13.4	Communication equipment (Ethernet Switches / Patch Panels / FOs / Cables etc)	lot	1			
1.13.5	GPRS-GSM communication device	set	1	-		
1.13.6	Cabinet	lot	1			
1.13.7	Notebook PC including related software for local access for meter reading	set	1			
	All other necessary, software, equipment and materials to complete the supply and					
1.13.8	the installation	lot	1			
1.14	Power and Control Cables			-		
1.14.1	33 kV Cables, sealing ends, terminals and accessories for 33kV auxiliary system	lot	1			
	including accessories LV Power and Control cables and accessories for auxiliary supply, protection,					
1.14.2	control, metering including accessories	lot	1			
	All other necessary equipment and materials to complete the supply and the					
1.14.3	installation	lot	1			
1.15	Earthing and lightning protection systems	lot	1			
			· · ·			
1.16	Lighting and small power system	lot	1	+		
1.17	Fire Protection system					
1.17	Fire detection system	lot	1	1		
1.17.2	Portable fire extinguishers	lot	1	1		
1.17.3	Fire fighting system		· ·	1		
1.17.3.1	Containerised fire fighting pump system	lot	1			
1.17.3.2	Fire fighting water tank	lot	1			
1.17.3.3	Fire fighting water supply pump with well	lot	1			
1.17.3.4	Transformer deluge systems for autotransformers	set	7			
1.17.3.5	Fire hydrant network and interconnection piping	lot	1	-		
1.17.3.6	All accessories necessary for the satisfactory operation of the system but which are	lot	1			
	not separately listed		-	-		
1.18	CCTV system			-		
1.18.1	Central unit	set	1			
1.18.2	Control panel	set	1			
1.18.3	Monitor	set	2			
1.18.4	Indoor Camera	lot	1			
1.18.5	Outdoor Camera	lot	1			
1.18.6	All other necessary equipment and materials to complete the extension	lot	1			
1.19	Civil Works		-	-		
1.19.1	Site Development Works	lot	1			
1.19.1.1	General Site Development works	lot	1			
1.19.1.2	Removal and disposal of existing building	lot	1			
1.19.2	Site installation and temporary works	lot	1			
1.19.3	Temporary Site Facilities					
1.19.3.1	Temporary site facilities and accommodations, including office containers, sanitary containers, rest rooms, etc., for Contractor's own staff	lot	1			
1.19.3.2	Office container for Employer / Engineer	lot	1	1		
			1	1		
1.19.4	Buildings					
1.19.4.1	220 kV GIS Building	lot	1			
1.19.4.2	Overhead travelling crane in 220kV GIS room	unit	1			
1.19.4.3	Ventilation system for 220kV GIS room	lot	1			
1.19.4.4 1.19.4.5	Control Building Airconditioning and ventilation for Control Building	lot lot	1			
1.19.4.5	Storage shelter	lot	1	1		
1.19.4.7	Furniture as defined in VII-6 Technical Requirements Civil Works	lot	1	1		
1.19.5	Transformer Foundations					
1.19.5.1	220/132/33 kV 100 MVA single phase auto-transformer foundations with oil catch	lot	1			
	and pits and fire separation walls for seven (7) transformers	101	· ·			
1.19.5.2	Auxiliary transformer foundations with sunshade and oil catch pits for two (2)	lot	1			
1.19.5.3	transformers Common oil collection pit with oil separator	lot	1	+		
		IUL				
1.19.6	Outdoor foundations - HV equipment		1	1		
1.19.6.1	220 kV gantry foundations	lot	1			
1.19.6.2	220 kV AIS equipment foundations for voltage transformers and surge arrestors	lot	1			
				1		
1.19.6.3	220 kV GIB and SF6/air termination foundations	lot	1	<u> </u>		
1.19.6.4	132 kV gantry foundations	lot	1			
1.19.6.5	132 kV AIS AIS equipment foundations for switchgear extension	lot	1			
1.19.6.6	132 kV GIB and SF6/air termination foundations	lot	1	+		
			+	1		
1.19.7	Outdoor foundations - other equipment					
1.19.7	Outdoor foundations - other equipment Foundation for the diesel generator and fuel storage	lot	1			

	Substation Package E					
	Kreditanstalt für Wiederaufba Nepal Electricity Authority					
	Schedule No. IV: Installation and C					
		the dervices				
Item	Description	Unit	Quantity	Unit Price Inland Transportation	Unit Price Installation and other Services	Total Price
				(NPR)	(NPR)	(NPR)
			1	2	3	4=1x(2+3)
1.19.7.3	Foundation for the fire water tank	lot	1			
1.19.8	Channels, ducts etc. for: 33 kV power cables from 220/132/33 kV autotransformers to 33 kV switchgear	1-4	1			
1.19.8.1 1.19.8.2	33 kV power cables from 220/132/33 kV autotransformers to 33 kV switchgear 33 kV power cables from 33 kV switchgear to auxiliary transformers	lot lot	1			
1.19.8.3	LV power and control cables from 220 kV GIS building to autotransformer and	lot	1			
1.19.0.3	outdoor equipment LV power and control cables from 220 kV GIS building to existing132 kV switchyard	IOL				
1.19.8.4	and control building	lot	1			
1.19.9	Roads, paving and gravel bed surfacing					
1.19.10	Site Preparation, leveling and compacting					
1.19.11	Water supply system			1		
1.19.11.1	Water treatment plant	lot	1	1		
1.19.11.2	Internal water supply system	lot	1			
1.19.12	Drainage and sewage systems		1			
1.19.12.1	Storm water drainage system	lot	1			
1.19.12.2	Sanitary sewage drainage system	lot	1			
1.19.13	Landscaping	lot	1			
1.19.14	Fencing and gates	lot	1			
1.20	Communication and Visibility	lot	1			
2	Construction of 220/132/33/11 kV substation in Damauli					
2.1	220 kV Gas Insulated Switchgear					
2.1.1	OHL Bays with GIB and SF6/air bushings (D06, D07, D08, D13, D14, D15)	set	6			
2.1.2	Local control panel with bay cabling for feeder (D06, D07, D08, D13, D14, D15)	set	6			
2.1.3	220/132kV Transformer Bay with GIB and SF6/air bushings (D09 and D12)	set	2			
2.1.4	Local control panel with bay cabling for feeder (D09 and D12) Bus Coupler Bays (D05, D16)	set set	2			
2.1.6	Local control panel with bay cabling for feeder (D05, D16)	set	2			
2.1.7	Measuring Bays ((D10) and (D11))	set	2			
2.1.8	Busbar Sectionalizers (D10, D11)	set	2			
2.1.9	Local control panel with bay cabling for feeder D10 and D11, including cable connections to bus bar measuring and bus bar earthing	set	2			
2.1.10	Online switchgear monitoring system for all 6 bays, including the relevant software and integration in the SCMS.	lot	1			
2.1.11	PD UHF measuring system for periodical measurement on site GIS steel supports for all bays and for GIB's, including wall bushings (material from	lot	1			
2.1.12	GIS manufacturer for closing the wall openings) Wall boards as specified (typical bay sections, single line diagram and gas	lot	1			
2.1.13	compartment plan, gas density rules, gas temperature pressure curves etc.)	lot				
2.1.14	Key box including specified labelled keys and pad locks for 220kV GIS All other necessary equipment and materials to complete the supply and the	lot	1			
2.1.15	installation	lot	1			
2.2	220 kV AIS Equipment					
2.2.1	220kV OHL surge arresters	unit	18	+		
2.2.2 2.2.3	220kV capacitive voltage transformers	unit lot	18 1			
2.2.3	220 kV OHL gantry 220 kV insulators and fittings	lot	1	1		
2.2.5	All other necessary equipment and materials to complete the supply and the installation	lot	1			
2.3	132 kV Gas Insulated Switchgear		+			
2.3.1	220/132kV Transformer Bays with cable conections (E02, E06)	set	2	1		
2.3.2	Local control panel with bay cabling for feeder E02, E06	set	2	1	1 1	
2.3.3	OHL Bays with GIB and SF6/air bushings (E03, E07)	set	2			
2.3.4	Local control panel with bay cabling for feeder E03, E07	set	2			
2.3.5	132/33kV Transformer Bay with GIB and SF6/air bushings (E01, E05)	set	2			
2.3.6	Local control panel with bay cabling for feeder E01, E05	set	2			
2.3.7	Measuring Bay (E04)	set	1	+		
2.3.8 2.3.9	Bus Coupler E04 Local control panel with bay cabling for feeder E04 and (E04), including cable	set set	1			
2.3.10	connections to bus bar measuring and bus bar earthing Online switchgear monitoring system for all bays, including the relevant software	lot	1	1		

	Substation Package B Kreditanstalt für Wiederaufba					
	Nepal Electricity Authority					
	Schedule No. IV: Installation and O					
				Unit Price	Unit Price	
Item	Description	Unit	Quantity	Inland	Installation and	Total Pric
nem	Description	Onic	Quantity	Transportation		Total The
				(NPR)	(NPR)	(NPR)
			1	2	3	4=1x(2+3
0.0.11	DD LIUE measuring evidem for periodical measurement on site	lat	1			
2.3.11	PD UHF measuring system for periodical measurement on site GIS steel supports for all bays and for GIB's, including wall bushings (material from	lot	1			
2.3.12	GIS manufacturer for closing the wall openings)	lot	1			
	Wall boards as specified (typical bay sections, single line diagram and gas		1			
2.3.13	compartment plan, gas density rules, gas temperature pressure curves etc.)	lot	1			
2.3.14	Key box including specified labelled keys and pad locks for 132kV GIS	lot	1			
	All other necessary equipment and materials to complete the supply and the					
2.3.15	installation	lot	1			
	in ordination					
2.4	132 kV AIS Equipment					
2.4.1	132 kV OHL surge arresters	unit	6			
2.4.2	132 kV capacitive voltage transformers	unit	6			
2.4.3	132 kV OHL gantry	lot	1			
2.4.4	132 kV insulators and fittings	lot	1			
2.4.5	All other necessary equipment and materials to complete the supply and the	lot	1			
2.4.3	installation	lot				
2.5	Power Transformers					
2.5.1	220/132 Power Transformer					
2.5.1.1	Three-phase power transformer 220/132 kV 50/63 MVA, equipped with on-load tap	unit	2			
	changer					
2.5.1.2	Line surge arresters for the primary (220 kV) side	unit	6			
2.5.1.3	Line surge arresters for the secondary (132 kV) side	unit	6	+		
2.5.1.4	Automatic voltage regulator, including the relevant software and integration in the	set	2			
	SCMS					
2.5.1.5	All other necessary equipment and materials to complete the supply and the	lot	1			
	installation		-			
			1			
2.5.2	132/33 kV Power Transformer		1			
2.5.2.1	Three-phase power transformer 132/33kV 24/30 MVA, equipped with on-load tap	unit	2			
0 5 0 0	changer	unit	6			
2.5.2.2 2.5.2.3	Line surge arresters for the secondary (132 kV) side	unit	6			
2.3.2.3	Line surge arresters for the secondary (33 kV) side Automatic voltage regulator, including the relevant software and integration in the	unit	0			
2.5.2.4	SCMS	set	2			
	All other necessary equipment and materials to complete the supply and the		-			
2.5.2.5	installation	lot	1			
	installation					
2.5.3	33/11 kV Power Transformer					
	Three-phase power transformer 33/11kV 6/8 MVA, equipped with on-load tap	.,				
2.5.3.1	changer	unit	2			
2.5.3.2	Line surge arresters for the secondary (33 kV) side	unit	6			
2.5.3.3	Line surge arresters for the secondary (11 kV) side	unit	6			
2.5.3.4	Automatic voltage regulator, including the relevant software and integration in the	aat	2			
2.5.3.4	SCMS	set	2			
2.5.3.5	All other necessary equipment and materials to complete the supply and the	lot	1			
2.0.0.0	installation	101	-			
2.6	MV Metal Clad AIS Switchgear					
2.6.1	33 kV Switchgear			1		
2.6.1.1	Incomers for 132/33kV transformer connection (J02, J11)	unit	2			
2.6.1.2	Outgoing feeders (J04, J10)	unit	2			
2.6.1.3	Outgoing feeder 33/11 kV transformer (J03, J12)	unit	2	+		
2.6.1.4	Outgoing feeders to auxiliary transformer (J05, J09)	unit	1			
2.6.1.5	Bus tie (J07)	unit	1	+		
2.6.1.6	Riser measurement panel (J08)	unit	1	+	<u>├</u>	
2.6.1.7	Measurement panel (J06) All other necessary equipment, accessories and materials to complete the supply	unit		+	<u>├</u>	
2.6.1.8	and the installation	lot	1			
			1	1		
2.6.2	11 kV Switchgear		1	1		
2.6.2.1	Incomers for 33/11kV transformer connection (K03, K08)	unit	2	1		
2.6.2.2	Outgoing feeders (K04, K05, K09, K11, K12)	unit	5	1		
2.6.2.3	Bus tie (K07)	unit	1		i l	
2.6.2.4	Riser measurement panel (K06)	unit	1		i i	
2.6.2.5	Measurement panel (K10)	unit	1			
	All other necessary equipment, accessories and materials to complete the supply					
2.6.2.6	and the installation	lot	1			
2.7	Auxiliary Transformers					
	Three-phase auxiliary transformers 33/0.4 kV, hermetically sealed type with off load	unit	2			
2.7.1	tap changer, each of minimum 630 kVA	unit	2			
	Tank mounted surge arresters for the primary (33 kV) side.	unit	6			
2.7.2						
	All other necessary equipment and materials to complete the supply and the	lot	1			
2.7.2 2.7.3	All other necessary equipment and materials to complete the supply and the installation	lot	1			
		lot	1			

	Substation Package I Kreditanstalt für Wiederaufb					
	Nepal Electricity Authority					
	Schedule No. IV: Installation and C	Other Services				
				1		
ltem	Description	Unit	Quantity	Unit Price Inland Transportation	Unit Price Installation and other Services	Total Price
				(NPR)	(NPR)	(NPR)
			1	2	3	4=1x(2+3)
2.8.2	220 V DC switchgear with two bus sections	set	1			
2.8.3	220 V battery chargers 220 V DC batteries of Ni-Cd type, each with a minimum capacity of 600 Ah (10h	set	2			
2.8.4	discharge rate)	set	2			
2.8.5 2.8.6	48 V DC switchgear with two bus sections 48 V battery chargers	set set	1 2			
2.8.7	48 V DC batteries of Ni-Cd type, each with a minimum capacity of 150 Ah	set	2			
2.8.8	230 V AC UPS System	set	2			
2.8.9	All other necessary equipment and materials to complete the supply and the installation	lot	1			
2.9	Diesel generator unit (DGU)					
2.9.1	Diesel generator unit, minimum of 100 kVA, in a prefabricated container equipped with fire-detection system and exhaust gas evacuation system including fuel tank	set	1			
2.9.2	All other necessary equipment and materials to complete the supply and the installation	lot	1			
2.10	Protection & Control					
2.10.1	220 kV OHL Protection Terminals <u>incl. POW control</u> and BCU (D06, D07, D08, D12 D14 D45)	set	6			
2.10.2	D13, D14, D15) 220kV Bus-sectionaliser and Busbar protection and BCU (D10, D11)	set	2			
2.10.3	220kV Bus-coupler and Busbar protection (D05, D16)	set	2			
2.10.4	50/63 MVA 220/132/11 kV Transformer 220 kV side protection and BCU (D09, D12)	set	2			
2.10.5	50/63 MVA 220/132/11 kV Transformer 132 kV side protection and BCU (E02, E06)	set	2			
2.10.6	132 kV OHL Protection Terminals and BCU (E03, E07)	set	2			
2.10.7	132kV Bus-coupler and Busbar protections and BCU (E04) 132/33kV 24/30 MVA Transformer feeder protection 132 kV side and BCU (E01,	set	1			
2.10.8	E05) 132/33kV 24/30 MVA Transformer feeder biotection 132 kV side and BCO (E01, 132/33kV 24/30 MVA Transformer feeder bay control and protection (BCPU) 33 kV	set	2			
2.10.9	side (J02, J09) (installed in 33 kV switchgear)	set	2			
2.10.10	33kV Bus-coupler bay control and protection (BCPU) (J07) (installed in 33 kV switchgear)	set	1			
2.10.11	33kV Feeder bay control and protection (BCPU) (J04, J08) 33/11kV 8/10MVA Transformer feeder bay control and protection (BCPU) 33 kV	set	2			
2.10.12	side (J03, J10) (installed in 33 kV switchgear) 33/11kV 8/10MVA Transformer feeder protection 11 kV side (K03, K08)	set	2			
2.10.13	(installed in 11 kV switchgear)	set	2			
2.10.14	11kV Feeder bay control and protection (BCPU) (K04, K05, K11, K12, K13, K14) (installed in 11 kV switchgear)	set	5			
2.10.15	11kV Auxiliary Transformer Feeder bay control and protection (BCPU) (K06, K10) (installed in 11 kV switchgear)	set	2			
2.10.16	11kV Bus-coupler protection (K07)	set	1			
2.10.17	All other necessary equipment and materials to complete the supply and the installation	lot	1			
2.11	Synchrophasor Measurement Unit (PMU) for monitoring voltage and current as defined in the Scope, including software, documentation, cubicles, accessories	set	1			
2.12	SCADA and SCMS					
2.12.1	SCADA and SCMS system for new 220/132/33/11 kV Substation including all necessary cabling, cubicles, equipment and materials to complete the supply and the installation	lot	1			
2.12.2	Equipment and material for interfacing with NLDC/ECC including all necessary cabling, cubicles, equipment and materials to complete the supply and the installation	lot	1			
2.12.3	Equipment and material for interfacing with future New Damauli 400 kV Substation including all necessary cabling, cubicles, equipment and materials to complete the supply and the installation	lot	1			
2.13	Telecommunication					
2.10	SDH Equipment					
2.13.1	SDH node for FOC connections of new 220 kV GIS Lekhnath Substation, to Tanahu HPP, 220 kV Bharatpur Substation, Old Damauli and 132 kV Bharatpur.	lot	1			
2.13.2	Fibre optical cables, including approach cable from splicing box to SDH equipment	lot	1			
	and patch cords	lot	1 1	1	1	

	Substation Package E Kroditanetalt für Windoraufb					
	Kreditanstalt für Wiederaufba Nepal Electricity Authority					
	Schedule No. IV: Installation and C					
ltem	Description	Unit	Quantity	Unit Price Inland Transportation	Unit Price Installation and other Services	Total Pric
			1	(NPR) 2	(NPR) 3	(NPR) 4=1x(2+3
				2	5	4-1/(2+0
2.13.4	IP-PBX telephony system, including appropriate telephone sets	lot	1			
2.13.5	All other necessary cubicles, software, equipment and materials to complete the	lot	1			
	supply and the installation			-		
2.14	Metering					
2.14.1	Meter for 220kV OHL	set	6			
2.14.1	Main & Control	Sel	0			
2.14.2	Meter for 132 OHL	set	2			
	Main & Control Meter for 220/132 kV Transformers, (220 kV side and 132 kV side),					
2.14.3	Main & Control	set	2			
2.14.4	Meter for 132/33 kV Transformers, 132 kV side and 33 kV side),	set	2			
2.14.4	Main & Control	Set	2			
2.14.5	Meter for 33/11 kV Transformers, (33 kV side and 11 kV side), Main & Control	set	2			
	Meter for 33 kV Feeders					
2.14.6	Main & Control	set	2			
2.14.7	Meter for 11 kV Feeders	set	7			
	Main & Control Meter for auxiliary transformers			+	<u> </u>	
2.14.8	Meter for auxiliary transformers Main & Control	set	2	1		
0.44.0						
2.14.9	Communication equipment (Ethernet Switches / Patch Panels / FOs / Cables etc)	lot	1			
2.14.10	GPRS-GSM communication device	lot	1			
2.14.11 2.14.12	Cabinet	lot set	1			
	Notebook PC including related software for local access for meter reading All other necessary, software, equipment and materials to complete the supply and					
2.14.13	the installation	lot	1			
2.15	Power and Control Cables					
2.15.1	HV cable systems comprising 132 kV XLPE cables for the connection between the secondary windings of 220/132 kV transformers and the 132 kV switchgear	lot	1			
2.15.2	MV cable systems comprising 33 kV XLPE cables for the connection between	lot	1			
	secondary windings of 132/33 kV transformers and 33 kV switchgear MV cable systems comprising 33 kV XLPE cables for the connection between 33 kV					
2.15.3	switchgear and 33/11 kV transformers	lot	1			
0.45.4	MV cable systems comprising 33 kV XLPE cables for the connection between 33kV	1-4	1			
2.15.4	switchgear and auxiliary transformers	lot	1			
2.15.5	MV cable systems comprising 11 kV XLPE cablesfor the connection between	lot	1			
	secondary windings of 33/11 kV transformers and 11 kV switchgear MV cable systems comprising 11 kV XLPE cables for the connection of three 11 kV			-		
2.15.6	feeders between between 11 kV switchgear and distribution OHL pole location on	lot	1			
	the north side of the substation towards the river LV Power and Control cables and accessories for auxiliary supply, protection,					
2.15.7	LV Power and Control cables and accessories for auxiliary supply, protection, control, metering including accessories	lot	1			
0.45.0	All other necessary equipment and materials to complete the supply and the	1-4	4	1		
2.15.8	installation	lot	1			
2.46	Earthing and lightning protection systems	lat	4	+	├ ──── │	
2.16	Earthing and lightning protection systems	lot	1	1	<u>├</u>	
2.17	Lighting and small power system	lot	1			
2.18	Fire Protection system	le t	4			
2.18.1 2.18.2	Fire detection system Portable fire extinguishers	lot lot	1	1	<u>├</u>	
2.18.3	Fire fighting system	101	1	1		
2.18.3.1	Containerised fire fighting pump system	lot	1			
2.18.3.2	Fire fighting water tank	lot	1			
2.18.3.3 2.18.3.4	Fire fighting water supply pump with well Transformer deluge systems for autotransformers	lot set	1 6	-	<u> </u>	
2.18.3.4	Fire hydrant network and interconnection piping	lot	1	1		
2.18.3.6	All accessories necessary for the satisfactory operation of the system but which are	lot	1			
2.10.3.0	not separately listed	iUL	'			
2.40	CCTV system		+			
2.19 2.19.1	CCTV system Central unit	set	1	1	<u>├</u>	
2.19.1	Control panel	set	1	1		
2.19.3	Monitor	set	2			
2.19.4	Indoor Camera	lot	1			
2.19.5 2.19.6	Outdoor Camera All other necessary equipment and materials to complete the extension	lot	1			
	TAILOUEL DECESSALV EQUIDITIENT AND MATERIALS TO COMPLETE THE EXTENSION	lot	1 1	1		

	Substation Package Kreditanstalt für Wiederaufb					
	Nepal Electricity Authority	(NEA)				
	Schedule No. IV: Installation and C	Other Services				
				1	1	
Item	Description		Quantity	Unit Price Inland Transportation	Unit Price Installation and other Services	Total Pric
				(NPR)	(NPR)	(NPR)
			1	2	3	4=1x(2+3)
2.20	Civil Works					
2.20	Site Development Works	lot	1			
2.20.1.1	Phase 1	101	· ·	1		
2.20.1.1.1	General Site Development works	lot	1			
2.20.1.1.2	Temporary bridge from existing access road over Chabdi river for temporary access during site development works and enhancement of xisting access road	lot	1			
2 20 1 1 3	Removal and disposal of existing building	lot	1			
	External drainage collector 1 (hill side south of substation)	lot	1			
	External drainage collector 2 (400 kV side east of substation)	lot	1			
2.20.1.1.6	Development of the 220kV substation platform (excavation, filling and compaction, flood protection works). The temporary access road and temporary bridge may be	lot	1			
2.20.1.1.7	used for these works. Permanent access road, including related rainwater protection works	lot	1			
2.20.1.1.8	Inner fencing surrounding the substation area with main access gate and maintenance access gates to area between the 220kV substation platform and the	lot	1			
2.20.1.1.9	riverbed Access road (3 m wide) from maintenance access gates to area between the 220kV substation platform and the riverbed	lot	1			
			1	1		
2.20.1.2	Phase 2			<u> </u>		
2.20.1.2.1	Removal and disposal of temporary access bridge Levelling of the area between the 220kV substation platform and the riverbed (no	lot	1			
2.20.1.2.2	filling required for the area between the 220kV substation platform and the riverbed) and development of a drainage system to drain water from this area	lot	1			
2.20.1.2.3	Development flood retaining wall and external chain link fence	lot lot	1			
2.20.1.2.4	Low wall along external drainage collector on south side	lot	1			
2.20.1.2.6	Low wall along external drainage collector on south side Low wall along east side of substation platform (towards future 400 kV substation	lot	1			
2.20.2	Site installation and temporary works	lot	1			
2.20.3	Temporary Site Facilities					
2.20.3.1	Temporary site facilities and accommodations, including office containers, sanitary	lot	1			
2.20.3.2	containers, rest rooms, etc., for Contractor's own staff Office container for Employer / Engineer	lot	1	-		
2.20.0.2		101				
2.20.4	Buildings					
2.20.4.1	220 kV GIS Building	lot	1			
2.20.4.2	Overhead travelling crane for 220kV GIS room	unit	1			
2.20.4.3	Ventilation System for 220kV GIS room	unit	1			
2.20.4.4	132 kV GIS Building	lot	1			
2.20.4.5	Overhead travelling crane for 132kV GIS room Ventilation System for 132kV GIS room	unit unit	1	-		
2.20.4.0	Control Building	lot	1			
2.20.4.8	Airconditioning and Ventilatiopn for Control Building	lot	1			
2.20.4.9	Separate strore building	lot	1			
2.20.4.10	Guard house	lot	1			
2.20.4.11	Airconditioning for Guard House	lot	1			
2.20.4.12	Furniture as defined in VII-6 Technical Requirements Civil Works	lot	1			
			+	1	├	
	Transformer Foundations		1			
2.20.5			1	1		
2.20.5 2.20.5.1	220/132 kV 50/63 MVA power transformer foundations with oil catch and pits and fire separation walls for two (2) transformers	lot	1			
2.20.5 2.20.5.1 2.20.5.2	fire separation walls for two (2) transformers 132/33 kV 24/30 MVA power transformer foundationswith oil catch and pits and fire separation walls for two (2) transformers	lot lot	1			
2.20.5.1 2.20.5.2 2.20.5.3	fire separation walls for two (2) transformers 132/33 kV 24/30 MVA power transformer foundationswith oil catch and pits and fire separation walls for two (2) transformers 33/11 kV 8/10 MVA power transformer foundations with oil catch and pits and fire separation walls for two (2) transformers	lot lot	1			
2.20.5.1 2.20.5.2 2.20.5.3	fire separation walls for two (2) transformers 132/33 kV 24/30 MVA power transformer foundationswith oil catch and pits and fire separation walls for two (2) transformers 33/11 kV 8/10 MVA power transformer foundations with oil catch and pits and fire	lot	1			
2.20.5.1 2.20.5.2 2.20.5.3 2.20.5.4 2.20.5.5	fire separation walls for two (2) transformers 132(33 kV 24/30 MVA power transformer foundationswith oil catch and pits and fire separation walls for two (2) transformers 33/11 kV 8/10 MVA power transformer foundations with oil catch and pits and fire separation walls for two (2) transformers Auxiliary transformer foundations with sunshade and oil catch pits for two (2) transformers Common oil collection pit with oil separator	lot lot	1			
2.20.5.1 2.20.5.2 2.20.5.3 2.20.5.4 2.20.5.5 2.20.6	fire separation walls for two (2) transformers 132/33 kV 24/30 MVA power transformer foundationswith oil catch and pits and fire separation walls for two (2) transformers 33/11 kV 8/10 MVA power transformers separation walls for two (2) transformers Auxiliary transformer foundations with sunshade and oil catch pits for two (2) transformers Common oil collection pit with oil separator Outdoor foundations - HV equipment	lot lot lot	1 1 1 1			
2.20.5.1 2.20.5.2 2.20.5.3 2.20.5.4 2.20.5.5	fire separation walls for two (2) transformers 132/33 kV 24/30 MVA power transformer foundationswith oil catch and pits and fire separation walls for two (2) transformers 33/11 kV 8/10 MVA power transformer foundations with oil catch and pits and fire separation walls for two (2) transformers Auxiliary transformer foundations with sunshade and oil catch pits for two (2) transformers Common oil collection pit with oil separator Outdoor foundations - HV equipment 220 kV gantry foundations	lot lot lot	1 1 1			
2.20.5.1 2.20.5.2 2.20.5.3 2.20.5.4 2.20.5.5 2.20.6 2.20.6.1 2.20.6.2	fire separation walls for two (2) transformers 132(33 kV 24/30 MVA power transformer foundationswith oil catch and pits and fire separation walls for two (2) transformer foundations with oil catch and pits and fire separation walls for two (2) transformers Auxiliary transformer foundations with sunshade and oil catch pits for two (2) transformers Common oil collection pit with oil separator Outdoor foundations - HV equipment 220 kV gantry foundations 220 kV AIS equipment foundations for voltage transformers and surge arrestors	lot lot lot lot lot lot	1 1 1 1 1 1 1 1			
2.20.5.1 2.20.5.2 2.20.5.3 2.20.5.4 2.20.5.5 2.20.6 2.20.6.1 2.20.6.2 2.20.6.3	fire separation walls for two (2) transformers 132/33 kV 24/30 MVA power transformer foundationswith oil catch and pits and fire separation walls for two (2) transformers 33/11 kV 8/10 MVA power transformers Auxiliary transformer foundations with oil catch and pits and fire separation walls for two (2) transformers Auxiliary transformer foundations with sunshade and oil catch pits for two (2) transformers Common oil collection pit with oil separator Outdoor foundations - HV equipment 220 kV aparty foundations 220 kV AIS equipment foundations for voltage transformers and surge arrestors 220 kV GIB and SF6/air termination foundations	lot lot lot lot lot lot lot	1 1 1 1 1 1 1 1 1 1			
2.20.5.1 2.20.5.2 2.20.5.3 2.20.5.4 2.20.5.5 2.20.6 2.20.6.1 2.20.6.2 2.20.6.3 2.20.6.4	fire separation walls for two (2) transformers 132/33 kV 24/30 MVA power transformer foundationswith oil catch and pits and fire separation walls for two (2) transformers 33/11 kV 8/10 MVA power transformer foundations with oil catch and pits and fire separation walls for two (2) transformers Auxiliary transformer foundations with sunshade and oil catch pits for two (2) transformers Common oil collection pit with oil separator Outdoor foundations - HV equipment 220 kV gantry foundations 220 kV GIB and SF6/air termination foundations 132 kV gantry foundations	lot lot lot lot lot lot lot lot	1 1 1 1 1 1 1 1 1 1 1			
2.20.5.1 2.20.5.2 2.20.5.3 2.20.5.4 2.20.5.5 2.20.6 2.20.6.1 2.20.6.2 2.20.6.3 2.20.6.4 2.20.6.5	fire separation walls for two (2) transformers 132(33 kV 24/30 MVA power transformer foundationswith oil catch and pits and fire separation walls for two (2) transformer foundations with oil catch and pits and fire separation walls for two (2) transformers Auxiliary transformer foundations with sunshade and oil catch pits for two (2) transformers Common oil collection pit with oil separator Outdoor foundations - HV equipment 220 kV gantry foundations 220 kV GIB and SF6/air termination foundations 132 kV gantry foundations 132 kV AIS equipment foundations for voltage transformers and surge arrestors 132 kV AIS equipment foundations	lot lot lot lot lot lot lot lot lot	1 1 1 1 1 1 1 1 1 1 1			
2.20.5.1 2.20.5.2 2.20.5.3 2.20.5.4 2.20.5.5 2.20.6 2.20.6.1 2.20.6.2 2.20.6.3 2.20.6.4 2.20.6.5 2.20.6.6	fire separation walls for two (2) transformers 132/33 kV 24/30 MVA power transformer foundations with oil catch and pits and fire separation walls for two (2) transformers 33/11 kV 8/10 MVA power transformer foundations with oil catch and pits and fire separation walls for two (2) transformers Auxiliary transformer foundations with sunshade and oil catch pits for two (2) transformers Common oil collection pit with oil separator Outdoor foundations - HV equipment 220 kV gantry foundations 220 kV AIS equipment foundations for voltage transformers and surge arrestors 220 kV GIB and SF6/air termination foundations 132 kV GIB and SF6/air termination foundations 132 kV GIB and SF6/air termination foundations	lot lot lot lot lot lot lot lot	1 1 1 1 1 1 1 1 1 1 1			
2.20.5.1 2.20.5.2 2.20.5.3 2.20.5.4 2.20.5.5 2.20.6.1 2.20.6.2 2.20.6.3 2.20.6.4 2.20.6.5 2.20.6.6 2.20.6.6	fire separation walls for two (2) transformers 132(33 kV 24/30 MVA power transformer foundationswith oil catch and pits and fire separation walls for two (2) transformers 33/11 kV 8/10 MVA power transformer foundations with oil catch and pits and fire separation walls for two (2) transformers Auxiliary transformer foundations with sunshade and oil catch pits for two (2) transformers Common oil collection pit with oil separator Outdoor foundations - HV equipment 220 kV GIB and SF6/air termination foundations 132 kV AIS equipment foundations 133 kV AIS equipment foundations 134 kV AIS equipment foundations 135 kV AIS equipment foundations 135 kV AIS equipment foundations 135 kV AIS equipment foundations 135 kV AIS equipment foundations 135 kV AIS equipment foundations 135 kV AIS equipment foundations 135 kV AIS equipment foundations 135 kV AIS equipment foundations 135 kV AIS equipment foundations 135 kV AIS equipment foundations 135 kV AIS equipment foundations 135 kV AIS equipment foundations 135 kV AIS equipment foundations 135 kV AIS equipment foundations 135 kV AIS equipment foundations 135 kV AIS equipment foundations 135 kV AIS equipment foundations 145 kV AIS equipment 145 kV AIS equipment 145 kV	lot lot lot lot lot lot lot lot lot	1 1 1 1 1 1 1 1 1 1 1 1			
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	Substation Package	B				
	Kreditanstalt für Wiederauf					
	Nepal Electricity Authorit Schedule No. IV: Installation and					
	Schedule No. IV: Installation and	Other Services				
Item	Description	Unit	Quantity	Unit Price Inland Transportation	Unit Price Installation and other Services	Total Price
		-		(NPR)	(NPR)	(NPR)
		+	1	2	3	4=1x(2+3)
2.20.8	Channels, ducts etc. for:					
2.20.8.1	220 kV cables from the 220 kV GIS up to the fence towards the future 400 kV Substation	lot	1			
2.20.8.2	220 kV cables from the 220 kV GIS up to the fence towards the future 220 kV gantries	lot	1			
2.20.8.3	132 kV cables from the 220/132 kV transformers to the 132 kV switchgear	lot	1			
2.20.8.4	33 kV cables from 132/33 kV transformers to 33 kV switchgear and from 33 kV	lot	1			
	switchgear to 33/11 kV transformers					
2.20.8.5 2.20.8.6	33 kV cables from and 33 kV switchgear to auxiliary 33/0.4 kV transformer 11 kV power cables from 132/11 kV transformers to 11 kV switchgear	lot lot	1			
2.20.8.7	11 kV power cables from 11 kV switchgear to auxiliary transformers	lot	1			
2.20.0.1	11 kV outgoing feeder cables between between 11 kV switchgear and distribution	101				
2.20.8.8	OHL pole location on the north side of the substation towards the river	lot	1			
2.20.8.9	33 kV outgoing feeder cables between between 33 kV switchgear and distribution OHL pole location on the north side of the substation towards the river	lot	1			
2.20.8.10	LV power and control cables from 220 kV GIS building to autotransformer and outdoor equipment	lot	1			
2.20.8.11	LV power and control cables from 132 kV GIS building to power transformer and outdoor equipment	lot	1			
2.20.8.12	LV power and control cables from 220 kV GIS building to 132 kV building	lot	1			
2.20.9 2.20.9.1	Roads, paving and gravel bed surfacing Concrete roads and surfacing inside subststion as indicated in the Substtation	lot	1			
2.20.9.2	Layout drawing Car Park with roof shade as indicated in the Substtation Layout drawing	lot	1			
2.20.9.2	Crushed rock surfacing inside subststion as indicated in the Substation Layout drawing drawing	lot	1			
2.20.10	Water supply system					
2.20.10.1	Water treatment plant	lot	1			
2.20.10.2	Internal water supply system	lot	1			
2.20.11	Drainage and sewage systems					
2.20.11.1	The storm water drainage system inside substation area	lot	1			
2.20.11.2	Sanitary sewage drainage system inside substation area	lot	1			
2.20.12	Londeconing	lat	1			
2.20.12	Landscaping Plantations using low to medium-high growing plants and grass along the main	lot lot	1			
0.04	roads and buildings, as indicated on the layout drawings					
2.21	Communication and Visibility	lot	1			
3	TRAINING OF EMPLOYER'S STAFF (On Site / In Nepal)					
3.1 3.2	High voltage switchgear Medium voltage switchgear	lot lot	1			
3.2	Auto and power transformers	lot	1	1		
3.4	LV auxiliary systems	lot	1	1		
3.5	Protection and control systems	lot	1			
3.6	SCMS	lot	1			
3.7	SCADA	lot	1			
3.8	Telecommunication	lot	1			
3.9	CCTV System	lot	1	+		
3.10	Fire protection system	lot	1	1		
		1		1		
	TOTAL (to Schedule No. VI Grand Summary)	1		1		
	,					
		Name of Bidder	:			
		Name of Bidder				

Substation Package B								
	Kreditanstalt für Wiederaufbau (KfW)							
	Nepal Electricity Authority (NEA)							
	Schedule No. V: ESHS Requirements							
ltem	Description	Unit	Total (NPR)					
1	ESHS Requirements							
1.1	Resources allocated to ESHS management as per the ESMP requirements	Lump sum						
1.2	Required tools, equipment, facilities (toilets/cabin/tents/security), and transportation for Archaeological Clerk of Works for any archaeological excavations required	Lump sum						
1.3	Required tools, equipment, facilities (toilets/cabin/tents/security), and transportation for Biodiveristiy Clerk of Work to sites required (Biodiversity Clerk of Work appointed by NEA)	Lump sum						
1.4	Drafting and updating the ESHS documentation, reporting, inspections as per the ESMP requirements	Lump sum						
1.5	Implementation of the Health and Safety Plan: meetings, health care center, medical check-ups, emergencies and evacuations, safety protective equipment, hygiene as per the ESMP requirements	Lump sum						
1.6	Accommodation, drinking water, meals and transportation of staff(*) as per the ESMP requirements (*) : The Bidder shall detail the financial conditions of the supply of accommodation, meals and transport to its staff.							
1.6.1	- Accommodation	Lump sum						
1.6.2	- Meals	Lump sum						
1.6.3	- Transport	Lump sum						
1.7	Local recruitment and training management costs	Lump sum						
1.8	Biodiversity studies, surveys and related activites as per ESMP requirements	-						
1.9	Temporary access rights, land take and compensation as per the ESMP requirements	Lump sum						
1.10	Vegetation and tree removal as per ESMP requirements	Lump sum						
1.11	Protection of the biodiversity, adjacent areas, prevention of erosion at work sites and access tracks as per the ESMP requirements	Lump sum						
1.12	Traffic, noise and atmospheric emissions management as per the ESMP requirements	Lump sum						
1.13	Contamination studies, wastewater, waste and hazardous products mangement as per the ESMP requirements	Lump sum						
1.14	Site reinstatement as per the ESMP requirements	Lump sum						
1.15	Other material, equipment or studies not specifically mentioned but deemed necessary based on ESMP requirements	Lump sum						
1.15.1	River training structures	Lump sum						
1.15.2	Culvert for Chaabdi Khola (near substation)	Lump sum						
	TOTAL (to Schedule No. VI Grand Summary)							
		Name of Bidder:						
		Signature of Bidder:						

	Substation Package B									
	Kreditanstalt für Wiederaufbau (KfW)									
	Nepal Electricity Authority (NEA)									
	Schedule No. VI: Grand Summary									
Schedule	Description	Total	Total							
		(USD)	(NPR)							
1	Plant, and Mandatory Spare Parts supplied from abroad									
2	Plant, and Mandatory Spare Parts supplied from within the Employer's Country									
3	Design Services									
4	Installation and Other Services									
5	ESHS Requirements									
6	TOTAL (to Bid Form)									
	Name of Bidder:									
	2 1 1 1 1 1 1 1 1 1 1									
	Signature of Bidder:									

		Substation Package	ge B								
	Kredit	anstalt für Wiedera	ufbau (Kf	W)							
	Nep	al Electricity Autho	rity (NEA)								
	Schedule No. VI	I: Recommended S	pare Part	s and Tools	;						
Item	Description	Country of Origin	Unit	Quantity	Unit Price	Total					
					CIP	CIP					
					(USD)	(USD)					
				1	2	3 = 1 x 2					
					Name of Bidder:						
					Cignoture of Did						
					Signature of Bid	aer:					