

**Nepal Electricity Authority  
Amendment to Bid  
Addendum No. 1**

**Loan No:** 54107-001 NEP, Electricity Grid Modernization Project  
**OCBNo** PMD/EGMP/KRON/077/078-01  
**Job Title:** Design, Supply, Installation and Commissioning of 132/33kV Air Insulated Substation(AIS) at Keraun, Morang District with Associated 33kV Sub transmission Line

S.N.	Clause Ref	Existing	Amendment
<b>1. Instruction to bidder (ITB)</b>			
1.1	Section 2 - Data Sheet, ITB 24.1	The deadline for bid submission is Date: 14 October 2020 Time: 12:00 Noon (Local Time)	The deadline for bid submission is Date: 1 November 2020 Time: 12:00 hrs (Nepalese Standard Time)
1.2	Section 2 - Data Sheet , ITB 27.1	<b>The technical bid opening shall take place at:</b> Street address: NEA Training Center Complex, Kharipati, Bhaktapur Floor/Room number: Ground Floor, Room E112 City : Bhaktapur Country: Nepal Date: 14 October 2020 Time: 12:30 hrs (Local Time)	<b>The technical bid opening shall take place at:</b> Street address: NEA Training Center Complex, Kharipati, Bhaktapur Floor/Room number: Ground Floor, Room E112 City : Bhaktapur Country: Nepal Date: 1 November 2020 Time: 12:30 hrs (Nepalese Standard Time)
<b>2. Special Condition of Contract (SCC)</b>			
2.1	Section 8 – Special Condition of Contract , Clause 27.10	The critical components covered under the extended defect liability are AIS, Power/Auto Transformers, Substation Automation System (SAS) and the period shall be 3 (three) years.	The critical components covered under the extended defect liability are Power/Auto Transformers, Substation Automation System (SAS) and the period shall be 3 (three) years.
<b>3. Bid Price Schedule (BPS)</b>			
3.1	BPS: Schedule 1, Part 2 , Part B: VENDOR ASSESSED QUANTITIES:1 (Quantity)	30 Lot	1 Lot
3.2	BPS: Schedule 1, Part 3, Part B: VENDOR ASSESSED QUANTITIES:1 (Quantity)	50 Lot	1 Lot
3.3	BPS: Schedule 4(a), Part 2 , Part A: OWNER ASSESSED QUANTITIES: A1(5) (Unit)	Km	3 wire ckt km
3.4	BPS: Schedule 4(a), Part 3, Part A: OWNER ASSESSED	Km	3 wire ckt km

	QUANTITIES: A1(3) (Unit)		
3.5	BPS: Schedule 4(a), Part 3, Part A: OWNER ASSESSED QUANTITIES: A1(4) (Unit)	Km	3 wire ckt km
3.6	BPS: Schedule 4(a), Part 3, Part A: OWNER ASSESSED QUANTITIES: A1(5) (Unit)	Km	3 wire ckt km

Note: Amended Price Schedule is attached herewith.



For further details, please visit our website:  
[https://www.nea.org.np/tender\\_prequalification](https://www.nea.org.np/tender_prequalification).  
The Project Manager#  
Keraun 132/33kV Substation Project  
Project Management Directorate  
Project Management Department  
Nepal Electricity Authority  
Phone: +977 -9851073273/Email: keraun132kv@nea.org.np

26.2 Applicable rate for liquidated damages: 0.05 % of Contract Price per day of delay  
Maximum deduction for liquidated damages: 10% of Contract Price

26.3 No bonus will be given for earlier Completion of the Facilities or part thereof.

## 27. Defect Liability

27.10 The critical components covered under the extended defect liability are [Power/Auto Transformers](#), Substation Automation System (SAS) and the period shall be 3 (three) years.

## 31. Transfer of Ownership

31.5 In the 4th line, replace "Completion of the Facilities" by "Operational Acceptance of the Facilities".

## 32. Care of Facilities

32.1 Replace all "Completion" by "Operational Acceptance".

## 45. Disputes and Arbitration

45.1 The Dispute Board shall be appointed within 28 days after the Effective Date.  
The Dispute Board shall be one sole member.  
List of potential Dispute Board members is: None

45.2 Appointment (if not agreed) to be made by: Nepal Council of Arbitration (NEPCA)

45.5 Rules of procedure for arbitration proceedings:

(a) Contracts with foreign contractors:

Arbitration shall be administered by SIAC in accordance with its Practice Note on UNCITRAL cases. The appointing authority shall be the President or Vice-President of SIAC Court of Arbitration.

The place of arbitration shall be the place of the institution administering the arbitration.

(b) Contracts with contractors being nationals of the Employer's country: As per procedures of NEPCA

## 46. Eligibility

46.1 The Contractor shall have the nationality of an ADB member country. The Contractor shall be deemed to have the nationality of a country if the Contractor is a citizen or is constituted, incorporated, or registered, and operates in conformity with the provisions of the laws of that country. This criterion shall also apply to the determination of the nationality of proposed subcontractors or suppliers for any part of the Contract including



# NEPAL ELECTRICITY AUTHORITY

(An Undertaking of Government of Nepal)  
Project Management Directorate



## KERAUN 132/33 KV SUBSTATION PROJECT

*(A component of  
Electricity Grid Modernization Project)*

### Bidding Document For

**“Procurement of Plant- Design, Supply, Installation and commissioning  
of 132/33kV Air Insulated Substation at Keraun, Morang District with  
associated 33 kV Sub-Transmission Lines”**

**(Procurement of Plant)**

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

Issued on:	<b>10 August 2020</b>
Invitation for Bids No.:	<b>PMD/EGMP/KRON/077/78-01</b>
OCB No.:	<b>PMD/EGMP/ KRON/077/78-01</b>
Employer:	<b>Nepal Electricity Authority</b>
Country:	<b>Nepal</b>

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AUGUST 2020

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**Keraun 132/33 kV Substation Project  
Project Management Directorate  
NEA Training Centre Complex, Kharipati  
Bhaktapur, Nepal  
Telephone: +977-1-6615457**

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## SECTION IV PRICE SCHEDULE

**Note:**

- 1) Bidder is required to quote prices in this Schedule for all the individual items/sub-items.
- 2) The Prices of equipment's are inclusive of type test charges.
- 3) BOQ given is indicative only based on the scope of work as given in Employer's Requirements. The quantities mentioned above may undergo change during detailed engineering to meet the functional requirement and scope of work defined in Employer's Requirements. **The Contractor shall prepare and submit the final BOQ within 90 days of signing of Contract.**
- 4) The bidders are require to quote their price including all taxes and duties applicable in their county / Country of origin, & all business taxes, income taxes (TDS etc) applicable in Nepal. The quoted price shall be exclusive of taxes and duties applicable in Nepal like Custom, VAT etc.



**NEPAL ELECTRICITY AUTHORITY**  
PROJECT MANAGEMENT DIRECTORATE  
**Keraun 132/33 kV Substation Project**  
Schedule of Rates and Prices

**Electricity Grid Modernization Project**

**PMD/EGMP/KRON-077/78-02:Design, Supply, Installation and commissioning of 132/33kV Air Insulated Substation at Keraun, Morang District with associated 33 kV Sub-Transmission Lines**

FC: Foreign Currency

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

LC: Local Currency

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)	Custom, VAT and other taxes
			Unit	Quantity	FC			FC	LC
					Currency#	Unit Rate	Amount		
1	2	3	4	5	6	7	8 = (7) x (5)	9=8	10
<b>Part-1</b>	<b>Keraun 132/33kV Substation</b>								
<b>PART-A</b>	<b>OWNER ASSESSED QUANTITIES</b>								
<b>1</b>	<b>ELECTRICAL WORKS</b>								
<b>1.1</b>	<b>Power transformer</b>								
1.1.1	132/33 kV, Three Phase 40/51.5/63 MVA, ONAN/ONAF Power Transformer complete with On load Tap Changer (OLTC) and RTCC facility with Tank Mounted LA at LV side and Bushing CT on both sides, complete with all accessories as specified		no.	2					
1.1.2	132/11 kV, Three phase 18/22.5 MVA, ONAN/ONAF Power Transformer complete with On load Tap Changer (OLTC) and RTCC facility with Tank Mounted LA at LV side and Bushing CT on both sides complete with all accessories as specified		no.	1					
<b>1.2.</b>	<b>Circuit breakers</b>								
1.2.1	145 kV, 1250 A, 3 phase, SF6 Circuit Breaker, individual pole operation type, complete with all accessories as per specification for lines		set	2					
1.2.2	145 kV, 1250 A, 3 phase, SF6 Circuit Breaker, three pole operation type, complete with all accessories as per specification for Transformer HT.		set	3					

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1	2	3	4	5	6	7	8 = (7) x (5)	9=8	10
1.2.3	145 kV, 2000 A, 3 phase, SF6 Circuit Breaker, three pole operation type, complete with all accessories as per specification for Bus Coupler		set	1					
1.2.4	36 kV, 1600 A, 3 phase, Vacuum Circuit Breaker for incomer, three pole operation type, complete with all accessories as per specification		set	2					
1.2.5	36 kV, 800 A, 3 phase, Vacuum Circuit Breaker for outgoing feeders, three pole operation type, complete with all accessories as per specification		set	7					
<b>1.3.</b>	<b>Disconnecting switches</b>								
1.3.1	145 kV, 1250 A, 3 phase Center Break Disconnecting Switch with Grounding Switch complete with all accessories as per specification		set	2					
1.3.2	145 kV, 2000 A, 3 phase, Center Break Disconnecting Switch without Grounding Switch complete with all accessories as per specification		set	2					
1.3.3	145 kV, 1250 A, 3 phase Center Break Disconnecting Switch without Grounding Switch complete with all accessories as per specification		set	14					
1.3.4	36 KV, 1600 A, 3 phase disconnecting switch without grounding switch complete with all accessories as per specification		set	3					
1.3.5	36 KV, 800A, 3 phase disconnecting switch without grounding switch complete with all accessories as per specification		set	8					
1.3.6	36KV, 800A, 3 phase disconnecting switch with grounding switch complete with all accessories as per specification		set	7					

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1	2	3	4	5	6	7	8 = (7) x (5)	9=8	10
<b>1.4</b>	<b>Instrument transformers</b>								
1.4.1	145 kV, 50 VA, 132/ $\sqrt{3}$ /110/ $\sqrt{3}$ kV, Class 0.5/3P Capacitor Voltage Transformer complete with all accessories as per specification		no.	12					
1.4.2	145 kV, 30 VA, 5 core Current Transformer complete with all accessories as per specification		no.	18					
1.4.3	36 kV, 30 VA, 33/ $\sqrt{3}$ /110/ $\sqrt{3}$ kV Voltage Transformer complete with all accessories asp per specification		no.	3					
1.4.4	36 kV, 30 VA, 3 core Current Transformer complete with all accessories as per specification		no.	27					
<b>1.5</b>	<b>Lightning Arrester</b>								
1.5.1	120 kV, 10 kA, lightning arrestor including discharge counter complete with all accessories as per specification		no.	15					
1.5.2	30 kV, 10 kA lightning arrestor including discharge counter for cable protection complete with all accessories as per specification		no.	39					
1.5.3	9 kV, 10 kA lightening arrestor including discharge counter complete with all accessories as per specification		no.	18					
<b>1.6</b>	<b>Control and relay panel</b>								
1.6.1	132/33 kV transformer control and relay panel complete with all accessories as per specification		set	2					
1.6.2	132/11 kV transformer control and relay panel complete with all accessories as per specification		set	1					
1.6.3	132 kV transmission line control and relay panel complete with all accessories as per specification		set	2					



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1	2	3	4	5	6	7	8 = (7) x (5)	9=8	10
1.6.4	132 kV bus coupler cum bus bar protection control and relay panel complete with all accessories as per specification		set	1					
1.6.5	33kV line control and relay panel complete with all accessories as per specification		set	7					
<b>1.7</b>	<b>12 KV VCB Switchgear Panel with all accessories as per specified</b>								
1.7.1	12 kV Transformer incomer module (2000A) (IP-2) with all accessories as per specification		no	1					
1.7.2	12 kV Line Module(1250A) (IP-1) with all accessories as per specification		no.	5					
1.7.3	12 kV PT module (IP-3) with all accessories as per specification		no.	1					
<b>1.8</b>	<b>Station supply</b>								
1.8.1	300 kVA, 33/0.4 kV station service transformer with current limiting fuse, power cable and all other accessories as required		lot	1					
1.8.2	400V AC Distribution Board including Cable for the specified scope of the work		lot	1					
1.8.3	220 V DC distribution board including cable and accessories to complete the specified scope of work:		lot	1					
1.8.4	48 V DC distribution board including cable and accessories to complete the specified scope of work:		lot	1					
<b>1.9</b>	<b>Battery &amp; Battery Charger</b>								

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1	2	3	4	5	6	7	8 = (7) x (5)	9=8	10
1.9.1	Battery charger for 220 V battery complete with all accessories to complete the specified scope of work (One for 132kV & One for 33kV):		no.	2					
1.9.2	220 V maintenance free lead acid sealed type battery complete with all accessories to complete the specified scope of work (One for 132kV & One for 33kV):		set	2					
1.9.3	Battery charger for 48 V battery complete with all accessories to complete the specified scope of work:		no.	2					
1.9.4	48 V maintenance free lead acid sealed type battery complete with all accessories to complete the specified scope of work		set	2					
<b>1.10</b>	<b>Control and Power cables</b>								
1.10.1	12 kV, 400 sq. mm single core XLPE Copper Power Cable including termination joints for both ends, double pole structure and with all accessories complete from LV sides of 132/11 kV Power Transformers to indoor 11 kV Switchgear Room (Two cable per phase)		m	500					
1.10.2	12 kV, 240 sq.mm 3 core XLPE Copper Power Cable armoured including termination joints for both ends, double pole structure and with all accessories complete for 3 nos of outgoing feeder		m	1000					
1.10.3	33 kV HT armored Copper Cable (1CX400 SQmm) for 5 nos of 33 kV feeder line along with 6 ladder cable trench and termination equipments at both end joints, double pole structure and with all accessories complete.		m	2500					

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<b>1.11</b>	<b>Miscellaneous material</b>								
1.11.1	33kV double arm H structure Dead End Steel tubular Pole with 2 stay set (Fully Galvanized) 11 Meter as per technical Specification.		Set	3					
1.11.2	11kV double arm H structure Dead End Steel tubular Pole with 2 stay set (Fully Galvanized) 11 Meter as per technical Specification.		Set	2					
<b>1.12</b>	<b>Fire Detection &amp; Alarm System</b>								
1.12.1	50 litre foam type, Portable/Trolley/Wheel mounted fire extinguishers		Nos.	2					
1.12.2	4.5 kg CO2 type, Fire Extinguisher		Nos.	10					
1.12.3	22.5 kg Dry Chemical Power (DCP) type, Trolley/Wheel mounted fire extinguishers		Nos.	3					
1.12.4	Smoke detection system in Control Room Building		set	1					
1.12.5	Fire detection and Alarm System in Control Room Building		set	1					
1.13	132 kV post insulator		no.	42					
1.14	33 kV post insulator		no.	42					
<b>2</b>	<b>SUBSTATION AUTOMATION/ COMMUNICATION / SCADA (Based on IEC 61850)</b>								
<b>2.1</b>	<b>SUBSTATION AUTOMATION</b>								
a.	Complete Substation automation system including hardware and software for the substation & remote control stations alongwith associated equipments for the followings as per Technical Specification.								

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i.	132 kV System		Bays	6					
ii.	33kV system		Bays	9					
iii.	11 kV System (Indoor Switchgear)		lot	1					
iv	BCU for auxiliary system		lot	1					
b.	Integration of all 132kV ,33 kV and 11 kV kV Bays under present scope with the SCADA of SIEMENS (SINAUT Spectrum) at Load Dispatch Centre, Kathmandu including supply of Hardware, Software, accessories etc. as per technical specification		Lot	1					
<b>2.2</b>	<b>COMMUNICATION / SCADA</b>								
2.2.1	Digital Protection Coupler		Nos.	4					
2.2.2	Optical Distribution Frame complete in all respects as per technical specifications		Lot	1					
2.2.3	Optical Approach Cable -24 pair Fibre (DWSM -G.652D) along with Installation hardware set for above 24 Fibre, Fibre Optic Approach Cable complete in all respects as per technical specifications		Lot	1					
2.2.4	OPGW -24 core Fibre (DWSM -G.652D) along with Installation hardware set in all respects as per technical specifications		Lot	1				-	
<b>2.3</b>	<b>Telecommunication Equipments</b>								
2.3.1	SDH Equipment (STM-4 MADM upto 4 MSP protected directions)								
(i)	Base Equipment (Common cards, Cross Connect/control cards, optical base cards, power supply cards, power cabling, other hardware and accessories including sub racks, patch cord, DDF etc fully equipped excluding (ii) & (iii) below		Nos.	1					

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(ii)	Optical Interface Cards/SFP								
(a)	L4.1 SFP		Nos.	4					
(iii)	Tributary cards								
(a)	E1 Interface card (Min.8 interfaces per card)		Set	2					
(b)	Giga -Ethernet Interface 10/100/1000 Mbps Base T with Layer-2 switching (Min 4 Interfaces per card)		Nos.	2					
2.3.2	Equipment Cabinets		No.	1					
2.3.3	VOIP telephone instrument with one common switch (min. 8 port)		Nos.	2					
<b>Subtotal of Part A:</b>									
<b>PART-B: VENDOR ASSESSED QUANTITIES</b>									
<b>3</b>	<b>Miscellaneous material</b>								
3.1	Galvanized E.H.S. steel wires of size 7/3.35 for lightning shield wire in take off and internal structures, with accessories to complete the specified scope of works:		lot	1					
3.2	Earthing with conductors, electrode grounding materials and it is connecting with lightning protection system with lightning mast, copper conductor, electrodes etc complete with all accessories for control building & Substation.		lot	1					
3.3	1.1kV power and lighting cable for all works (Control room, Staff quarter, Guard room, Switch yard lighting, road and street light etc) to complete the specified scope of work:		lot	1					
3.4	1.1kV control cable to complete the specified scope of works including that for communication works:		lot	1					

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3.5	Erection Hardware :-Insulator strings, Disc Insulators, Hardware, conductor, bus-bar materials, cable trays, clamps, spacers, connectors including connectors for Transformer, Junction box, buried cable trenches/pipe of equipment & lighting, all accessories etc. for the following 132kV and 33 kV bays, clamps for substation works and connection between gantry & Tower, all complete as per the specified scope of works:		lot	1					
3.6	ACSR "CARDINAL" conductors for 132kV switchyard with necessary hardwares, clamps for connecting, with all accessories for substation works and connection between tower & gantry, complete as per the specified scope of works:		lot	1					
3.7	ACSR "CARDINAL" conductors for 33 kV switchyard with necessary hardwares, clamps for connecting, with all accessories for substation works and for 33 kV overhead connections to the 33 kV lines at Keraun and all other places as required to complete the specified scope of works:		lot	1					
3.8	Tubular bus and Bus Support Insulator for 132 kV Bus including all other accessories and hardwares required to complete the specified scope of works:		lot	1					
3.9	Tubular bus and Bus Support Insulator for 33 kV Bus including all other accessories and hardwares required to complete the specified scope of work:		lot	1					
4.10	Furniture and miscellaneous indoor facilities for control room as per technical Specification.		lot	1					

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					Currency#	Unit Rate	Amount		
1	2	3	4	5	6	7	8 = (7) x (5)	9=8	10
4.11	Lighting system for outdoor Switchyard, Substation area, Entrance & internal Road, Boudary wall periphery (with support of Galvanised pole ehere necessary) as per technical Specification.		lot	1					
<b>Sub total of Part B</b>									
<b>PART-C:</b>	<b>CI: CIVIL AND ARCHITECTURAL WORKS (Steel Structure)</b>								
4.0	<b>STEEL STRUCTURES (Tower, Gantry structures &amp; Equipment support structures)</b>								
4.1	Lattice Structure for towers, beams and equipments including peak plates/pack washers and guest paltes including foundation bolts(nuts, washers, MS plate welded at the bottom)								
4.1.1	Lattice structure & foundation bolts		MT	90					
4.1.2	Fastners for towers, beams and equipment support strcutures		MT	5					
<b>5</b>	<b>PART-C2: MANDATORY SPARES (Break up of Lumpsum quantity shall be as per Annexure-I, Section Project of Technical Specification)</b>								
<b>5.1</b>	<b>For 132/33 kV Power Transformer</b>								
5.1.1	Phase & neutral bushing (1 no. each for 132/33 kV transformer)		sets	1					
5.1.2	Dial type thermometer(OTI, WTI)		nos	1					
5.1.3	Insulating oil ( 10% of total supply)		lot	1					
5.1.4	Indicating lamps (25% of used)		lot	1					
5.1.5	All types at fuses (25% of used )		lot	1					
5.1.6	All type of auxillary current, voltage and thermal relays, contactors for control, protection and cooling circuit (one of each type)		set	1					
5.1.7	OLTC motor contactor		set	1					

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1	2	3	4	5	6	7	8 = (7) x (5)	9=8	10
5.1.8	Oil level gauge		nos	1					
5.1.9	Complete set of gaskets for 132/33 kV transformer		set	1					
5.1.10	Complete set of Pressure Relief Devices		sets	1					
5.1.11	Complete set of Bucholz relay (for 63 MVA transformer)		sets	1					
<b>5.2</b>	<b>For 132/11 kV Power Transformer</b>								
5.2.1	Phase & neutral bushing (1 no. each for 132/11 kV transformer)		Set	1					
5.2.2	Dial type thermometer(OTI, WTI)		Set	1					
5.2.3	Oil Level Gauges		Set	1					
5.2.4	Insulating Oil (10% of total supply)		Lot	1					
5.2.5	Indicating Lamps (25% of used)		Lot	1					
5.2.6	All types of Fuses (25% of used)		Lot	1					
5.2.7	Complete set of Gaskets of each type		Set	1					
5.2.8	Complete set of Pressure Relief Devices		Set	1					
5.2.9	All type of Auxiliary, Current, Voltage and Thermal Relays, Contactors and Timers for control, protection and cooling circuit(one of each type)		Set	1					
5.2.10	OLTC Motor Contactor		Set	1					



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1	2	3	4	5	6	7	8 = (7) x (5)	9=8	10
5.2.11	Complete set of Buchholz relay		Set	1					
<b>5.3.1</b>	<b>For 132 kV SF6 circucit breaker, 1 Pole type</b>								
5.3.1.1	Tripping coils		nos.	3					
5.3.1.2	Closing coils		nos.	3					
5.3.1.3	Pressure switch, relays and contactors (one of each type)		sets	1					
5.3.1.4	Motor for mechanism		nos.	1					
5.3.1.5	Gas in sealed non returnable bottles ,net		kgs	50					
5.3.1.6	Complete set of Sealing rings & Gaskets		sets	1					
5.3.1.7	SF6 gas filling nozzle & adaptor		sets	1					
<b>5.3.2</b>	<b>For 132 kV SF6 circucit breaker, 3 Pole type</b>								
5.3.2.1	Tripping coils		nos.	3					
5.3.2.2	Closing coils		nos.	3					
5.3.2.3	Pressure switch, relays and contactors (one of each type)		sets	1					
5.3.2.4	Motor for mechanism		nos.	1					
5.3.2.5	Gas in sealed non returnable bottles ,net		kgs	50					

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					Currency#	Unit Rate	Amount		
1	2	3	4	5	6	7	8 = (7) x (5)	9=8	10
5.3.2.6	Complete set of Sealing rings & Gaskets		sets	1					
5.3.2.7	SF6 gas filling nozzle & adaptor		sets	1					
<b>5.4</b>	<b>For 33 kV Vacuum circuit breaker</b>								
5.4.1	complete set of interrupter		nos.	1					
5.4.2	Tripping coils		nos.	1					
5.4.3	Closing coils		nos.	1					
5.4.4	Relays and contactors (one of each type)		sets	1					
5.4.5	Motor for mechanism		nos.	1					
5.4.6	Complete set of Sealing rings & Gaskets		sets	1					
<b>5.5</b>	<b>For 12 kV VCB Switchgears</b>								
5.5.1	complete set of interrupter		Nos.	1					
5.5.2	Tripping Coils		Nos.	3					
5.5.3	Closing Coils		Nos.	3					
5.5.4	Spring Charging Motor		Set	1					
5.5.5	3 Phase Overcurrent Relay with ground fault for 11kV Side		Sets	1					
5.5.6	Ammeter		Nos.	1					

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1	2	3	4	5	6	7	8 = (7) x (5)	9=8	10
5.5.7	Voltmeter		Nos.	1					
5.5.8	kVA Meter		Nos.	1					
5.5.9	11 kV CTs as in Outgoing Feeder ( 3 Nos)		Sets	1					
5.5.10	Operating Handle		Sets	1					
5.5.11	Indicating Lamps (100% of used)		Set	1					
<b>5.6</b>	<b>For 132 kV disconnecting switches</b>								
5.6.1	Porcelain insulator		nos.	2					
5.6.2	Main contact assemblies		sets	2					
5.6.3	Auxiliary contacts		sets	2					
5.6.4	Interlocking coil		nos	2					
5.6.5	Motor for driving mechanism		nos	2					
5.6.6	Contactora for the mechanism		nos.	2					
<b>5.7</b>	<b>For 33 kV disconnecting switches</b>								
5.7.1	Porcelain insulator		nos.	1					
5.7.2	Main contact assemblies		sets	1					
5.7.3	Auxiliary contacts		sets	1					
5.7.4	Interlocking coil		nos	1					

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1	2	3	4	5	6	7	8 = (7) x (5)	9=8	10
<b>5.8</b>	<b>Instrument transformers of used type</b>								
5.8.1	132 kV Current transformer		nos.	1					
5.8.2	132 kV Capacitive voltage transformer		nos.	1					
5.8.3	33 kV Current Transformer		nos.	1					
5.8.4	33 kV Voltage transformer		nos.	1					
<b>5.9.</b>	<b>Lighting Arrestor</b>								
5.9.1	120 kV, 10 kA lightning arrester including discharge counter complete with all accessories as per specification		nos.	6					
5.9.2	30 kV, 10 kA lightning arrester including discharge counter complete with all accessories as per specification		nos.	6					
5.9.3	9 kV, 10 kA lightening arrester including discharge counter complete with all accessories as per specification		nos.	6					
<b>5.10</b>	<b>For 132 kV control and relay panel</b>								
5.10.1	Indicating lamps		nos	100					
5.10.2	Fuses for each type (300% of used)		lot	1					
5.10.3	Color caps of each color for indicating lamps		lot	30					
5.10.4	One of each type of switch, relay, timer and other special devices		sets	1					
5.10.5	Each type of auxiliary relays		sets	1					
5.10.6	Differential relay for transformer protection		nos	1					
5.10.7	Directional over current relay for line protection		nos	1					
5.10.8	3 phase overcurrent protection relay ( non directional)		nos	1					

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1	2	3	4	5	6	7	8 = (7) x (5)	9=8	10
5.10.9	Distance relay		nos	1					
5.10.10	Syncro check relay		nos	1					
5.10.11	Tripping circuit control relay		nos	1					
5.10.12	Ammeter with double scale		nos	1					
5.10.13	Voltmeter		nos	1					
5.10.14	Watt meter		nos	1					
5.10.15	MVAR meter		nos	1					
5.10.16	Frequency meter		nos	1					
5.10.17	Energy meter		nos	1					
<b>5.11</b>	<b>For 33 kV control and relay panel</b>								
5.11.1	Indicating lamps		no.	50					
5.11.2	Fuses for each type (300% of used)		lot	1					
5.11.3	Color caps of each color for indicating lamps		no.	30					
5.11.4	One of each type of switch, relay, timer and other special devices		lot	1					
5.11.5	Each type of auxiliary relays		lot	1					
5.11.6	3 phase overcurrent protection relay		lot	1					
5.11.7	3 Phase Transformer Differential Relays		no.	1					
5.11.8	Tripping circuit control relay		no.	1					
5.11.9	Ammeter with double scale		no	1					
5.11.10	Voltmeter		no.	1					
5.11.11	Watt meter		no.	1					

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5.11.12	MVAR meter		no.	1					
5.11.13	Energy meter		no.	1					
<b>5.12</b>	<b>132 kV post insulator</b>		no.	10					
<b>5.13</b>	<b>33 kV post insulator</b>		no.	10					
<b>5.14</b>	<b>Battery charger (48 V &amp; 220 V)</b>								
5.14.1	Fuses of each type (300% of used)		lot	1					
5.14.2	Indicating lamp		no.	20					
5.14.3	One of each type of switch, relay and other special devices		lot	1					
5.14.4	Ammeter		no.	1					
5.14.5	Voltmeter		no.	1					
<b>5.15</b>	<b>Communication Cards</b>								
5.15.1	Digital Protection Coupler		set	2					
5.15.2	SDH Equipment								
(i)	Common cards, Cross Connect/control cards, optical base cards, power supply cards, power cabling, other hardware and accessories (each)		Set	1					
(ii)	Optical Interface Cards/SFP								
(a)	L4.1 SFP		Nos.	1					
(iii)	Tributary cards								
(a)	E1 Interface card (Min.8 interfaces per card)		Nos	1					
(b)	Giga -Ethernet Interface 10/100/1000 Mbps Base T with Layer-2 switching (Min 4 Interfaces per card)		Nos.	1					
5.15.3	VOIP telephone instrument with one common switch (min. 8 port)		Nos.	1					

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<b>6</b>	<b>Testing Equipments</b>								
6.1	5 Nos. Digital Multimeter, 2 Nos. Tong Tester, 2 Nos. 1 kV Insulation Tester, 1 No. 5 kV motor operated Insulation Tester, 1 No. High Voltage Test Kit (80 kV), Transformer Oil Test Kit (Digital, 80 kV) & 1 No. Trimble C3 2" Total station as per specifications as per specifications		Lot	1					
Sub total of (C)									
<b>Sub Total of Part 1</b>									
<b>Part 2</b>	<b>Keraun-Rangeli 33kV Transmission Line</b>								
<b>PART-A:</b>	<b>OWNER ASSESSED QUANTITIES</b>								
A1	Supply and Delivery of Works for 33kV Line (Steel tubular pole : equivalent strength or more than 540 SP-66 (322 Kg)-IS 2713 Part III)								
1	Steel Tubular Pole.(Fully Galvanized) 12 Meter, equivalent strength or more than 540 SP-66 (322 Kg)-IS 2713 Part III		Nos	510					
2	33kV Pin Insulator with Spindle, Nuts Bolts, washer, top tie including all accessories complete		Nos	2340					
3	11 kV Disc Insulator with deadend clamp (70 KN)		Nos	4320					
4	Tension set with Brack Strap, Ball and Socket Eye		Set	1440					
5	PG Clamp suitable for ACSR "Wolf"		Nos	1710					
6	Fabrication, galvanising and supply of following Steel Structures (Members, Bracings, Channels) including stubs, nuts, bolts, all types of washers, packplates, step bolts and gusset plates including foundation bolts.(all foundation & gantry)								

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1	2	3	4	5	6	7	8 = (7) x (5)	9=8	10
i	Support Structure for Poles, 33kV Line including Member, bracing, arm etc.		MT	55					
ii	Fastners and step bolts.(Pole clamp, Nuts, Bolts, Arming & Washers)		MT	8					
7	Supply of Earthing and lightning protection materials including necessary connectors risers etc. complete in all respect( but excluding LM structures for Lightning protection) for line								
i	33kV Lighting arrester (3nos)		Set	6					
ii	Earting materials including rod, strup, connector, nutbolt with all accessories.		Set	6					
8	HT stay set		Set	690					
9	ACSR Conductor "WOLF"(0.15 sq. in., 67.34 KN)		Km.	94.5					
A2	Supply and Delivery of Materials for 33kV Line (Underground Cables, Three Core, Double Circuit)								
1	33kV Underground Power Cable (Al conductor, XLPE insulated, 400 sq.mm., Three core, armoured)		km	0.25					
2	36kV Straight Through Joints (three core) including all accessories complete		Set	1					
3	33kV Cable Termination Kit Outdoor Type (three core) including all accessories complete		Set	2					
4	Flexible Pipe (225mm dia) for laying Three Core UG Cable including all accessories complete		km	0.25					
5	HDPE Pipe (225mm dia, 6kg) PN-6 for laying Three Core UG Cable at road crossings including all accessories complete		km	0.25					



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1	2	3	4	5	6	7	8 = (7) x (5)	9=8	10
6	Sheath Voltage Limitor, including all accessories complete (3 Nos. per set)		Set	1					
7	33kV Power Fuse (Drop Out Type) including all accessories complete		Set	2					
8	30 kV, 10 kA Pole Mounted Lightning Arrester including all accessories complete		Set	2					
<b>Sub total (A2)</b>									
<b>Sub Total of Part A</b>									
<b>PART-B: VENDOR ASSESSED QUANTITIES</b>									
1	Preformed Binding Wire suitable for ACSR "Wolf"		Lot	1					
<b>Sub Total of Part B</b>									
<b>Subtotal of Part 2</b>									
<b>Part 3 Keraun-Biratchok 33kV Transmission Line</b>									
<b>Part A: OWNER ASSESSED QUANTITIES</b>									
A1	Supply and Delivery of Works for 33kV Line (Steel tubular pole : equivalent strength or more than 540 SP-66 (322 Kg)-IS 2713 Part III)								
1	Steel Tubular Pole.(Fully Galvanized) 12 Meter, equivalent strength or more than 540 SP-66 (322 Kg)-IS 2713 Part III		Nos	850					
2	33kV Pin Insulator with Spindle, Nuts Bolts, washer, top tie including all accessories complete		Nos	3900					
3	11 kV Disc Insulator with deadend clamp (70 KN)		Nos	7200					
4	Tension set with Brack Strap, Ball and Socket Eye		Set	2400					
5	PG Clamp suitable for ACSR "Wolf"		Nos	2850					

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					Currency#	Unit Rate	Amount		
1	2	3	4	5	6	7	8 = (7) x (5)	9=8	10
6	Fabrication, galvanising and supply of following Steel Structures (Members, Bracings, Channels) including stubs, nuts, bolts, all types of washers, packplates, step bolts and gusset plates including foundation bolts.(all foundation & gantry)								
i	Support Structure for Poles, 33kV Line.		MT	85					
ii	Lattice Structure for 33kV Tower including Foundation Bolts		MT	6					
iii	Fastners and step bolts.(Pole clamp, Nuts, Bolts, Arming bolts & Washers)		MT	12					
7	Supply of Earthing and lightning protection materials including necessary connectors risers etc. complete in all respect( but excluding LM structures for Lightning protection) for line								
i	33kV Lighting arrester (3nos)		Set	9					
ii	Earting materials including rod, strup, connector, nutbolt with all accessories.		Set	9					
8	HT stay set		Set	1150					
9	ACSR Conductor "WOLF"(0.15 sq. in., 67.34 KN)		Km.	157.5					
<b>Total (A1)</b>									
A2	<b>Supply and Delivery of Materials for 33kV Line (Underground Cables, Three Core, Double Circuit)</b>								
1	33kV Underground Power Cable (Al conductor, XLPE insulated, 400 sq.mm., Three core, armoured)		km	0.25					
2	36kV Straight Through Joints (three core) including all accessories complete		Set	1					

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**Keraun 132/33 kV Substation Project**  
Schedule of Rates and Prices

*Electricity Grid Modernization Project*

*PMD/EGMP/KRON-077/78-02:Design, Supply, Installation and commissioning of 132/33kV Air Insulated Substation at Keraun, Morang District with associated 33 kV Sub-Transmission Lines*

**FC: Foreign Currency**

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

**LC: Local Currency**

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)	Custom, VAT and other taxes
			Unit	Quantity	FC			FC	LC
					Currency#	Unit Rate	Amount		
1	2	3	4	5	6	7	8 = (7) x (5)	9=8	10
3	33kV Cable Termination Kit Outdoor Type (three core) including all accessories complete		Set	2					
4	Flexible Pipe (225mm dia) for laying Three Core UG Cable including all accessories complete		km	0.25					
5	HDPE Pipe (225mm dia, 6kg) PN6 for laying Three Core UG Cable at road crossings including all accessories complete		km	0.25					
6	Sheath Voltage Limitor including all accessories complete (3 Nos. per set)		Set	1					
7	33kV Power Fuse (Drop Out Type) including all accessories complete		Set	2					
8	30 kV, 10 kA Pole Mounted Lightning Arrester including all accessories complete, 3 Nos		Set	2					
<b>Total (A2)</b>									
A3	Supply and Delivery for 33kV one bay extension work at Biratchowk 33kV Substation.								
a	Equipment item								
1	36 kV, 800 A, 3 phase, Vaccum Circuit Breaker for outgoing feeders, three pole operation type, complete with all accessories as per specification		set	1					
2	36 KV, 800A, 3 phase disconnecting switch without grounding switch complete with all accessories as per specification		set	1					
3	36KV, 800A, 3 phase disconnecting switch with grounding switch complete with all accessories as per specification		set	1					

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**Electricity Grid Modernization Project**

**PMD/EGMP/KRON-077/78-02:Design, Supply, Installation and commissioning of 132/33kV Air Insulated Substation at Keraun, Morang District with associated 33 kV Sub-Transmission Lines**

FC: Foreign Currency

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

LC: Local Currency

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)	Custom, VAT and other taxes
			Unit	Quantity	FC			FC	LC
					Currency#	Unit Rate	Amount		
1	2	3	4	5	6	7	8 = (7) x (5)	9=8	10
4	36 kV, 30 VA, 33/√3/110/√3 kV Voltage Transformer complete with all accessories asp per specification		no.	3					
5	36 kV, 30 VA, 3 core Current Transformer complete with all accessories as per specification		no.	3					
6	30 kV, 10 kA lightning arrester including discharge counter for cable protection complete with all accessories as per specification		no.	3					
7	33kV line control and relay panel complete with all accessories as per specification		no.	1					
8	Battery charger for 110 V battery complete with all accessorie to complete the specified scope of work for 33kV.		no.	1					
9	110 V maintenance free lead acid sealed type battery complete with all accessories to complete the specified scope of work for 33kV.		no.	1					
10	Support Insulator, Conductor, including all other accessories required to complete the extension of 33 kV Bus		lot	1					
11	Fabrication, galvanising and supply of following Steel Structures (Members, Bracings, Channels) including nuts, bolts, all types of washers, packplates, step bolts and gusset plates including foundation bolts.(all foundation & gantry)								
i	Support Structure for gantry of 33kv equipments, bus, internal and Take off includings Foundation Bolts.		MT	5					
iii	Fastners and step bolts.(Nuts,Bolts & Washers)		MT	1					
12	Erection Hardware								

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FC: Foreign Currency

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

LC: Local Currency

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)	Custom, VAT and other taxes
			Unit	Quantity	FC			FC	LC
					Currency#	Unit Rate	Amount		
1	2	3	4	5	6	7	8 = (7) x (5)	9=8	10
	Galvanized E.H.S. steel wires of size 7/3.35 for lightning shield wire, Conductor, Al tube, bus-bar materials, cable trays, clamps, spacers, connectors including equipment connectors, Junction box, earthwire, buried cable trenches/pipe equipment & lighting, all accessories etc. for the following:								
i	Line Bay		Set	1					
13	Mandatory Spares								
i	33 KV CIRCUIT BREAKER:								
1	Complete Circuit Breaker pole of each type & rating complete with interrupter, main circuit enclosure and Marshalling Box with operating mechanism		Nos.	1					
2	Rubber gaskets, 'O' rings and seals (1 No. of each type)		Sets	1					
3	Trip coil assembly with resistor as applicable		Sets	3					
4	Closing coil assembly with resistor as applicable .		Sets	3					
5	Relays, Power contactors, push buttons, timers & MCBs etc (1 No. of each type & rating)		Sets	1					
6	Auxiliary switch assembly of each type		Sets	1					
7	Vacuum Interrrupter		Nos.	3					
ii	33 KV ISOLATORS :								
1	Complete set of 3-phase dis-connector including main circuit, enclosure, driving mechanism (one no of each type)		Sets	1					
2	Copper contact fingers for dis-connector male & female contact for one complete (3-phase) dis-connector of each type and rating		Sets	1					
iii	C&R PANELS								

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**FC: Foreign Currency**

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

**LC: Local Currency**

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)	Custom, VAT and other taxes
			Unit	Quantity	FC			FC	LC
					Currency#	Unit Rate	Amount		
1	2	3	4	5	6	7	8 = (7) x (5)	9=8	10
1	Line control protection panel :								
1.1	Over current & E/F Protection Relay		No.	1					
1.2	Voltage Protection Relay		No.	1					
2	Breaker Relay panel: Part of CRP								
2.1	Breaker failure relay		No.	1					
2.2	Trip circuit supervision relay		Nos.	2					
2.3	Self reset trip relay (relay of each type)		Set	1					
2.4	Hand reset trip relay(relay of each type)		Set	1					
2.5	Timer relay(relay of each type)		Set	1					
2.6	DC supervision relay(relay of each type)		Set	1					
2.7	Auxiliary relays(relay of each type)		Set	1					
3	Ammeter		No.	1					
4	Voltmeter		No.	1					
5	Indicting Lamps and Fuses (100% of Used)		Lot	1					
<b>Sub total (A3)</b>									
<b>Subtotal of Part A:</b>									
<b>PART-B: VENDOR ASSESSED QUANTITIES</b>									
1	<b>Preformed Binding Wire suitable for ACSR "Wolf"</b>		Lot	1					
2	Earthing and lightning protection including necessary connectors/connections, risers etc. complete in all respect( but excluding LM structures for Lightning protection) for line and Substation								
i	Earth Conductor (copper)		Lot	1					
ii	Earth Rod (copper clad steel)		Lot	1					

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*Electricity Grid Modernization Project*

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**FC: Foreign Currency**

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

**LC: Local Currency**

Item No.	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)	Custom, VAT and other taxes
			Unit	Quantity	FC			FC	LC
					Currency#	Unit Rate	Amount		
1	2	3	4	5	6	7	8 = (7) x (5)	9=8	10
3	POWER & CONTROL CABLES								
i	Power Cables(PVC)- (1.1kV grade)		Lot	1					
ii	Control Cable (PVC)- (1.1kV grade)		Lot	1					
iii	Cable glands, lugs & straight through joints for Power & Control cables		Lot	1					
<b>SUB-TOTAL-B</b>									
<b>Subtotal of Part 3:</b>									
<b>Total for 132/33kV KERAUN Substation (Part-1+ Part-2+ Part 3)</b>									
<b>Total for Schedule 1 ( Total of column 9 to be carried forward to Schdule 5: Grand Summary)</b>									

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

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

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

\* Strike-out whichever is not applicable.

**Name of Bidder:**

**Signature of Bidder:**

**(Printed Name)**

**(Designation)**

**(Common Seal)**

**Date:**

# NEPAL ELECTRICITY AUTHORITY

PROJECT MANAGEMENT DIRECTORATE

**Keraun 132/33kV Substation Project**

Schedule of Rates and Prices

## Electricity Grid Modernization Project

PMD/EGMP/KRON-077/78-02:Design, Supply, Installation and commissioning of 132/33kV Air Insulated Substation at Keraun, Morang District with associated 33 kV Sub-Transmission Lines

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

**LC: Local Currency (ALL Price in Local Currency)**

Item No.	Item description	Unit	Quantity	Ex Factory Price (Excluding VAT) in LC		Inland transportation to site in LC		Total Amount (Excluding Taxes )	VAT and other taxes
				Unit Rate	Amount	Unit Rate	Amount		
				5	6 = (4) x (5)	7	8=(4)x(7)		
1	2	3	4	5	6 = (4) x (5)	7	8=(4)x(7)	9=6+8	10
<b>Total for Schedule 2 (Total of column 9 to be carried forward to Schdule 5: Grand Summary)</b>									

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

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

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

\* Strike-out whichever is not applicable.

<sup>a</sup> *Specify currency in accordance with ITB 19.1 of the BDS.*

<sup>b</sup> *Column 5 Price shall include all customs duties and sales and other taxes already paid or payable on the components and raw materials used in the*

**Name of Bidder:**

**Signature of Bidder:**

**(Printed Name)**

**(Designation)**

**(Common Seal)**

**Date:**



# NEPAL ELECTRICITY AUTHORITY

PROJECT MANAGEMENT DIRECTORATE

Keraun 132/33kV Substation Project

Schedule of Rates and Prices

## Electricity Grid Modernization Project

PMD/EGMP/KRON-077/78-02: Design, Supply, Installation and commissioning of 132/33kV Air Insulated Substation at Keraun, Morang District with associated 33 kV Sub-Transmission Lines

### Schedule A-3: Design Services

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

NOTE: The design cost is included in schedule 1.

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

**Date:**

**NEPAL ELECTRICITY AUTHORITY**  
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**Electricity Grid Modernization Project**

PMD/EGMP/KRON-077/78-02:Design, Supply, Installation and commissioning of 132/33kV Air Insulated Substation at Keraun, Morang District with associated 33 kV Sub-Transmission Lines

**Schedule No. 4 (a): Installation and Other Services****FC: Foreign Currency****(a): Installation and Construction Charges****LC: Local Currency**

Sl. No.	Item Description	Installation Charges								
		Country of Origin	Type & Designation	Unit	Qty.	Portion in Foreign Currency			Portion in Nepalese Currency (in NPR)	
						Currency #	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
<b>Part-1</b>	<b>Keraun 132/33kV Substation</b>									
<b>PART-A</b>	<b>OWNER ASSESSED QUANTITIES</b>									
<b>1</b>	<b>ELECTRICAL WORKS</b>									
<b>1.1</b>	<b>Power transformer</b>									
1.1.1	132/33 kV, Three Phase 40/51.5/63 MVA, ONAN/ONAF Power Transformer complete with On load Tap Changer (OLTC) and RTCC facility with Tank Mounted LA at LV side and Bushing CT on both sides, complete with all accessories as specified			no.	2					
1.1.2	132/11 kV, Three phase 18/22.5 MVA, ONAN/ONAF Power Transformer complete with On load Tap Changer (OLTC) and RTCC facility with Tank Mounted LA at LV side and Bushing CT on both sides complete with all accessories as specified			no.	1					
<b>1.2.</b>	<b>Circuit breakers</b>									
1.2.1	145 kV, 1250 A, 3 phase, SF6 Circuit Breaker, individual pole operation type, complete with all accessories as per specification for lines			set	2					
1.2.2	145 kV, 1250 A, 3 phase, SF6 Circuit Breaker, three pole operation type, complete with all accessories as per specification for Transformer HT.			set	3					
1.2.3	145 kV, 2000 A, 3 phase, SF6 Circuit Breaker, three pole operation type, complete with all accessories as per specification for Bus Coupler			set	1					
1.2.4	36 kV, 1600 A, 3 phase, Vacuum Circuit Breaker for incomer, three pole operation type, complete with all accessories as per specification			set	2					

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PMD/EGMP/KRON-077/78-02:Design, Supply, Installation and commissioning of 132/33kV Air Insulated Substation at Keraun, Morang District with associated 33 kV Sub-Transmission Lines

**Schedule No. 4 (a): Installation and Other Services****FC: Foreign Currency****(a): Installation and Construction Charges****LC: Local Currency**

Sl. No.	Item Description	Installation Charges								
		Country of Origin	Type & Designation	Unit	Qty.	Portion in Foreign Currency			Portion in Nepalese Currency (in NPR)	
						Currency #	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
1.2.5	36 kV, 800 A, 3 phase, Vacuum Circuit Breaker for outgoing feeders, three pole operation type, complete with all accessories as per specification			set	7					
<b>1.3.</b>	<b>Disconnecting switches</b>									
1.3.1	145 kV, 1250 A, 3 phase Center Break Disconnecting Switch with Grounding Switch complete with all accessories as per specification			set	2					
1.3.2	145 kV, 2000 A, 3 phase, Center Break Disconnecting Switch without Grounding Switch complete with all accessories as per specification			set	2					
1.3.3	145 kV, 1250 A, 3 phase Center Break Disconnecting Switch without Grounding Switch complete with all accessories as per specification			set	14					
1.3.4	36 KV, 1600 A, 3 phase disconnecting switch without grounding switch complete with all accessories as per specification			set	3					
1.3.5	36 KV, 800A, 3 phase disconnecting switch without grounding switch complete with all accessories as per specification			set	8					
1.3.6	36KV, 800A, 3 phase disconnecting switch with grounding switch complete with all accessories as per specification			set	7					
<b>1.4</b>	<b>Instrument transformers</b>									
1.4.1	145 kV, 50 VA, 132/√3 /110/√3 kV, Class 0.5/3P Capacitor Voltage Transformer complete with all accessories as per specification			no.	12					
1.4.2	145 kV, 30 VA, 5 core Current Transformer complete with all accessories as per specification			no.	18					

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PMD/EGMP/KRON-077/78-02:Design, Supply, Installation and commissioning of 132/33kV Air Insulated Substation at Keraun, Morang District with associated 33 kV Sub-Transmission Lines

**Schedule No. 4 (a): Installation and Other Services****FC: Foreign Currency****(a): Installation and Construction Charges****LC: Local Currency**

Sl. No.	Item Description	Installation Charges								
		Country of Origin	Type & Designation	Unit	Qty.	Portion in Foreign Currency			Portion in Nepalese Currency (in NPR)	
						Currency #	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
1.4.3	36 kV, 30 VA, 33/√3/110/√3 kV Voltage Transformer complete with all accessories as per specification			no.	3					
1.4.4	36 kV, 30 VA, 3 core Current Transformer complete with all accessories as per specification			no.	27					
<b>1.5</b>	<b>Lightning Arrester</b>									
1.5.1	120 kV, 10 kA, lightning arrester including discharge counter complete with all accessories as per specification			no.	15					
1.5.2	30 kV, 10 kA lightning arrester including discharge counter for cable protection complete with all accessories as per specification			no.	39					
1.5.3	9 kV, 10 kA lightning arrester including discharge counter complete with all accessories as per specification			no.	18					
<b>1.6</b>	<b>Control and relay panel</b>									
1.6.1	132/33 kV transformer control and relay panel complete with all accessories as per specification			set	2					
1.6.2	132/11 kV transformer control and relay panel complete with all accessories as per specification			set	1					
1.6.3	132 kV transmission line control and relay panel complete with all accessories as per specification			set	2					
1.6.4	132 kV bus coupler cum bus bar protection control and relay panel complete with all accessories as per specification			set	1					
1.6.5	33kV line control and relay panel complete with all accessories as per specification			set	7					
<b>1.7</b>	<b>12 KV VCB Switchgear Panel with all accessories as per specified</b>									

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PMD/EGMP/KRON-077/78-02:Design, Supply, Installation and commissioning of 132/33kV Air Insulated Substation at Keraun, Morang District with associated 33 kV Sub-Transmission Lines

**Schedule No. 4 (a): Installation and Other Services****FC: Foreign Currency****(a): Installation and Construction Charges****LC: Local Currency**

Sl. No.	Item Description	Installation Charges								
		Country of Origin	Type & Designation	Unit	Qty.	Portion in Foreign Currency			Portion in Nepalese Currency (in NPR)	
						Currency #	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
1.7.1	12 kV Transformer incomer module (2000A) (IP-2) with all accessories as per specification			no	1					
1.7.2	12 kV Line Module(1250A) (IP-1) with all accessories as per specification			no.	5					
1.7.3	12 kV PT module (IP-3) with all accessories as per specification			no.	1					
<b>1.8</b>	<b>Station supply</b>									
1.8.1	300 kVA, 33/0.4 kV station service transformer with current limiting fuse, power cable and all other accessories as required			lot	1					
1.8.2	400V AC Distribution Board including Cable for the specified scope of the work			lot	1					
1.8.3	220 V DC distribution board including cable and accessories to complete the specified scope of work:			lot	1					
1.8.4	48 V DC distribution board including cable and accessories to complete the specified scope of work:			lot	1					
<b>1.9</b>	<b>Battery &amp; Battery Charger</b>									
1.9.1	Battery charger for 220 V battery complete with all accessories to complete the specified scope of work (One for 132kV & One for 33kV):			no.	2					
1.9.2	220 V maintenance free lead acid sealed type battery complete with all accessories to complete the specified scope of work (One for 132kV & One for 33kV):			set	2					
1.9.3	Battery charger for 48 V battery complete with all accessories to complete the specified scope of work:			no.	2					

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PMD/EGMP/KRON-077/78-02:Design, Supply, Installation and commissioning of 132/33kV Air Insulated Substation at Keraun, Morang District with associated 33 kV Sub-Transmission Lines

**Schedule No. 4 (a): Installation and Other Services****FC: Foreign Currency****(a): Installation and Construction Charges****LC: Local Currency**

Sl. No.	Item Description	Installation Charges								
		Country of Origin	Type & Designation	Unit	Qty.	Portion in Foreign Currency			Portion in Nepalese Currency (in NPR)	
						Currency #	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
1.9.4	48 V maintenance free lead acid sealed type battery complete with all accessories to complete the specified scope of work			set	2					
<b>1.10</b>	<b>Control and Power cables</b>									
1.10.1	12 kV, 400 sq. mm single core XLPE Copper Power Cable including termination joints for both ends, double pole structure and with all accessories complete from LV sides of 132/11 kV Power Transformers to indoor 11 kV Switchgear Room (Two cable per phase)			m	500					
1.10.2	12 kV, 240 sq.mm 3 core XLPE Copper Power Cable armoured including termination joints for both ends, double pole structure and with all accessories complete for 3 nos of outgoing feeder			m	1000					
1.10.3	33 kV HT armored Copper Cable (1CX400 SQmm) for 5 nos of 33 kV feeder line along with 6 ladder cable trench and termination equipments at both end joints, double pole structure and with all accessories complete.			m	2500					
<b>1.11</b>	<b>Miscellaneous material</b>									
1.11.1	33kV double arm H structure Dead End Steel tubular Pole with 2 stay set (Fully Galvanized) 11 Meter as per technical Specification.			Set	3					
1.11.2	11kV double arm H structure Dead End Steel tubular Pole with 2 stay set (Fully Galvanized) 11 Meter as per technical Specification.			Set	2					
<b>1.12</b>	<b>Fire Detection &amp; Alarm System</b>									
1.12.1	50 litre foam type, Portable/Trolley/Wheel mounted fire extinguishers			Nos.	2					
1.12.2	4.5 kg CO2 type, Fire Extinguisher			Nos.	10					

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**Schedule No. 4 (a): Installation and Other Services****FC: Foreign Currency****(a): Installation and Construction Charges****LC: Local Currency**

Sl. No.	Item Description	Installation Charges								
		Country of Origin	Type & Designation	Unit	Qty.	Portion in Foreign Currency			Portion in Nepalese Currency (in NPR)	
						Currency #	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
1.12.3	22.5 kg Dry Chemical Power (DCP) type, Trolley/Wheel mounted fire extinguishers			Nos.	3					
1.12.4	Smoke detection system in Control Room Building			set	1					
1.12.5	Fire detection and Alarm System in Control Room Building			set	1					
1.13	132 kV post insulator			no.	42					
1.14	33 kV post insulator			no.	42					
<b>2</b>	<b>SUBSTATION AUTOMATION/ COMMUNICATION / SCADA (Based on IEC 61850)</b>									
<b>2.1</b>	<b>SUBSTATION AUTOMATION</b>									
a.	Complete Substation automation system including hardware and software for the substation & remote control stations alongwith associated equipments for the followings as per Technical Specification.									
i.	132 kV System			Bays	6					
ii.	33kV system			Bays	9					
iii.	11 kV System (Indoor Switchgear)			lot	1					
iv.	BCU for auxilary system			lot	1					
b.	Integration of all 132kV ,33 kV and 11 kV kV Bays under present scope with the SCADA of SIEMENS (SINAUT Spectrum) at Load Dispatch Centre, Kathmandu including supply of Hardware, Software, accessories etc. as per TS Section Project.			Lot	1					
<b>2.2</b>	<b>COMMUNICATION / SCADA</b>									
2.2.1	Digital Protection Coupler			Nos.	4					
2.2.2	Optical Distribution Frame complete in all respects as per technical specifications			Lot	1					

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**Schedule No. 4 (a): Installation and Other Services****FC: Foreign Currency****(a): Installation and Construction Charges****LC: Local Currency**

Sl. No.	Item Description	Installation Charges								
		Country of Origin	Type & Designation	Unit	Qty.	Portion in Foreign Currency			Portion in Nepalese Currency (in NPR)	
						Currency #	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
2.2.3	Optical Approach Cable -24 pair Fibre (DWSM -G.652D) along with Installation hardware set for above 24 Fibre, Fibre Optic Approach Cable complete in all respects as per technical specifications			Lot	1					
2.2.4	OPGW -24 core Fibre (DWSM -G.652D) along with Installation hardware set in all respects as per technical specifications			Lot	1					
<b>2.2.4 (A)</b>	<b>Telecommunication Equipments</b>									
2.2.4.1	SDH Equipment (STM-4 MADM upto 4 MSP protected directions)									
(i)	Base Equipment (Common cards, Cross Connect/control cards, optical base cards, power supply cards, power cabling, other hardware and accessories including sub racks, patch cord, DDF etc fully equipped excluding (ii) & (iii) below			Nos.	1					
(ii)	Optical Interface Cards/SFP									
(a)	L4.1 SFP			Nos.	4					
(iii)	Tributary cards									
(a)	E1 Interface card (Min.8 interfaces per card)			Set	2					
(b)	Giga -Ethernet Interface 10/100/1000 Mbps Base T with Layer-2 switching (Min 4 Interfaces per card)			Nos.	2					
2.2.2.2	Equipment Cabinets			No.	1					
2.2.2.3	VOIP telephone instrument with one common switch (min. 8 port)			Nos.	2					
Subtotal of Part A:										
<b>PART-B:</b>	<b>VENDOR ASSESSED QUANTITIES</b>									
<b>3</b>	<b>Miscellaneous material</b>									



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						Currency #	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
3.1	Galvanized E.H.S. steel wires of size 7/3.35 for lightning shield wire in take off and internal structures, with accessories to complete the specified scope of works:			lot	1					
3.2	Earthing with conductors, electrode grounding materials and it is connecting with lightning protection system with lightning mast, copper conductor, electrodes etc complete with all accessories for control building & Substation.			lot	1					
3.3	1.1kV power and lighting cable for all works (Control room, Staff quarter, Guard room, Switch yard lighting, road and street light etc) to complete the specified scope of work:			lot	1					
3.4	1.1kV control cable to complete the specified scope of works including that for communication works:			lot	1					
3.5	Erection Hardware :-Insulator strings, Disc Insulators, Hardware, conductor, bus-bar materials, cable trays, clamps, spacers, connectors including connectors for Transformer, Junction box, buried cable trenches/pipe of equipment & lighting, all accessories etc. for the following 132kV and 33 kV bays, clamps for substation works and connection between gantry & Tower, all complete as per the specified scope of works:			lot	1					
3.6	ACSR "CARDINAL" conductors for 132kV switchyard with necessary hardware, clamps for connecting, with all accessories for substation works and connection between tower & gantry, complete as per the specified scope of works:			lot	1					

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(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
3.7	ACSR "CARDINAL" conductors for 33 kV switchyard with necessary hardwares, clamps for connecting, with all accessories for substation works and for 33 kV overhead connections to the 33 kV lines at Keraun and all other places as required to complete the specified scope of works:			lot	1					
3.8	Lighting system for outdoor Switchyard, Substation area, Entrance & internal Road, Boudary wall periphery (with support of Galvanised pole eherecessary) as per technical Specification.			lot	1					
3.9	Tubular bus and Bus Support Insulator for 132 kV Bus including all other accessories and hardwares required to complete the specified scope of works:			lot	1					
4.10	Tubular bus and Bus Support Insulator for 33 kV Bus including all other accessories and hardwares required to complete the specified scope of work:			lot	1					
4.11	Special arrangement for erection of Dead end tower in between existing tower no 68 & 69and there must be arrangement so that this tower is erected and stringing of with help of huge no of stringing manpower and multiple crane in one working day so that whole work must be completed within specified limit of time.			lot	1					
4.12	Furniture and miscellaneous indoor facilities for control room as per technical Specification.			lot	1					
Sub total of Part B										
<b>PART-C:</b>	<b>Part-C1: CIVIL AND ARCHITECTURAL WORKS</b>									
<b>4</b>	<b>Installation works of STEEL STRUCTURES (Tower,Gantry structures&amp; Equipment support structures)</b>									

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(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
4.1	Lattice Structure for towers,beams and equipments including peak plates/pack washers and guest paltes including foundation bolts(nuts,washers,MS plate welded at the bottom)									
4.1.1	Lattice structure & foundation bolts			MT	90					
4.1.2	Fastners for towers,beams and equipment support strcutures			MT	5					
<b>4.2</b>	<b>Concrete Foundation for Equipment and Steel Structures</b>									
4.2.1	Excavation in all types of soil and rock including backfilling disposal			Cu.M	2,000					
4.2.2	Stone soling below foundations wherever specified in aproved drawings during detailed Engineering			Cu.M	100					
4.2.3	Providing and laying of Plain Cement Concrete (PCC) (1:4:8)			Cu.M	50					
4.2.4	Providing and laying of Reinforced Cement Concrete Design Mix M15 including form work, pre cast shuttering, Grouting of pockets & underpinning.			Cu.M	200					
4.2.5	Providing and laying of Reinforced Cement Concrete Design Mix M25 including form work, pre cast, shuttering, Grouting of pockets & underpinning but excluding steel reinforcement			Cu.M	2700					
4.2.6	Cutting, bending , placing of reinforcement with binding wire for RCC as per drawing Steel Reinforcement ( Fe 500)			MT	317					
4.2.7	Misc. Structural steel including rails, embedments, edge protection angles, gratings etc. but excluding the reinforcement steel and steel for lattice and pipe structures.			MT	4					
<b>4.3</b>	<b>CONTROL ROOM BULIDING</b>									

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(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
4.3.1	All Civil works including finishing, internal cable trench, etc. complete as per technical specification and approved drawings, excluding excavation, PCC, RCC and reinforcement steel which shall be measured and paid separately under respective items of BPS. (Plinth area measurement)			Sq. M.	416					
4.4	RCC( Rigid Pavement) Road: Construction of concrete road as per approved drawing including all items such as excavation, compaction, rolling, watering, preparation of WBM etc but excluding concrete, reinforcement and structural steel.									
4.4.1	(a) Road 3.75m wide			Sq.M.	500					
4.4.2	(b) Road 5.5m wide			Sq.M.	1700					
4.5	Construction of rail cum concrete road as per approved drawing including all items such as excavation, compaction, rolling, watering, WBM etc but excluding concrete, reinforcement and structural steel.									
4.5.1	a) Section having four rails			Sq.M.	125					
4.6	Chain link fencing as per technical specification and approved drawing excluding concrete			RM	450					
4.7	Switchyard Gate excluding Concrete			Nos.	2					
4.8	Septic tank and soak pit, External sewerage system including all item such as excavation, piping, pipe fittings, manholes, gali trap, gali chamber etc. complete as per technical specification and approved drawing excluding concrete & reinforcement which shall be measured and paid separately under respective items of BPS .									
4.8.1	For 20 users			LS	1					
4.9	Supplying & laying perforated UPVC/HDPE/ pipe 6kg/cm2 for subsurface drainage in switch yard									

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(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
4.9.1	100mm dia			RM	200					
4.9.2	150mm dia			RM	150					
<b>4.10</b>	<b>PileFoundation</b>									
4.10.1	Boring, providing and installation of bored cast-in-situ RCC vertical piles of specified diameter and of any length below the pile cap excluding M25 grade of cement concrete and reinforcement but including the cost of boring including temporary guide casing (supplying and providing M.S Liner), Betonite solution and the length of pile to be embedded in the pile cap (Length of pile for payment shall be measured from bottom of pile cap), all necessary labour, materials, plants, tools and tackles etc. complete as necessary for proper execution of the job.									
4.10.1.1	a. 500mm diameter RCC vertical bored pile			meter	100					
4.10.1.2	b. 600 mm diameter RCC vertical bored pile			meter	100					
4.10.1.3	b. 750 mm diameter RCC vertical bored pile			meter	100					
4.10.1.2	Conducting integrity test on pile using electronic control unit, hand held hammer, accelerometer, computer with required software to assess as-installed pile characteristics including mobilisation of necessary manpower, equipments, materials etc. required for successful completion of the job			No.	4					
4.10.1.3	Initial Load Test			Lot	1					
4.10.1.4	Routine Test			Lot	1					
<b>4.11</b>	<b>Miscellaneous Works</b>									
4.11.1	Clearing and stripping of Substation Area			sq.m.	37000					
4.11.2	Survey of Substation area as per specified			lot	1					
4.11.3	Exploration works for soil strength of foundations including laboratory tests for Substation <b>and Tower</b> as per specified			lot	1					

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(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
4.11.4	Soil Resistivity test			lot	1					
4.11.5	Earth work in filling with borrowed earth with all leads and lifts including royalty,taxes etc for Site Grading including compaction and leveling etc all complete			cu.m.	60000					
4.11.6	Stone filling (40 mm size) over grating of transformer/ reactor foundation & Stone spreading including antiweed treatment in switchyard excluding PCC.			m3.	3040					
4.11.7	Construction of underground Water tank excluding concrete and reinforcement steel, 1000 ltr overhead pvc tank & one shallow tubewell with suction motor, one motor for water supply to overhead tank, auto cutoff switch, required Upvc pipe and fittings for main water supply point to tank, control room building and waste pipe etc and all complete accessories as specification & instruction of site engineer.			lot	1					
4.11.8	Approach Road (outside boundary) from main road to Substation area width 5.5m as per Specifications and site condition including 50mm thick asphalt concrete, Providing, laying, spreading, watering, levelling and compaction for Subgrade preparation, 15cm sand gravel materials for subbase and 12.5cm crusher run material for base course all complete.			sq.m.	300					
Sub total of C										
<b>Sub Total of Part 1</b>										
<b>Part 2</b>	<b>Keraun-Rangeki 33kV Transmission Line</b>									
<b>PART-A:</b>	<b>OWNER ASSESSED QUANTITIES</b>									
<b>A1</b>	<b>Erection and installation Works for or 33kV Line (Steel tubular pole : equivalent strength or more than 540 SP-66 (322 Kg)-IS 2713 Part III)</b>									

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(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
1	Erection of 12m Steel Telescopic Poles(Steel tubular pole : equivalent strength or more than 540 SP-66 (322 Kg)-IS 2713 Part III) digging, back filling of soil, fitting of chhannels all complete works etc.			Nos.	510					
2	Stay Set Installation Work			Set	690					
3	Preconstruction Survey (NEA) per km			Km.	15					
4	As built drawing testing/comissioning complete per km			Km.	15					
5	Transportation of materials,temporary stays, laying & stringing of conductor to the required tension, install with tension bracket, disc, pin insulator, clamp with nut bolt, binding with aluminium wire or PG clamp, complete in all respect. {ACSR Conductor "WOLF"(0.15 sq. In., 67.34 KN)}			3 wire ckt km.	30					
6	Erection of following Steel Structures for pole including nuts, bolts, all types of washers, packplates, step bolts and gusset plates including foundation bolts. (all foundation & gantry)									
i	Support Structure for Poles for 33kV Line and bus Gantry including Foundation Bolts			MT	55					
ii	Fastners and step bolts.(pole clamp, Nuts,Bolts & Washers)			MT	8					
7	Erection, installation and connection of Earthing and lightning protection materials including necessary connectors/ connections, risers etc. complete in all respect( but excluding LM structures for Lightning protection) for line									
i	33kV Lighting arrester (3nos)			Set	6					
ii	Earting materials including rod, strup, connector, nutbolt with all accessories.			Set	6					

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(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
8	Supply, Cutting, bending, fixing in position (placing) as per drawing and binding of reinforcement bar (Fe 500) for RCC work including supply of all materials and hulage up to 30 m Steel for pole.			MT	8					
9	Supply, Plain cement Concrete (PCC) for RCC works (1:1.5:3) for pole (h=1.3m & dia=0.5m) foundation approved quality of cement and sand and crushed stone aggregate including Excavation in all type of soil, backfilling, form work, shuttering, mixing, laying, curing etc all complete with all accessories.			c.m.	150					
Sub Total (B1)										
<b>A2</b>	<b>Erection Works of 33kV Line (Underground Cables, Three Core, Double Circuit)</b>									
1	33kV Underground Power Cable Laying works (2Nos of three Core Conductor in 2 Nos of Flexible Pipe/HDPE Pipe/Conduits) including transportation to site and Restoration of road to original with required drainage, pavement, black-topping, subbase and base as per TS of Department of Roads and/or respective Municipality			km	0.25					
2	Installation of Cable Straight through Joints with accessories all complete including transportation to site			Set	1					
3	Installation of 33 kV outdoor XLPE Cable Termination kit with accessories all complete including transportation to site			Set	2					
4	Installation of 30 kV LA (3Nos), Power Fuse (3Nos) including accessories all complete including transportation to site			Set	2					
5	Supply & Installation of Danger Sheets and Route Markers Complete including transportation to site			rkm	0.25					
Sub total (A2)										
<b>Sub Total of Part A</b>										
<b>PART-B:</b>	<b>VENDOR ASSESSED QUANTITIES</b>									



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(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
1	Earthing works including Supply of Earthing Materials required in U/G Cable Terminations, Straight Through Joints, LA etc to complete the specified scope of works including transportation to site			Lot	1					
2	Design & Construction of Cable Joining Station/Pits			Lot	1					
3	Repaire and maintenance works, testing and commissioning of spare 33kV Outgoing Line bay at Rangeli 33kv Substation			Lot	1					
Sub Total of Part B										
Subtotal of Part 2										
<b>Part 3</b>	<b>Keraun-Biratchok 33kV Transmission Line</b>									
<b>Part A:</b>	<b>OWNER ASSESSED QUANTITIES</b>									
A1	<b>Erection and installation Works for or 33kV Line (Steel tubular pole : equivalent strength or more than 540 SP-66 (322 Kg)-IS 2713 Part III)</b>									
1	Erection of 12m Steel Telescopic Poles(Steel tubular pole : equivalent strength or more than 540 SP-66 (322 Kg)-IS 2713 Part III) digging, back filling of soil, fitting of chhannels all complete works etc.			Nos	850					
2	Stay Set Installation Work			set	1150					
3	Preconstruction Survey (NEA) per km			3 wire ckt km.	50					
4	As built drawing testing/comissioning complete per km			3 wire ckt km.	50					
5	Transportation of materials,temporary stays, laying & stringing of conductor to the required tension, install with tension bracket, disc, pin insulator, clamp with nut bolt, binding with aluminium wire or PG clamp, complete in all respect. {ACSR Conductor "WOLF"(0.15 sq. In., 67.34 KN)}			3 wire ckt km.	50					

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(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
6	Erection of following Steel Structures for pole, lattice tower structure including nuts, bolts, all types of washers, packplates, step bolts and gusset plates including foundation bolts. (all foundation & gantry)									
i	Support Structure for Poles, 33kV Line including Foundation Bolts			MT	85					
ii	Design, Testing and Installation of Lattice Tower Structure for 33kV Line and equipment support including stubs, Foundation Bolts			MT	6					
iii	Fastners and step bolts.(Nuts,Bolts & Washers)			MT	12					
7	Erection, installation and connection of Earthing and lightning protection materials including necessary connectors/ connections, risers etc. complete in all respect( but excluding LM structures for Lightning protection) for line									
i	33kV Lighting arrester (3nos)			Set	9					
ii	Earthing materials including rod, strup, connector, nutbolt with all accessories.			Set	9					
8	Excavation in all types of soil and rock including backfilling disposal etc. for all leads and lifts for lattice tower			c.m.	50					
9	Providing and laying of Plain Cement Concrete (PCC) (1:4:8) for lattice tower			c.m.	10					
10	Providing and laying of Reinforced Cement Concrete RCC works (1:1:2) including form work, pre cast, shuttering, Grouting of pockets & underpinning but excluding steel reinforcement for lattice tower			c.m.	50					

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						Currency #	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
11	Plain cement Concrete (PCC) for RCC works (1:1.5:3) for and pole (h=1.3m & dia=0.5m) foundation approved quality of cement and sand and crushed stone aggregate including Excavation in all type of soil, backfilling, form work, shuttering, mixing, laying, curing etc all complete with all accessories.			c.m.	200					
12	Cutting, bending, fixing in position (placing) as per drawing and binding of reinforcement bar (Fe 500) for RCC work including supply of all materials and hulage up to 30 m Steel for pole and lattice toewr.			MT	15					
Total (A1)										
A2	<b>Erection Works of 33kV Line (Underground Cables, Three Core, Double Circuit)</b>									
1	33kV Underground Power Cable Laying works (2Nos of three Core Conductor in 2 Nos of Flexible Pipe/HDPE Pipe/Conduits) including transportation to site and Restoration of road to original with required drainage, pavement, black-topping, subbase and base as per TS of Department of Roads and/or respective Municipality			km	0.25					
2	Installation of Cable Straight through Joints with accessories all complete including transportation to site			Set	1					
3	Installation of 33 kV outdoor XLPE Cable Termination kit with accessories all complete including transportation to site			Set	2					
4	Installation of 30 kV LA (3Nos), Power Fuse (3Nos) including accessories all complete including transportation to site			Set	2					
5	Supply & Installation of Danger Sheets and Route Markers Complete including transportation to site			rkm	0.25					
Total (A2)										

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**Schedule No. 4 (a): Installation and Other Services****FC: Foreign Currency****(a): Installation and Construction Charges****LC: Local Currency**

Sl. No.	Item Description	Installation Charges								
		Country of Origin	Type & Designation	Unit	Qty.	Portion in Foreign Currency			Portion in Nepalese Currency (in NPR)	
						Currency #	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
A3	<b>Erection Works for 33kV bay extension work at Biratchowk 33kV Substation.</b>									
A3(i)	Erection, Installation, testing and commissioning of equipment									
1	36 kV, 800 A, 3 phase, Vaccum Circuit Breaker for outgoing feeders, three pole operation type, complete with all accessories as per specification			set	1					
2	36 KV, 800A, 3 phase disconnecting switch without grounding switch complete with all accessories as per specification			set	1					
3	36KV, 800A, 3 phase disconnecting switch with grounding switch complete with all accessories as per specification			set	1					
4	36 kV, 30 VA, 33/√3/110/√3 kV Voltage Transformer complete with all accessories asp per specification			no.	3					
5	36 kV, 30 VA, 3 core Current Transformer complete with all accessories as per specification			no.	3					
6	30 kV, 10 kA lightning arrester including discharge counter for cable protection complete with all accessories as per specification			no.	3					
7	33kV line control and relay panel complete with all accessories as per specification			no.	1					
8	Battery charger for 110 V battery complete with all accessorie to complete the specified scope of work for 33kV.			no.	1					
9	110 V maintenance free lead acid sealed type battery complete with all accessories to complete the specified scope of work for 33kV.			no.	1					

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**Schedule No. 4 (a): Installation and Other Services****FC: Foreign Currency****(a): Installation and Construction Charges****LC: Local Currency**

Sl. No.	Item Description	Installation Charges								
		Country of Origin	Type & Designation	Unit	Qty.	Portion in Foreign Currency			Portion in Nepalese Currency (in NPR)	
						Currency #	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
10	Erection of following Steel Structures for towers, beams and equipments including nuts, bolts, all types of washers, packplates, step bolts and gusset plates including foundation bolts, MS plate welded at the bottom, (all foundation & gantry, Equipment support)									
10.1	Lattice Structure & equipment support including Foundation Bolts			MT	5					
10.2	Fastners for Tower Beams and equipment support structure and step bolts.(Nuts,Bolts & Washers)			MT	1					
A3(ii)	Civil Works for all foundation & gantry (As per technical specification)									
1	Excavation in all types of soil and rock including backfilling disposal etc. for all leads and lifts			cu.m.	50					
2	Providing and laying of Plain Cement Concrete (PCC) (1:4:8)			cu.m.	10					
3	Providing and laying of Plain Cement Concrete (PCC) (1:2:4)			cu.m.	50					
4	Providing and laying of Reinforced Cement Concrete Design Mix (M25) including pre cast, shuttering, Grouting of pockets & underpinning but excluding steel reinforcement.			cu.m.	100					
5	Providing and laying Plain Cement Concrete 1:5:10 (1 cement : 5 sand : 10 Stone aggregate)			cu.m.	10					
6	Steel Reinforcement (Fe 500)			MT	3					
7	Stone spreading including antiweed treatment in switchyard but excluding PCC.			cu.m.	60					
8	Stone soling below foundations wherever specified in approved drawings during detailed engineering			cu.m.	10					
9	Site levelling									
9.1	Earth work in cutting & Filling in all types of soils including soft/disintegrated rock			cu.m.	20					

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**Schedule No. 4 (a): Installation and Other Services****FC: Foreign Currency****(a): Installation and Construction Charges****LC: Local Currency**

Sl. No.	Item Description	Installation Charges									
		Country of Origin	Type & Designation	Unit	Qty.	Portion in Foreign Currency			Portion in Nepalese Currency (in NPR)		
						Currency #	Unit Rate	Total Charges	Unit Rate	Total Charges	
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6	
9.2	Earth work in Filling with borrowed earth			cu.m.	20						
Sub total (A3)											
Subtotal of Part A:											
<b>PART-B: VENDOR ASSESSED QUANTITIES</b>											
1	Earthing works including Supply of Earthing Materials required in U/G Cable Terminations, glands, lugs, Straight Through Joints, LA etc to complete the specified scope of works including transportation to site.			Lot	1						
2	Design & Construction of Cable Joining Station/Pits			Lot	1						
3	Support Insulator including all other accessories required to complete the extension of 33 kV Bus			Lot	1						
4	Erection Hardware										
	Galvanized E.H.S. steel wires of size 7/3.35 for lightning shield wire, Internal and Takeoff gantry, Insulator strings, Disc Insulators, Hardware, conductor, Al tube, bus-bar materials, cable trays, clamps, spacers, connectors including equipment connectors, Junction box, earthwire, buried cable trenches/pipe equipment & lighting, all accessories etc. for the following:										
4.1	Line Bay			Set	1						
5	Earthing and lightning protection including necessary connectors/connections, risers etc. complete in all respect( but excluding LM structures for Lightning protection)										
5.1	Earth Conductor (copper)			Lot	1						
5.2	Earth Rod (copper clad steel)			Lot	1						
6	POWER & CONTROL CABLES										
6.1	Power Cables(PVC)- (1.1kV grade)			Lot	1						
6.2	Control Cable (PVC)- (1.1kV grade)			Lot	1						

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

**FC: Foreign Currency**

**(a): Installation and Construction Charges**

**LC: Local Currency**

Sl. No.	Item Description	Installation Charges								
		Country of Origin	Type & Designation	Unit	Qty.	Portion in Foreign Currency			Portion in Nepalese Currency (in NPR)	
						Currency #	Unit Rate	Total Charges	Unit Rate	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	7	8	9=8x6	10	11=10x6
6.3	Cable glands, lugs & straight through joints for Power & Control cables			Lot	1					
<b>SUB-TOTAL-B</b>										
Subtotal of Part 3:										
<b>Total for 132/33kV KERAUN Substation (II) (Part-1+ Part-2+ Part 3)</b>										
<b>Total for Schedule 4( Total of column 9 and 11 to be carried forward to Schedule 5: Grand Summary)</b>										

# Specify currency in accordance with ITB Clause 12.1 and corresponding BDS clauses, Vol.I of the Bidding Documents.

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

**Date:**

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

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

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

#### REMARKS:

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

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

**Date:**

**Total for Schedule 4( Total of column 9 and 11 to be carried forward to Schedule 5: Grand Summary)**



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**PMD/EGMP/KRON-077/78-02:Design, Supply, Installation and commissioning of 132/33kV Air Insulated Substation at Keraun, Morang District with associated 33 kV Sub-Transmission Lines**

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

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

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

## REMARKS:

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

Name of Bidder:

Date:

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

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

#### (d): Maintenance Charges

SI No	Description	Unit	Qty.	Total Maintenance Charges	
				Currency	Total Maintenance Charges
	1	2	3	4	5
1	Maintenance Charges for Communication Equipments including SDH & MUX. for One (1) year during Warranty period	Year	1		
2	Maintenance Charges for Communication Equipments including SDH & MUX. for Six (6) years after Warranty period	Year	6		
	Total Maintenance Charges for Communication Equipment Package (Total Schedule 4c)				
<b>Total for Schedule 4 (Total of column 5 to be carried forward to Schedule 5: Grand Summary)</b>					-

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

**Date:**

# NEPAL ELECTRICITY AUTHORITY

## PROJECT MANAGEMENT DIRECTORATE

### Keraun 132/33kV Substation Project

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#### Electricity Grid Modernization Project

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#### Schedule No. 5: Grand Summary

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

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Place: \_\_\_\_\_

Designation: \_\_\_\_\_

Common Seal: \_\_\_\_\_

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**Keraun 132/33kV Substation Project**

## Schedule and Rates and Price

**Electricity Grid Modernization Project**

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

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

Date: \_\_\_\_\_

Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Designation: \_\_\_\_\_  
 Common Seal: \_\_\_\_\_